	DOCKET NO. CP17000	DOC NO: USAKE-PT-SRREG-00-
	RESOURCE REPORT NO. 2	000002-000
Alaska LNG	APPENDIX S	April 14, 2017
PROJECT	Part 5 of 6	REVISION: 0
	PUBLIC	

Part 5 of 6: Appendix S of Resource Report No. 2





Legend

- mw_20160411 selection
- + AKLNG2014, Completed
- + AKLNG2015, Completed
- AKLNG2016, Not Started



MONITORING WELL LOCATIONS ALASKA LNG PROJECT NIKISKI, ALASKA





Legend

- mw_20160411 selection
- + AKLNG2014, Completed
- + AKLNG2015, Completed
- AKLNG2016, Not Started



MONITORING WELL LOCATIONS ALASKA LNG PROJECT NIKISKI, ALASKA

Project No. 04.10160001





Legend



- + AKLNG2014, Completed
- + AKLNG2015, Completed
- AKLNG2016, Not Started



MONITORING WELL LOCATIONS ALASKA LNG PROJECT NIKISKI, ALASKA





Legend



- + AKLNG2014, Completed
- + AKLNG2015, Completed
- AKLNG2016, Not Started



MONITORING WELL LOCATIONS ALASKA LNG PROJECT NIKISKI, ALASKA





Legend

- mw_20160411 selection
- + AKLNG2014, Completed
- + AKLNG2015, Completed
- AKLNG2016, Not Started



MONITORING WELL LOCATIONS ALASKA LNG PROJECT NIKISKI, ALASKA

Project No. 04.10160001





Legend



- + AKLNG2014, Completed
- + AKLNG2015, Completed
- AKLNG2016, Not Started



MONITORING WELL LOCATIONS ALASKA LNG PROJECT NIKISKI, ALASKA





Legend

- mw_20160411 selection
- + AKLNG2014, Completed
- + AKLNG2015, Completed
- AKLNG2016, Not Started



MONITORING WELL LOCATIONS ALASKA LNG PROJECT NIKISKI, ALASKA



Site/Client Name:	Nikiski, AK					Well II	D:				
Project # : Water Q	uality Monito	oring (WQM),	AK LNG			Sampl	e ID:				
Sampled By:						Sampl	e Time:		Sampl	e Date:	
Weather Conditions	S:					Duplic	ate ID:				
Sampling Method:	Low Flov	v 🗌 Other_			_	MS/MS	SD 🗌 Yes	No	Trip Blank	Required:	Yes 🗌 No
					Well Info	ormation			·	<u> </u>	
Well Type: 🗌 Pern	nanent 🗌 T	emporary		Well Di	ameter	in.	Screen Inte	erval:	ft B	GS to	ft BGS
Well Condition:	Good 🗌 Fa	iir 🗌 Poor (if	fair or poor	explain	n in Notes)		Stickup	Yes 🗌 N	o; If yes,	ft abov	e ground
				Ga	uging/Purgi	ng Inform	ation				
Depth to Water (ft B	BTOC):					Tubing/	Pump Depth	(ft. BTOC):		
Depth to Product (ff						Purge 8	Start Time (24	4-nr) -br)			
Product Thickness	(ft)					Total P	urge Time (m	nin)			
LOW FLOW: Ma	x Draw Down	n = (Tubing D default value o	epth – Top o of 0.3 ft.;	f Screen	Depth)	X 0.25 :	=(ft); if	screen inte	erval is not kno	own or water tabl	e is below top of
Min. purge volume if	required: pu	rge volume (ga	al) = volume d	of water/f	it(gal/ft	X Water co	lumn thickness	s(ft) X # of casing	volumes	_=gal
Well Diameter -	gal/ft	1" – 0.0)41 gal/ft		2" – 0.1	63 gal/ft		4' – 0.653	gal/ft	6' – 1.4	169 gal/ft
(Apping atab	lo poromotoro	for 2 concourt	ivo rooding (N	Vater Quality	y Paramet	ers		minimum of 1	flow through coll	volumo])
Time	Flow	Purge	Tomp					pumping a	Turbidity		
(24-hr)	Rate	Volume	(°C)	Con	ductance	(mg/L)	(mV)	pri	(NTU)	(ft BTOC)	(ft)
	(gal/ minute)	(gal)	(+ 3 %)	(۲	uS/cm ^c)			(+ 0.1)	(+ 10%.		
	, , , ,		(± 0 70)	((± 3%)	(± 10%)	(± 10mV)	(= 0)	or <5		(Maxft)
									NTU)		
Parameter Stable (Check applic	cable)									
Sample Color:				Sam	ple Odor:			Shee	en:		
					Analytical	Sampling					
	Analy	/ses			Check A	pplicable			Comm	nents	
WQM Method Statem	ent Table 2: G	eneral Ground	water Quality	Suite							
WQM Method Statem	ent Table 3: W	ater Supply C	uality Suite								
Notes:											
10105.											
Equipment: Pump	о Туре				Tubing (Typ	e/Length)			_ Bailer Typ	e	
Water Level Meter_				M	ulti-Paramet	er Meter (N	/lake/SN#)				
Turbidity Meter (Ma	ake/SN#)							F	ilter Lot #		
Purge Water Hand	lling: 🗌 Dis	charged to s	urface 🗌 Co	ontainer	rized 🗌 Tre	ated (how?	?)				
_	-	-				•			_		

Water Parameter Meter Calibration Log

Date:		_	Time:	(Calibration By:			
Meter Mar	ufacturer and	Identification #:						
Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
	7.00							± 0.10
рН	4.00							± 0.10
	10.00							± 0.10
Sp Cond (mS/cm)	1.413							± 10%
ORP (mV)	240							
DO*								± 2%
* Date: Meter Mar	If parameter not in Note that the True	ncluded in sampling e Value for DO is de _ Identification #:	event, fill in box with ependent on pressure Time:	n NA (not applicab e and altitude; refe	le) prence the DO Cali Calibration By:	bration Table		
Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
	7.00							± 0.10
pН	4.00							± 0.10
	10.00							± 0.10
Sp Cond (mS/cm)	1.413							± 10%
ORP (mV)	240							
DO*								± 2%
* Date: Meter Mar	If parameter not in Note that the True	ncluded in sampling e Value for DO is de _ Identification #:	event, fill in box with pendent on pressure Time:	n NA (not applicab e and altitude; refe	le) erence the DO Cali Calibration By:	bration Table		
Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
	7.00							± 0.10
рН	4.00							± 0.10
	10.00							± 0.10
Sp Cond (mS/cm)	1.413							± 10%
ORP (mV)	240							
DO*								± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table



Turbidimeter Calibration Log

Calibration Date	Calibration Time	Calibration By		
Instrument Make/Model	Serial #	Cal Fluid #1	Cal Fluid #2	Within Acceptable
		NTU	NTU	Range?
Bump Check 🗆 or Calibration 🔲 Notes	3:	Bump check result or post- calibration reading:	Bump check result or post- calibration reading:	yes
				no

Calibration Date	Calibration Time	Calibration By		
Instrument Make/Model	Serial #	Cal Fluid #1	Cal Fluid #2	Within Acceptable
		NTU	NTU	Range?
Bump Check 🗌 or Calibration 🗌 Notes	:	Bump check result or post- calibration reading:	Bump check result or post- calibration reading:	yes
				no

Calibration Date	Calibration Time	Calibration By		
Instrument Make/Model	Serial #	Cal Fluid #1	Cal Fluid #2	Within Acceptable
		NTU	NTU	Range?
Bump Check Or Calibration Notes	3:	Bump check result or post- calibration reading:	Bump check result or post- calibration reading:	yes
				no

Calibration Date	Calibration Time	Calibration By		
Instrument Make/Model	Serial #	Cal Fluid #1	Cal Fluid #2	Within Acceptable
		NTU	NTU	Range?
Bump Check 🗌 or Calibration 🗌 Notes	S:	Bump check result or post- calibration reading:	Bump check result or post- calibration reading:	yes
				no

Calibration Date	Calibration Time	C	Calibration By		
Instrument Make/Model	Serial #		Cal Fluid #1	Cal Fluid #2	Within Acceptable
			NTU	NTU	Range?
Bump Check 🗌 or Calibration 🗌 Ne	ites:	Buca	ump check result or post- alibration reading:	Bump check result or post- calibration reading:	yes
					no

Calibration Date	Calibration Time	Calibration By		
Instrument Make/Model	Serial #	Cal Fluid #1	Cal Fluid #2	Within Acceptable
		NTU	NTU	Range?
Bump Check 🗌 or Calibration 🗌 Note	S:	Bump check result or post- calibration reading:	Bump check result or post- calibration reading:	yes
				no

Note: A bump check can verify the instrument is in proper calibration if the instrument reads an accurate value for a calibration solution (without performing a full calibration). In the event a bump check does not indicate the instrument is properly calibrated, a calibration will be performed, per manufacturer instructions.



APPENDIX B WELL SAMPLING FORMS



Site/Cilent Name: Nikiski, AK

L

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16 Groundwater Sampling Form

Well ID:

56.1 - 76.1

B

W-1 0

Project # : Water C	Quality Monito	oring (WQM)	, AK LNG		Sampl	e ID:	ow-	1.08	6	
Sampled By: K	Johnso	n.			Sample	e Time:	353	Samp	le Date: 91	0-16
Weather Condition	s: 0.0	runst n	(° W		Duplica	ate ID:				
Sampling Method:	Low Flow	v 🔲 Other_			MS/MS	SD 🛄 Yes	No No	Trip Blank	Required 🗹	Yes 🖸 No
Contraction of the second second	0242020223	State State	的自动规定的法	Well	information =	12022010220	STORE A	-00	11.0.12T	10-
Well Type: D Per		emporary		Well Diameter	ín.	Screen Int	erval: 5	<u></u> #E	GS to	ît BGS
Well Condition:		uir 🗌 Poor (i	if fair or poor	explain in Notes)	Stickup	Yes IN	lo; If yes, 👱	ft abov	e ground 2
Death to Malar (8)	BTOC)	10 25	energie erzener	Gauging/Pu	Tubles/	Burne Death		- 42	00	
Total Depth (0 BT)		13.47	BO H	HILL KO	Wel Purce S	Slart Time (2	4-hr)	1220	00	
Depth to Product (I	R. BTOC)			otel Death	Purge E	nd Time (2	l-hr)	1416		
Product Thickness	(ft)		•	~76.01	- Total Pu	urge Time (n	nin)	56 "	ion.	
LOW FLOW: M	IX Draw Down	n = (Tubing C	lepth - Top of	Screen Depth)	X 0.25 =	:(ft); i	f screen inti	erval is not kn	own or water table	is below top of
Siin, purce volume li	reen, men use f required: cu	ma volume (o	all = volume o	f waterft (or	al/ft) X Water coi	una thicknes	s (t)	X # of cesine	1 volumes	a nai
Well Diameter -	- gal/R	1" - 0.1	041 gaVit	2*-(0.163 gaVit	1	4' - 0.653	gal/ft	6'-1.4	69 gal/ft
(Achieve stab	le parameters	for 3 consecu	tive reading, 4	Water Qua	ality Paramete	HIS ing taken after	r pumping a	minimum of	t flow through cell	volume])
Time (24-hr)	Flow Rate	Purge Volume	Temp (°C)	Specific Conductance	DO (mg/L)	ORP (mV)	pН	Turbidity (NTU)	DTW (h BTOC)	Drawdown (tt)
	les r	(ger)	(± 3 %)	(±3%)	(± 10%)	(± 10mV)	(± 0.1)	(± 10%, or <5 NTU)	W/tubing	(Maxfi)
1325	400 !	· Zga	7.97	0.253	8.67	69.0	6.73	1072	15.25	0.00
1329	HUD	-64al	7.25	0.250	1.85	43.5	605	102.7	15.25	0.00
1333	400, 1	1 00	732	0.249	1.50	41.0	5.90	76.18	11 11	0.00
1336	400	1.344	7.23	0.250	1.19	39.6	5.72	69.61	N 14	0.00
1339	400	1.544	7.24	0.249	1.13	37.0	5.66	70.06	L 6	0.00
1342	400	1. Zuch	7.43	0.248	0.91	30.9	5.56	70.46	L	0.00
1245	400	2 001	2 30	0 249	0.99	777	5.57	71.06	<u>р</u> . Н	0.00
1248	Mati	27-1	7.20	0,244	0.80	727	5 41	1517	- 11 11	0.00
1351	400	2 Had	7.24	0.244	0.76	19.5	5 45	72 97	W 1	0.00
1253 (-	lan ha	2-1941	11.21	0.411	0.10	1100	3715	13,01		-0.00
1533 34	The think						-	1		
1416- CW	1 Mige	Alte			+					
Parameter Stable (Crieck appro	aore)	X	X	(×	DK			
Sample Color:	light (Siey tok	nun	Sample Odor:	Su Hu	1	Shee	m: No	ne	
				Analytic	al Sampling		_			
	Analy	885		Checi	k Applicable			Comm	ients	
WOM Method Statem	ent Table 2 Ge	eneral Ground	water Quelity :	Suite		1	Suite	X		
WUM Method Statem	enx ladie 3 vy	ater Supply L	IUBINY SUNA				-		1997 I	
				-		-		Laht		
Notes: . \ . i \	- 1	- 11						11911	Difne	OC Clau
·V014c	yeat	7.4	winter	ie value	z setul			BIC	pinge wai	er, ciay-c
• Not	e-Scher	natic	or We	11 Shows	76.1 6	eptin to	tal - p od	ossible	Sed. ut	Lottom C
Equipment: Pump	Type_Hu	rivane	SNA	Tubing (T	ype/Length)	375	1.500	Bailer Tvo	e	
Water Level Meter_	5004	Keck ta	11 tune	Multi-Param	eter Meter (Ma	ke/SN#)	ISI SS	6 IDE	10 1994	
Turbidity Meter (Ma	ke/SN#)^	ticro me	Node	20000	SN # 20	140701	BI FI	iter Lot #	11558	
Purge Water Hand	ling: 🔲 Disc	charged to su	urface	ntainerized 🔲 T	realed (how?)	Drw	51			
BGS = B	elow Ground S	Surface, BTO	C= Below To	p of Casing, NA =	Not Applicable		and the second se	Pag	e l of	
_								• ••5		



Ske/Client Nam	: Nikiski, Al	ĸ				Well	ID:	W-2	A				
Project # : Water	Quality Moni	itoring (WQM	, AK LNG			Same	Sample ID: 0W-7 -0 816						
Sampled By:	K. Johr	1500		_		Samp	pie Time:	1145	Sam	ple Date: 87	10/16		
Weather Condition	ms: 0ver	ast ~	60° F			Dupli	cate ID:						
Sampling Method	Low Fic	w 🗌 Other_			_	MS/M	ISD 🗌 Yes	No	Trip Blan	k Required: 🗖	Yes 🗌 No		
Wall Type 12 Pe		Temporani	8 1	10/	Well In	formation	Deres tel	an tradition	23.40	METORY H3.	HO ZER MAN		
Well Condition:		air 🗆 Poor (f fair or poor	r explain	ameter	un,	Stickun/		No: If yes	BGS to 17.	T_ft BGS		
設定した パッシー	ALL AREAS	· Securit	Retraction of	Ga	uging/Pur	ging Inform	ation			11 8001	re ground		
Depth to Water (f	BTOC):	38.45	267	Diwu	-Huky	Tubing	Pump Dept	h (ft. BTO)): 107.	5 13	36.f+ hub.		
Depth to Product	(ft. BTOC)			+ <u>X</u> -	Packer	Purge	End Time (2)	(4-nr) 4-hr)	1112	2			
Product Thicknes	s (ft)	->	Total 1	Depth	143.4	D Total P	Purge Time (r	nin)	80	Mir			
LOW FLOW: A	lax Draw Dow creen, then use	m = (Tubing E e default value	epth - Top s of 0.3 ft.;	t Screen	Depth)	X 0.25	=(it); i	f screen int	erval is not k	town or water tabl	le is below lop o		
Min. purge volume	if required: p	urge volume (g	al) = volume o	of water/l	t(gali	tt) X Water c	olumn thicknes	\$ <u>(</u> (I) X # of casin	g volumes	= gal		
	- yavıt 1		A I Gava		2" - U. Valar Quali	163 gal/π by Rammed		<u>4' - 0.65</u> 3	gal/ft	6'-1.4	169 gal/ft		
(Achieve sta	bie parameters	for 3 consecu	ive reading, 4	l parame	ters if practic	al (each read	ding taken alte	r pumping a	lo muninim	1 flow through cell	volume])		
Time (24-hr)	Flow	Purge Volume	Temp (°C)	Con	pecific ductance	DO (mg/L)	ORP (mV)	рH	Turbidity (NTU)	DTW (R BTOC)	Drawdown		
	m	(gal)	(+ 3 %)	(#	:S/cm [°])			(+0.1)	(+ 10%	W/Jubing	704		
	1 1000	`	(20.0)	(± 3%)	(± 10%)	(± 10mV)	120.17	or <5.2	0.2	(Maxft)		
1120	400	1.44a b*	8,00	0.7	42	5.81	149.8	6.38	1000-	38.75 ¥	.30		
1123	440	Zgal	708	0.7	201	2.16	168:7	8.09	195.0	38.80	.35		
1126	400	2.3ga1	6.71	0.1	91	1.63	170.9	7.93	128.8	38.81	•36		
1130	400 !	Zleyal	6.75	0,	90	1.30	164.9	7.86	113.2	38.82	.37		
1134	400 .	3.0gn1	667	0.1	89	1.10	162.4	7.83	122.2	38.82	.37		
1138	400	4.Dgal	6.67	0.	188	0.40	160.1	7.80	113.1	38.84	.39		
1145- 54	mpre	time											
••• ·					-	* San	pre used	PTW	measu	rement-6	Max dra		
1237 - FA	Lillion	POHIE	5			4							
		\$											
Parameter Stable (Check applic	able)	Y					V					
Sample Color:	sht Gre	J		Samp	ole Odor:	Sallar		Shee	n: Aloa		0/32		
	10.0	+	100		Analytica	Sampling		-	- Nur				
	Analy	1865			Check /	pplicable			Comm	ients			
NOM Method Statem	ent Table 2: G	aneral Groundy	valer Quality 5	Suite	1 10								
X2					71170		- /	35 da	<u>51 +vb/</u>	1 5 (ect 0	Dyt		
					7			b/c wa	5 101 24	e to act 1	by table		
Notes: - (asing	high	30	ft .	whe	n wl	mete	(all	pu lu	D. Iron	SHAILU O	nit.		
<u> </u>	WL	lare	· /-	*D'	rige 1	gavon	to rec	ir Jan	y setes	eat from	gongton		
- DTW taxe	n on t	No'rth Side	Casing	150		Te	your line		1 KT		J .		
iquipment: Pump	Туре_Ни	JANE	SNH 7	3.77	ubing (Typ	e/Length)	.375 x	.500	Bailer Typ				
Vater Level Meter	500f+	Keck tu	(+ tape	Mul	lti-Paramel	er Meter (Ma	ake/SN#)	I 556	IDE	101894			
urbiolity Meter (Ma	Ke/5N#)	7000	110	/10	ושיפו	2000	2	Fil	ter Lot #	HISS 8			
								1			1		



Site/Client Name-	Mikieki AK				Well	<u>۱۵۰</u>	1-30			
Brolast # - Mater	uality Monito		AKING		Same		Ohl	3-00	16	
Sampled Bur U		A any (FACINI)		1., mili	Sampl	a Time:	750	Same	le Date: 2~1	()-1 (0
Meethes Condition	- 1011150	Encor a	-20°E	all 12-10MA	Dualia		1 30	Saut		<u> </u>
Vyeather Conditions	s mer	alst "	- 50 F W		Duplic					
Sampling Method:(Low Flow	v 🗋 Other_	and the second second		I MS/M				Redniceor	
Well Type: 151 Perm		emoorany		Welt Diameter	ormanon a	Screen Inte	erval TC	0.00 ft F	3GS to 50.GI	D R BGS
Well Condition: ISK			f fair or ogor	explain in Noles)		Stickup M	Yes II N	lo: If yes.	to the abov	
			Tion of poor	Gauging/Purg	ing inform	ation				
Depth to Water (ft E	STOC):	34.6	2		Tubing	Pump Depth	(ft. BTOC) (0.0) (1	-
Total Depth (It BTC):):	70	.60		Purge	Start Time (2	4-hr)	· 722	-	
Depth to Product (if			_		Purge i	and Time (24	i-hr)	1830		
Product Inickness	(II) T Daw Down	Tubing F	enth - Top of	Screen Depth)	10(a) P	urge i me (n	ari) Screen inte	<u>(o D P</u>	nu 🔨	e is below top of
SCh	een, then use	default value	of 0.3 ft.;	Screen Deputy	^_ 0.23	(1); 4				a ta peron pp o
Min. purge volume if	required: pu	rga voluma (g	al) = volume o	f water/ft(gal/	I) X Water co	lumn thicknes	(f)) X # of casin	volumes	= gal
Weil Diameter -	gal/n	1 - 0.	041 gal/n	2 - 0,	163 gal/it		4' - 0.653	gavn	6 - 1.4	169 gaVit
(Achieve stabi	e parametera	for 3 consecu	live mading, 4	Water Qualit exameters if practic	ly Paramet	ers ling taken after	oumping a	minimum of	1 Sow through cell	(femulov l
Time	Flow	Purce	Temp	Specific	DO	ORP	pH	Turbidity	DTW	Drawdown
(24-hr)	Rade,	Volume	(°C)	Conductance	(ուց/է)	(mV)		(NTU)	(It BTOC)	(11)
2 C	minute)	(gai)	(±3%)	(µS/cm')			(± 0.1)	(± 10%)	Vo/LuniNa	
	38		1870	(± 3%)	(± 10%)	(± 10mV)		or <5 NTU)	/440"]	(Maxft)
1724	400 -	2.594						•	34.60	-0.2
1726	400	(legal	5.59	0.187	27.04	917	6.43	66.57	34.60	0
1729	HOD 1	Ragi	5.44	0.184	2.74	57.6	65	53.57	34.60	0
1732	Hac J	141	5.42	0.183	1.58	42.8	(. 26	45 28	3410	
1735	400	13.01	5,43	0.184	1.20	22.9	6.23	42.99	4	0
17 29	MODT	15.1	526	0195	1.14	24.8	614	5115	N N	0
174	um	2.01	524	0.184	1.04	264	6.09	20 -1	ч	0
172.414	Lida	23 1	526	0.10	<u> </u>	710		22 (1)	1.	
174-1	-100	C.Lia	5.70	0.105	0.15		6.00	2750	1.	0
	400	2. 5gal	5.57	0.189	Unit	4,5	6.07	57.47	4	0
1750 50	mpre									
									-	
Parameter Stable (C	Check applic	able)	N	<u>x</u>		X	~			- 1
Sample Color:	clea	۲ ۲		Sample Odor:	Sulfu	1 Arna	Shee	in: No	NO.	
				Analytica	Sampling	0				
	Analy	895		Check /	Applicable			Comn	nents	
WQM Method Stateme	ent Table 2: Ge	eneral Ground	water Quality :	Suite	· · · ·		(541	e X	>	
WQM Method Stateme	ent Table 3: W	ater Supply C	Iuality Suite				~			
Notes: pular	e wate	r Vers	clear	at beginne	ng ar	rd e	nd			
· · · ·	-> Millo	LUND	10 (1)	U L	U					(
	111	JUE	0 04	cur k-pac	Yer	Tallon U	not Lo	PE]
Equipment Dump	551	LAN H	2.1281	a an Tables (Tra		235 .	500	Delles 7		
Water Lavel Mater	Sont+ 1	LPCX J	H tano	I uping (1yp	er Lengin) _	aka/Chidh	ST C	G I DA	E 11/1094	— I
	~ ~ ~ ~		THE PER		er meler (M	Inke/3(N#)	2 22			
Turbidity Meter /Mai	ke/SNH)	Millo	TPW	model 2m	00		C1	tor I at #	LICCO	
Turbidity Meter (Mal	ke/SN#)	Millo	TPW 1	model 200	00		Fi	Iter Lot #	HISS8	

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

. 1

Page I of



Site/Cilent Name	: Nikiski, Ak	(•	Well I	D: 0	W-H	A			
Project # : Water	Quality Monit	ioring (WQM), AK LNG		Samp	Sample ID: 04-4-086					
Sampled By: V	Johnson				Samo	le Time:	1675	Sam	ble Date: 610	10/16	
Weather Condition	ns: Ovela	11 260	OF SOUN	Kle rain	Duplic	ate ID:	1962	5011			
Sampling Method	D Low Flo	w 🗌 Other			MS/M			Trio Blan	Required A	Yes No	
NETTER CONTRACTOR	17. 1 27.7 H 27.7	Decou.Page	加加加加产厂	Well In	formation	SUPLIVER		Contraction of the	Har of states		
Well Type: D-Per	manent 🛄 7	Temporary		Well Diameter	oln.	Screen In	terval: 📘	10.50	BGS to 20.	40 # BGS	
Well Condition:		air 🗌 Poor (lf fair or poor	explain in Notes)		Stickup	Yes 🔲	No; If yes, 🛃	- 70 . abo	ve ground	
undel Station and	Stop 2538	FI P	ekonse estas	Gauging/Pur	ging Inform	ation	17.26	经 有的的利用	2012.222.222	38.151.37958.5855	
Depin to vvaler (n Total Depth (ft. BT		90,5	ブ		Tubing	Pump Dept	h (R. BTO)		0.0		
Depth to Product ((ft. BTOC)	110.	50		Purge	End Time (2	4-hr)	12.50	1200		
Product Thickness	s (fl)	-			Total P	urge Time (min)	70 mil	1.7		
LOW FLOW: M	ax Draw Dow men, then use	n = (Tubing I default value	Depth – Top of of 0.3 ft.;	Screen Depth)	X 0 25	=(ft);	if screen in	lerval is not kr	lown or water tab	le is below top of	
Min. purge volume i	If required: pu	irge volume (;	pal) = volume c	of water/ft(gal	int) X Water co	lumn thickne:	ss(1) X # of cesin	g volumes	=pai	
Well Diameter -	- gal/ft	1"-0.	041 gal/ħ	2* - 0.	.163 gaVit		4' - 0.653	gal/ft	6'-1.	469 gal/R	
(Achieve stat	ble parameters	for 3 consecu	rtive reading. 4	Water Qual parameters if practic	lity Paramet	ers ling taken afte	r outroine s	n minimum of	1 flow through cal	(amulov	
Time (24-hr)	Flow Rate	Purge Volume (gal)	Temp (°C)	Specific Conductance	DO (mg/L)	ORP (mV)	рН	Turbidity (NTU)	DTW (ft BTOC)	Drawdown (ft)	
1550-pre pu	ne - sge	ī i	(± 3 %)	(± 3%)	(± 10%)	(± 10mV)	(± 0.1)	(± 10%, or <5 NTU)	tubing	(Maxft)	
1555	400	.69a1	5.33	0.190	1.31	83.9	8.59	163.0	56.52	-02	
1558	400,	1.0 gal	5.09	0.187	1.22	81.6	8.39	144.0	56.52	0	
1601	400	1.5 gal	5.17	0.188	1.13	84.5	8.29	120.1	ie ft	0	
1604	400,	~2ya)	5.21	0.188	1.00	87.0	8.20	115.0	C1 15	0	
1609	400	~3.5yal	5.34	0.186	F9.0	91.6	8.07	127.0	18 86	0	
1613	4001	Hgal	5.21	0.187	0.72	93.5	8.02	140.4	4 11	0	
1617	400	2424al	5.23	0,185	1.46	93.2	7.94	163.4	11 11	0	
1620	4a .	n4.5gal	5.24	0,186	0.75	43.2	7.48	195.0	ti n	0	
1623	400,	Sgal	5.18	0,185 ,	Goodic	92,4	7.99	204.3	TV H	0	
		1.9		1	air whole						
1625 - Sam	he				0.66		1				
Parameter Stable	Check applic	:able)	~	oL		د.					
Sample Color: D	anne 1	Baun	leur.	Sample Odor:	Salar		Sher	L	L		
				Analytica	al Sampling	-					
	Analy	/585		Check	Applicable		-	Comm	ents		
VOM Method Statem	ent Table 2 G	eneral Ground	water Quality	Suite		163	wite	II			
VOM Method Statem	ent Table 3: W	ater Supply C	Juality Suite					~ /		1	
on ogenen		*) 2/25									
iotes: ~ pulae	water	orange	-to bran	n tint. C	larity	acod.	but s	tal Inte	0		
· Note 16	- pucter	- set	at n	110-f+, ni 1381	eed to	o push oflan we	past DIE	to get	into s	lieon.	
Equipment: Pump	Туре_Нч	nian e	55 2# 19	Tubing (Ty	pe/Length)	.300 X	.500	Bailer Tvo	e		
Vater Level Meter	5004+ .	Kalh H	# tape	Multi-Parame	ler Meler (M	ake/SN#)_	BE 550	6 101	E101894		
furbidity Meter (Ma	ke/SN#)/	MICO	TPW /	model 20	0000		F	lter Lot #			
turna Watas Mass			interes and			Drut	n				
m Ra astrat Ligito		avarged to s	UIRCEAL YCO		aleo (how?)						
BGS = B	elow Ground	Surface, BTO	C= Below To	p of Casing, NA = N	Not Applicable			Pag	el of		



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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16 **Groundwater Sampling Form**

?

Site/Client Name:	: Nikiski, AK				Well I	Well ID: TPW-5						
Project # : Water C	Quality Monit	oring (WQM)	, AK LNG		Samp	le ID: P	W-5	-0816				
Sampled By:	4. Jam	400	0	Lail and	Samp	le Time:	1405	Sam	la Date: 8-	11-16		
Weather Condition	15' 0	0 0/0	A0C	save jr	Duolie	eta iD:		- oang				
Esemplies Methodd			<u>0-</u>	•	Dopin							
Sampung metricos	LA LOW FID		- 10M		MS/M		ETN0	Trip Blank	Required:	Yes 🗌 No		
Well Type: DI Per		emporary	in was special to a	Well Diameter	Comation	Screen Int	enat:	TILBR		A 200		
Well Condition	Good D Fa	air 🗖 Poor (i	f fair or noo	revolain in Notes)	····	Stickup 5		In Human I	2 51	necs		
	ACC. COLLAR			Gauging/Run	alog inform	ation		vo, n yes, _1		e ground		
Depth to Water (it I	BTOC):	30.50	++	eurgringer en	Tubina	Pump Depth	R. BTO	1 95	4	1.602.002.002.002.002.002.002.002		
Total Depth (it BT	OC):	118.	50 P4#	v or Total b	HuPurge	Start Time (2	4-hr)	1230	<u> </u>			
Depth to Product (I	R. BTOC)				Purge	End Time (24	i-hr)	74	140			
Product Thickness	(fl)				Total P	urge Time (n	nin)	70m	n			
LOW FLOW: Max Draw Down = (Tubing Depth - Top of Screen Depth) X 0.25 =(it); if screen interval is not known or water table is below top of screen then use default value of 0.3.8.												
Min, purge volume ti	required: pu	rae volume (or	al) = volume i	of water/ft (nali	n) X Water co	lumn thicknes	. //		untum en			
Well Diameter	gal/fl	1*-0.0	141 gal/ft	2*-0.	163 gal/ft		4' - 0.653	gai/it	6'-1.4	69 gal/ft		
				Water Qual	ty Paramet	813	1,090,00					
(Achieve stab	(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])											
Time (24-hr)	Flow Raig	Purge Volume	Temp (°C)	Specific Conductance	DO (mg/L)	ORP (mV)	рH	Turbidity (NTU)	DTW (/t BTOC)	Drawdown (ft)		
	min		(± 3 %)	(± 3%)	(# 19%)	(± 10mV)	(± 0.1)	(± 10%, or <5	W/Jubing	(Maxfl)		
1235	400	Jack	1.90	0.103	149	69.5	264	6 23	20 <1	0		
1228	HOD !	ant	1.59	0.104	124	512	7.01	56.75	20.50	07		
1241	LUN 1		6.4	0101	0.00	14.2	1.73	50.30	2.55	_,0,5		
	HM	- ga	(2(0.105	0.90	171.2	R.01	51.51	40.53			
1575	16-	10941	6.76	0.104	0-84	0.12	8,12	61.21	30.53	<u> </u>		
1348	HOG	-Dgal	0.45	0.104	0.79	2.43	<u>89 Br</u>	162.55	30.53	0		
1351	400 :	99	650	0,104	0.66	-172.1	8,21	77.40	<i>H</i> - H	0		
1355	HOU	1.2gal	6.83	0.104	0.63	-193.2	8,26	79.20	<u>() 11</u>			
1758	400.	1.4gel	6.64	0.103	0.61	-276.2	8.28	6272	N 11	0		
1401	400 ~	Baalt	6.53	0,03	0.58	-2779	807	6228	1 11	. 0		
1404	400	Jaal	6.32	0.104	0.54	-242 3	AZR	6301				
1405 5	male	3.39-0	<u> </u>		0.51	3.2.1	0.20	4).01				
Parameter Stable (0	Check applica	able)			_							
				X	<u> </u>		~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~	X				
Sample Color:	lignt G	rey/cla	201	Sample Odor:	None		Shee	n: <u></u>	<u> </u>			
	America			Analytica	Sampling	-		_	-			
e MON Mathead Classes	Allaly	CPE	-	CRECK	vppiicable			Comm	ents			
WOW Method Stateme	Int Lable 2: Ge	ners Groundy	vater Quality	Suite								
TIGM INVINCI SIGIRIIIE		nei Suppiy Qi										
Notes:	d Par	Ity We	211	TOW-5		Abstra	ction	atis	52014	POSCOLE		
*	0,5161	ts 2/11	line 1	value set !	Istuin.	JOIN	t give	n yump	1 or Casi	۸g.		
Faulament Dumo	Type Hurt	MAR SO	517	81 Tubles (Tre	Tej	1375 V	500	Delles To				
Water Level Meter	5001	+ YPIL	tul 1,0	e Multi-Baranet	er Meter (M	aka/Chim Y	ST C		FIM IDOG			
Turbidity Meter (Mak	(e/SN#)	Micro T	PW 1	todel 200	DO SNT	2014070	BL FI	ter Lot #	H1558			
Purge Water Handl	ing: 🗌 Disc	harged to su	rface DCg	ntainerized 🔲 Tre	ated (how?)	DRUP	11					
BGS = Be	low Ground S	iurface, BTOC	= Below To	p of Casing, NA = N	ot Applicable	an a		Page	: 1 of			
* Qualit	ative	measu	re or	· purge v	olume	•			A11 - 2000 200			



Sits/Client Name: Nikiski, AK						Well I	Well ID: TPW-5						
Project # ; Water Q	uality Monito	oring (WQM),	AK LNG			Sampl	e ID: 1	W-5	-0816				
Sampled By:	12005	00	-			Sampl	e Time:	00	Samp	le Date: 8-12	7-16		
Weather Conditions	: Avel 4	254	~60°F			Duplic	ate ID: -						
Sampling Method:	Low Flov	v A. Other	Bailer			MS/M		5-No	Trip Blank	Required:	Yes 🕰 No		
TIM TOTAL CONTRACT		Metalling with s	·马尔拉拉马丁马克	an carte a	Weli In	formation	BUARAN MORE	121) S 494 ()	instantiation A	STRUE ARMY			
Well Type	nanent 🔲 T	emporary		Well Di	ameter(ain,	Screen Inte	erval:	<u> </u>	IGS to	nt BGS		
Well Condition	Good 🗋 Fa	iir 🗋 Poor (il	fair or poor	explain	in Notes)		Stickup	Yes 🛛 I	io; Il yes, 13	5 abov	e ground		
Death to Mistac /8.5	TOCH	20	1000 C	Gat	iolno/Purr	Ing inform	ation Death						
Total Depth (ft BTC		3.5 - 0	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	hstru	C1602	Purge S	Start Time (2)	(IL BIOC 6-hr)	л: 	n dat	-		
Depth to Product (ft. BTOC)						Purge E	End Time (24	-hr)	-/-	Dailer			
Product Thickness (ft)						Total P	urge Time (n	in)	/		-		
LOW FLOW: Mail scri	x Draw Down ten, then use	I = (Tubing D default value c	epth - Top of d 0,3 fL;	Screen	Depth)	X 0.25	=(ft); if	screen int	erval is not kn	own or water tabl	e is below top of		
Min. purge volume if required: purge volume (gai) * volume of water/T(gal/t) X Water column thickness(it) X # of casing volumesgal Well Diameter - cal/t 1° - 0.041 cal/ft 2° - 0.163 cal/ft 4° - 0.653 cal/ft 6′ - 1.469 cal/ft													
Water Quality Parameters													
(Achieve stable	e parametera	for 3 consecut	ive reading, 4	paramet	ara il practic	al [oach read	ling taken after	pumping a	minimum of 1	flow through cell	([emulov		
Time (24-hr)	Flow Rate (gal/	Purge Volume (gal)	Temp (°C)	Sj Cont (µ	pecific luctance S/cm [°])	DO (mg/L)	ORP (mV)	рH	Turbidity (NTU)	DTW (h BTOC)	Drawdown (h)		
	minuta)		(± 3 %)	(:	E 3%)	(± 10%)	(± 10mV)	(±0.1)	(± 10%, or <5 NTU)		(Maxft)		
010	-	12070	(54	0.	109	29.07	120.0	8.56	64.86	30.51			
			• We	1 p	Logo I	8/11	6 ato	al~	.Soalle	ns			
					0				0		¥		
					Ĩ								
							-		1. T	*			
								-	100				
										-			
Parameter Stable (C	Check applic	able) 🔲											
Sample Color:	00	o.f	—	Samp	le Odor:	NON.		Shee	in: —	<u></u>	1		
					Analytica	I Samplino							
	Analy	565			Check /	Applicable			Comm	ents	1.1		
WOM Method Stateme	nt Table 2: Go	neral Groundy	water Quality S	Suite				Car		itolm O	NIY		
WOM Method Stateme	nt Teble 3: W	ater Supply Q	uality Suite		,					•			
Notors	1.1.	Q I LeC											
HULES,	Vote :	Bailly	Shift	ÓN	fla	1+ / ^r	19chanis	m o	1 10	-12 feet,			
The	re is	room	for	pu	mp 1	bailer	40 9	54711	Samp	le.			
Water Level Meter	Snoft	Kerk tu	ff tupe	\ Mu	iti.Paramel	er. Meter (M	ake/SN#	CE S	≤ 6	FIN 199	4		
Turbidity Meter (Mak	(e/SN#)	Millo	TPW	SA	# 200	200		Fi	iter Lot #	- 19 101			
Purge Water Handi	Ing: 🗌 Disc	charged to su		taineriz	ed 🔲 Tre	aled (how?)	Drum						
BGS = Bo	low Ground	Surface, BTOO	C= Below Top	of Cas	ing, NA = N	lot Applicabl	e		Pag	= 1 of			



Site/Client Name	: Nikiski, Ak	c		<i>1</i> 2	Well	n· ()u/ - 2	A		····	
Pmlect # + Waler	Quality Monit	· Indoa (MOM	AKING		Same			-179114			-
Compled Bur	L Tu	torang (rectai	- Children		Comp		<u> </u>		1. D. H. A	10.11	-
Sampled by	1- JON 15	on C			Samp		000	Sam	pie nate: K	12-16	-
vveather Conditio	ns: 0,0	i ast	~ (00F		Duplic	ate ID;					
Sampling Method	: 🔲 Low Flo	wither_	Parter		MS/M	SD 🗌 Yes	No	Trip Blani	k Required;	Yes 🐼 No	
IAI-B T ADL D-			nsvarbetad	Weil	Information	anaaran 1	1.70.755	2 40	YTTOT CALLS	A TRANSPORTATION OF	2
Well Type (27)-el			6 6-10	vvei Diameter	<u>(0)</u> IN	Screen Ini	ierval: <u>/ -</u>	- <u></u>	BGS 10 195	TON BGS	-
Weil Condition: 6			t lair or pool	rexplain in Note	Scien 4	Stickup (2		lo; if yes,	n abo	ve ground	4
Depth to Water (B	BTOC	20.4	4	6.010100/20	Tubles	/Pump Depti		<u>1</u> .			2
Total Depth (ft B)	TOC) LOU	10(-115	-116 -4/	The Peoto	Purae	Start Time (2	24-hr)	<u>, / · / · / · / · / · / · / · / · / · / </u>			- 1
Depth to Product	(A. BTOC)		1	4340	Purge	End Time (24	4-hr)		Bailer	ised	-
Product Thickness	s (N)			-	Total P	urge Time (r	nin)				1
LOW FLOW: N	lax Draw Dow creen, then use	m = (Tubing D default value	epth – Top o of 0.3 fL;	f Screen Depth)	X 0.25	=(ft); i	if acreen Inti	erval is not kr	lown or water tab	ale is below top of]
Min. purge volume	If required: pu	urge volume (g	al) = volume o	of water/ft(g	al/it) X Water co	dumn thicknes	s(f)) X # of casin	g volumes	= gal	
VIEN UKINE(EF	- Banit	1 - 0.	er gavn	2-	U. IOJ GBVIL		4 - 0.053	gavn	6' - 1,	469 gal/R	1
(Achieve stat	ble parameters	for 3 consecu	live reading, 4	water Qu parameters if prac	anty Paramet dical (each read	ers ling taken afte	r pumping a	minimum of	1 flow through co	(i volume))	
Time	Flow	Purge	Temp	Specific	DO	ORP	Ha	Turbidity	DTW	Drawdown	1
(24-hr)	Rate (gal/ minute)	Volume (gel)	("C) (+3.%)	Conductance (µS/cm ^e)	: (mg/L)	(mV)	(+ 0.1)	(NTU)	(It BTOC)	(n)	
			120.07	(± 3%)	(± 10%)	(± 10mV)	(20.1)	or <s< td=""><td></td><td>(Maxft)</td><td></td></s<>		(Maxft)	
1001		.07401	7.78	0.214	28.07	143,0	8.67	4338	28.49	Ť	1
										1	1
	1	1		f		†	<u>+</u>				-
ia		+	[╀────				
	+		11 12.6			N-11 N		11		1	-
		• *	ii pui	BELY R	19/16 a	10ta 1	<u>pj - 7</u>	gallons			
		ļ						ř			
	12			L		[1			
				Į		1040		1.4		1	
		10									1
									8	1	1
	1										
Parameter Stable	Check applic	cable)									
Pamala Batan	Z1.11 -		1								1
	ZIYAT B	100.1 /1	1801	Sample Odor	54Hur	- II	Shee	n:			
	Anoli	10.04		Analytic	cal Sampling						
Chi Malhad State	Alidi)	nana Carri d	unter de la tra	CREC	v wholes bie	<u>.</u>		Comn			
VOM Method Statem	ent rable 2: G	Interal Ground	water Quelity				<u> </u>	(a	COLHOIM	0114	
	INTER COLOR J. W	aux subbiy (HANNY SUILE		/		•			/	
				-+							
lotest						1					
	Felal	(Ali)	orm	only -	Jaker	1 w/	Baile	<i>4</i> ,			
-	Totol	Dept	- 14	3.40 M	Inst ge	of Wat	er Le	rel n	neter po	ast 12-	Pack
	-			//	0				n li		
quipment: Pump	rype	ALV LI	C 1	Tubing (T	ype/Length)		1 - 10	Baller Typ	CEL dited		
valer Level Meler	7001	PECK TH	t tap	Multi-Param	eter Meter (M	ake/SN#)	51 35	6 YE	DE 0 18.	M	
urokaity Meter (Ma	ike/SN#)		THUD	ITY DN	2000	0	Fil	ter Lot #			
urge Waler Hand	lling: 🗌 Disc	charged to su		ntainerized 🔲 T	reated (how?)	pruml					
BGS = B	lelow Ground !	Surface, BTO	C= Below To	p of Casing, NA =	Not Applicabl	-		Pag	elof		



<u> </u>														
Site/Cilent Nam	e: Nikiski, Af	(2	Well I	Well ID: OW-HA							
Project # : Water	Quality Monit	loring (WQM), AK LNG			Samp	Sample ID: 0W-4-08/6							
Sampled By:	K. Jon	1501				Samp	le Time: (09.10	Samp	ble Date: 8-	216			
Weather Conditk	ons: Dveru	ust a	. 60°F			Duplic	Duplicate ID:							
Sampling Metho	d: 🗌 Low Flo	w C Other	Baile	1		MS/M	SD 🗌 Yes	E-No	Trip Blank	Required:	Yes XNo			
12/2002/2002/2002/2012	1037512412.02	No. Contraction	Win and State	1200	Well In	formation	5 87 (S) - 20	11.12世纪为5月	ACL DI CHART	和新加速的公 式	A STATISTICS STATIST			
Well Type: 12NPe		Temporary		Well D	Diameter	<u>(9</u> in.	Screen Int	lerval:	23,50 11	BGS to43	-50 ft BGS			
Well Condition:		air 🗋 Poor (if fair or pool	r expla	In in Notes)	Sceen H"	Slickup 🖸		No; If yes, 2	7" & abo	ve ground			
Depth to Water (H BTOCI	56 6	12	G	and manual and	ging Iarorm Tubina	ation /Pump Deoli			NE LICEURS.				
Total Depth (it B	TOC): K	PACKER 117	-119 pa	55 4	hia	Purge	Start Time (2	24-hr)		Paler	la			
Depth to Product	(A. BTOC)		143	15		Purge	End Time (24	4-hr)	/	Paret 1				
Product Thickness (ft)						Total P	urge Time (r	nin)	-		-			
LOW FLOW:	Max Drzw Dow screen, then use	m = (Tubing I default value	Depth — Top o of 0 3 ft.;	f Scree	n Depth)	X 0 25	=(ft), i	if screen int	erval is not kn	own or water tal	ble is below top of			
Min. purge volume	elf required p	urge volume (g	al) = volume (of water	/tt(gal/	tt) X Water co	lumn thicknes	is(f	t) X # of casing	volumes	= gal			
AAcii Tusunetei	- gavit	1-0	UHT gawit		2'-0.	TUS gavn		4'-0.653	gavm	6'-1.	469 gaVii			
(Achieve st	ible parameters	for 3 consecu	tive reading, 4	nenergi i	eters il practic	ity Paramet al [each read	ers ling taken afte	r pumping a	minimum of	1 flow through ca	di votume)			
Time	Flow	Purge	Temp		Specific	DO	ORP	pH	Turbidity	DTW	Drawdown			
(24-hr)	Rate	Volume	('C')	Co	nductance	(mg/L)	(mV)		(NTU)	(ft BTOC)	(11)			
	(gau minute)	(See)	(± 3 %)	<u>ا</u>	haveuu.)			(± 0.1)	(± 10%,					
		1			(± 3%)	(± 10%)	(± 10mV)		or <5		(Maxft)			
0915		-	620	0.	111	871	156.2	702	36.89	56.52	56.52			
			1				1							
									1					
		Well	has all	11	RIDI	16 0	Intel	OLE	Lilloos		1			
	+	pacing	has have	Fa.	0/10/	iv a	10-141	013	Panoro		+			
	+	1		-			-	1						
	+	+							- · ·					
	+			-					· · ·		-			
				-										
		-		-			19							
	_													
Parameter Stable	(Check applic	cable)												
Sample Color:	light on	PV		Sam	ple Odor:	Sid fur		Shee	n:	-				
	3 0	7			Analytica	Sampling								
	Analy	/595		-	Check /	Applicable	T		Comm	ents				
WQM Method States	ment Table 2: G	eneral Ground	water Quality	Suite			1							
WQM Method States	ment Table 3. W	later Supply C	Juality Suite											
							1							
				}										
Notes:	- Ft	ral c	oliform	0	alv					PG -				
		Tabl	Dont	n i	LI C	Must	-ort in	ater	level r	neter i	oust K-park			
	_	10701	UCPT		י ביכרי	a	ŗ ^ŗ 'nž	~114.		- 1				
Equipment: Pum					Tubino (Terr	•/l anath)			Dalles To	- 2 ⁴				
Water Level Meter	500-It	Kerle	74H 140	P. M	ulti-Paramet	er Meter /14	ake/SN#	YST L	_ saller Typ	210100				
Turbidity Meter (M	ake/SN#)	MICTO	TPW 3	N H	20000			Fi	iter Lot #					
Durne Met-elle-	dilace 🖂 tu		dan Al-			-11-1								
Furge water Han		charged (0 SI		ntainen	izea 🛄 Tre	ated (how?)								
BGS =	Below Ground	Surface, BTO	C= Below To	p of Ca	sing, NA = N	lot Applicable			Pag	el of				

Water Parameter Meter Calibration Log

Date: Meter Man	- B- \6 ufacturer and	_ Identification #:	Time: 07	40 . 0- 10E	Calibration By:	ibration By: K. Johnson					
Parameter	Standard	True Value	Lot#	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria			
	7.00	7.01	TVI	8 8 16	05 2017	7.44	7.61	± 0.10			
pН	4.00	4.00	TTI	8/8/16	07/2017	3.93	4.00	± 0.10			
1997	10.00	10.18	T52	8/8/16	08/2017	9.85	10.12	± 0.10			
Sp Cond (mS/cm)	1.413	1.413	TP 1	8/8/16	11/17	1.261	1,413	± 10%			
ORP (mV)	240	240	8032	8/8/16	09/19	248-6	49012	240.2			
DO*	Baro at	752.3					99 0%	± 2%			

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude, reference the DO Calibration Table

Date: <u>8</u> Meter Mar	-10-\6 nufacturer and	 Identification #:	Time: 1020	5 6 [ØE	Calibration By:	K. John	501	
Parameter	Standard	True Value	Lot#	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
	7.00	7.01	TVI	8-8-16	05/17	6.68	7.01	± 0.10
pН	4.00	4.00	TT I	1	othon	3.87	4.00	± 0.10
	10.00	10.18	TS2		08/2017	9.94	10.15	± 0.10
Sp Cond (mS/cm)	1,413	1.413	TPI		11/17	1.481	1.413	± 10%
ORP (mV)	240	240.0	8032		69/19	243.6	240,0	
DO*	Baro at	758.3 M	Hg			119.7	99.9	± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Date: 8-11-16	Time: 1308	Calibration By:	K.Johnson
Meter Manufacturer and Identification #:	Y62 580	10E1101894	

Parameter	Standard	True Value	Lot#	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
	7.00	7.01	TVI	8-8-16	05/17	6.97	7.01	± 0.10
pН	4.00	4.01	T		F1/F0	3.96	4.01	±0,10
1985	10.00	10.06	T52		08/17	10.16	10.06	± 0.10
Sp Cond (mS/cm)	1.413	1.413	TP1		11/17	++++312	1.413	± 10%
ORP (mV)	240	240.0	332		09/19	238.7	240.0	
DO*	BAG	757.1				97.9%	99.6%	± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

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* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Water Parameter Meter Calibration Log



Date: <u>8-</u> Meter Manu	-12-16 Jacturer and	_ Identification #:	Time: 08	00 556 j	Calibration By:	K. Johns	04	
Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
A CARGE	7.00	7.01	TVI	8-8-16	05/17	7.06	7.01	± 0.10
pH	4.00	4.01	TTI	1	07/2017	4.00 3.49	4.00	± 0.10
	10.00	10.46	TS2		08 2017	1000 10	06 10.14	± 0.10
Sp Cond (mS/cm)	1,413	1.413	TPI		11/17	1.403	1.413	± 10%
ORP (mV)	240	240.0	8032		04/19	2.90.4	240.0	
DO*	8410.	756.7			96.3%	to 7 mg/	99.5%	± 2%

If parameter not included in sampling event, fill in box with NA (not applicable) * Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Date:	Time:	Calibration By:
Meter Manufacturer and Identification #:		

Parameter	Standard	True Value	Lot#	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Catibration Acceptance Criteria
	7.00						-	± 0.10
pН	4.00	142					-	± 0.10
	10.00							± 0,10
Sp Cond (mS/cm)	1.413						1	± 10%
ORP (mV)	240		·					
DO*								± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Date:	Time:	Calibration By:
Meter Manufacturer and Identification #:		

Parameter	Standard	True Value	Lot#	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
S STARLES	7.00							± 0,10
рН	4.00							± 0.10
	10.00							± 0.10
Sp Cond (mS/cm)	1.413							± 10%
ORP (mV)	240					·		
DO*								± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude, reference the DO Calibration Table



r

								-Q-W	KI		
Site/Client Nam	e: AKLNG	- Nikiski, I	Alaska		Well	Well ID: Paul - agets - Paul - t					
-roject #: 04.10	16001 Tasl	0001 (Fiel	d)		Samp	Sample ID: Paw 1-0916 10-W1-0916					
Sampled by: 👔	Johns	07.	4		Samp	Sample Time: 1510 Sample Date: 9/12/12					
Weather Conditi	ons: Ove	(aust	rains	NSOOF	Duplic	ate ID: 🔥 🖊	ND ON			_	
Sampling Metho	d: 🛃 Low	Flow 🔲 O	ther		Trip B	lank Requi	red: Y	es 🗌 No			
				Well In	ormation						
Well Type: 🖾 Pe	ermanent [ary Wo	ell Diameter <u>6</u>	<u>0</u> in.	in. Screen Interval: It BGS to N D It BGS					
Well Condition: [] Fair 🗌 Pi	oor (if falr	or poor explain In	Notes)	Stickup (ground	KYes [No; If yes	s, <u>3.0</u> ft	above	
		(F	2 514	Gauging/Purg	ing Inform	ation					
Depth to Water (ft BTOC):	25.	60 20	.60	Tubing	/Pump De	pth (ft. BT	TOC): 57	of+ Broc		
Total Depth (ft B	TOC):	66.9	0		Purge	Start Time	(24-hr)	/445			
Depth to Product	t (ft. BTOC		Δ		Purge	End Time	(24-hr)	1530			
Product Thicknes	ss (ft)	N	4		Total F	Purge Time	(min)	45	min		
LOW FLOW: Max Dr	aw Down = 0.	33 h.			2.02				s3		
Min. purge volume i	f required: pr	urge volume (g	al) = volume	of water/it(gal/	t) X Water ci	olumn thicknes	ss(f	t) X # of casin	ig volumes	_=gai	
wen Diameter -	gavit	1-0.0	HI gavn	2°-0.1	63 gal/tt		4' - 0.653	gal/it	6' - 1.4	69 gal/lt	
Pump Type		hl. m	1.4	r unp a	etunys:						
Controller		14.6	<u>ne 5</u>	<u>)</u>						<u> </u>	
Controller:		_ low 1	<u>lin (a</u>	Michel							
Water Quality Parameters (Achieve stable parameter for 3 consecutive reading [each mading taken after pumping a minimum of 1 flow through cell volume])											
) Time (24-hr)	Flow Rate	Purge Volume	Temp (°C)	Specific Conductance	DO (mg/L)	ORP (mV)	pH	Turbidity (NTU)	DTW (tt BTOC)	Drawdown (It)	
	min	(Ben)	(4.2.8)	(µS/cm*)	(+ 104)	(+ +011)			w/twing		
Q2 1448	400	-Saal	1.20	(23%)	1 Q1		(± 0.1)	[= 10%]	2410	(maxi)	
1451	NDO	(Fool	6 67	0225	1.67	47 6	6.67	51.46	LT-62	0	
HA	N 11	1 dal	1.07	0.224	1.20	Hn.O	610	53.00		~~~~~	
1457	AC 10	140	696	6 724	1.37	25 7	6.60	5124	11	0.	
1500	A. 11	15 al	7.06	0.224	112	20.0	6.77	LIGES	N II	0	
1503	15 4	1 72.1	7.00	1225	1-1-9	110		40.00	11 (1	0	
1506	11 11	7.75941	7,01	0.225	1,04	11.0	6.01	10.50		0	
1.500		22.1	7-08	0.227	1.00	2.0	0.81	10.00	4	.0.	
ICIA C	-10	2. 2961	7.00	0.115	0.10	-7.0	6.85	77.71		0	
1210 20	noie				End	purge	<u>E1530</u>		29.65	.05	
	1. A. I.		V			1					
sample Color: 5	In d	وارى		Sample Odor:	>ne perc	1/suret	Shee	n: 1/0	re		
# of Containers	B: (See (n/	T		agundung 						
Lab:	1	AMP!	ica I	SLS ANIC							
Notes: >	Ven Ju	(hiver "	nut in	for mater	unp 64	-	Juba	y la	1 , nue	ч	
approx. 53 feet in well											
	E FI	y upo	26		- her	- Col			•		
juipment: Pump	Type Hu	LICUMP	77	Tubing (Typ	e/Length) _			Baller Typ			
water Level Meter_	700 -	+ / III	Tor.	Multi-Paramete	r Meter (M	ake/SN#)	111 55	6 IPEI	01899		
i urbiaity Meter (Ma	xe/SN#)	futre	1140				Fil	ter Lot #	H1928	· · · · · · · · · · · · · · · · · · ·	
DW Disposal: Discharged to surface Treated (how?) ON Other: Purge to Bucket											



Site/Client Name: AKLNG- Nikiski, Alaska						Well ID: TPW-5					
. roject #: 04.10160	01 Task	(0001 (Fie	ld)		Samp	Sample ID: -TPW-5-0916					
Sampled by: ¥.	tonnet	San	2		Samp	Sample Time: 1644 Sample Date: 9-12-16					
Weather Conditions	: De	rush n	-50°F	wind zomen	Dupli	Duplicate ID:					
Sampling Method:	Low	Flow 🗌 C	Other		Trip E	Blank Requ	ired: XY	'es 🛛 'No	-		
				Well Ir	formation						
Well Type: 🛃 Perm	anent [Tempor	ary W	eli Diameter) in.	Screen 1	nterval:_^	10_ftB	GS to ND	_ft BGS	
Well Condition: 🔯 G	Good [] Fair 🗌 P	oor (if fair	or poor explain ir	Notes)	Stickup	Yes [] No; If yes	1. 1.15 f	above	
				Gauging/Pur	ging Inform	nation					
Depth to Water (ft B	TOC):	30.1	13		Tubin	g/Pump De	pih (ft. 81	FOC):		1977	
Total Depth (It BTOC	C):				Purga	Start Time	(24-hr)	1520	>		
Depth to Product (ft.	BTOC) 🥌	-		Purge	End Time	(24-hr)	1658	3		
Product Thickness (i	it)		-		Total	Purge Time	e (min)				
LOW FLOW: Max Draw D	own = 0.	33 ft.					-2		S	9	
Min. purge volume if req	uired: pu	irge volume (g	gal) = volume	of water/lt(gal	/h) X Water c	olumn thickne	\$\$(lt) X # of casin	g volumes	_ =gal	
Hen Diameter - gav		1 - 0,	U41 gau/n	<u>2" - 0.</u>	163 gal/it		4' - 0.653	gal/it	6'-1.4	69 gal/It	
Pumo Type:		Harris		C.Z.	aerrufia:						
Controller		ICanto	<u>ane</u>				_				
		IPW	765	londo ver.							
(Achi	eve slabi	e parameter k	or 3 consecu	Water Quali live reading (each read	ity Paramet Sing laken all	ers er pumping a i	ninimum ol	1 flow through	cell volume))		
(24-hr)	Flow Rate	Purge Volume (gal)	(*C)	Specific Conductance (µS/cm ⁻)	DO (mg/L)	ORP (mV)	рH	Turbidity (NTU)	DTW (H BTOC) W-twing	Drawdown (it)	
1500 30	0	2.0	(±3%)	(± 3%)	(± 10%)	(± 10mV)	(±0.1)	(± 10%)	122	(Maxft)	
1627 10	<u> </u>	- Zgal	7.1	0-110	616	21.0	8.06	39.24	30.50	.07	
1600 40	0	3941	6.83	0.117	247	-00.6	8.63	40.13	30.50	- 0	
1033 40	0	1 ingal	1.00	0.117	1.62	-40.7	8.64	39.02	30.50	0	
1036 40	0	1 yai	6.00	0.117	1.19	-101.0	0.45	38.64	30,50	0	
1239 4	0	1.25gal	7 42	0.115	1,54	-118.9	8.00	38.16	50.50	0	
	0	(Sugal	7.73	0.119	1.13	-127.4	0.63	38.10	<u> </u>	0	
1245 40	2	7.7.4	7.02	0.10	1.10	-121 2	0.00	58.53		0	
1649 44	2	Lyai	4.70	0.00	1410	- 13-1.3	0.00	35.09		0	
JUT ANY	5				~						
Sample Color:	clarc			Remain Order	Te	t t					
Campia Color.	Clear			Sample Udor:	none	_	Shee	in: ()(ne		
# of Containers:	T			Алагушса	I Sampling		-		1		
Lab:	TPU	- America	1	SIS ANC	_						
Notes: Woltag	8	10.2 1	INS (<i>yon</i> 1000.			a.\				
- No 4	ubing	in u	ell (s	taged in W	narena	ISE IN	9)				
juipment: Pump Type	-Hu	ulican e	55.	Tubing (Tyr	e/Length)			Bailer Tvn			
Water Level Meter	500.	1 11	rentul	Multi-Paramet	er Meter (Mi	ake/SN#)	ST 550	1 DE C	01894		
Turbidity Meter (Make/Si	N#)	Millo	TPW				Fil	ter Lot #			
							A.	100	Durl		



	Site/Client Name: AKI NG, Mikiski, Alaska				1						
Site/Client Nam	ne: AKLNG	- NIKISKI, /	laska		Well	Well ID: TPW-1					
-Project #: 04.10	16001 Task	0001 (Fiel	d)		Samp	Sample ID: TPW-1-0916					
Sampled by:	L. Johns	01		~60°F	Samp	Sample Time: 1157 Sample Date: 4/12/16					
Weather Conditi	ions: C	verast	<u> </u>	ler snamer	Dupli	cate ID:	TPW	-9-0910			
Sampling Metho	d: 🛛 Low		iher		Trip E	Blank Requir	ed: 🗗 Y	es 🗋 No			
Thir	dparty		65 T.	Well In	formation						
Well Type: 📈 P	ermanent [iry W	ell Diameter <u>6.</u>	<u>0</u> in.	Screen In	iterval:	ND_ft B	GS to NO	_ft BGS	
Well Condition:	Good	Fair 🗌 Po	oor (il fair	or poor explain in	Notes)	Stickup ground	(Yes 🗆	No; If yes	3.25 1	above	
				Gauging/Purg	ing Inform	nation					
Depth to Water (ft BTOC): 910-25 44.65 Tubing/Pump Depth (ft. BTOC): 50 (+											
Total Depth (ft B	TOC):	138	.30		Purge	Start Time	(24-hr)	11	35		
Depth to Produc	t (ft. BTOC) N	1/A	-	Purge	End Time (24-hr)	137	15		
Product Thickne	ss (ft)		NA		Total	Purge Time	(min)	Tho	or somia		
LOW FLOW: Max Dr	raw Down = 0.	33 ft.	'	<i>3</i> .			68		12 30 IC		
Min. purge volume i Walt Diametro	if required: p	age volume (g	al) = volume	a of water/it(gal/	h) X Water c	olumn thicknes	s(t	t) X # of casin	g volumes	_=gal	
AAGII DIWILIGIGI -	- yava	1 - 0.0	A I gavn	2 - U.	163 gal/π Settinger		4' - 0.653	gavn	6'-1.4	69 gal/ft	
		Alexander	-0 ((e ann a sa s	Serunda:	T				-	
Contention		HUN- W	<u>re 33</u>	<u> </u>							
Controller:		low fu	<u>w</u>								
Water Quality Parameters (Achieve stable parameter for 3 consecutive reading [each reading taken after pumping a minimum of 1 flow through cell volume]}											
Time (24-hr)	Flow Rate	Purge Volume (gal)	Temp (°C)	Specific Conductance (uS/cm ²)	DO (mg/L)	ORP (mV)	рH	(NTU)	DTW (ft BTOC)	Drawdown (ft)	
	min		(± 3 %)	(± 3%)	(± 10%)	(± 10mV)	(± 0.1)	(± 10%)	w/tubing	(Maxft)	
1137	400	.25	7.28	0.121	7.11	211.0	8.51	46.41	44.67	.02.	
1140	400,	i75gal	6.61	0.118	- 8:53 2	28 2152	8.52	48.01	44.67	0	
1143	400	Igaí	6.53	0.118	1,91	205.9	8.44	47.84	44.67	0	
1146	400	1:2592	6.37	0.117	1.72	208.4	8.37	46.43	44.67	0	
1149	402	1.5441	6.18	0.118	1,50	215.6	8,29	44.53	·· /1	0	
1152	400	2.0gal	6.34	0.117	1.32	216.0	8.20	44.68	15 41	0	
1)55	400,	2.3941	6.64	0.118	1.23	213.7	8.27	43,31	£6 4	0	
1157 50	ande			-							
				×		× ~	a V	×			
Sample Color:	Clark	,		Sample Odor:	None	1	Shee	:n: /	None		
A of Container				Analytical	Sampling			(
	3:					QCSan	Dirg	MS/MS	D		
	76	it America	n	SES ANC.		and D	uprea	le tai	(4A		
Notes: - V	ollaye	B.3	ω	Inline Val	ne se	+ 1/3	yurn				
	- M3	IM5D	collec	ied for spec	ific A	tralytes	, Som	e as ev	19m Volur	ne	
		121		, ₁ .	•	*					
juipment: Pump	тура_Ни	stilane G	5	Tubing (Typ	e/Length)			Baller Tvo			
Water Level Meter	500	t Rent	AI 17	Multi-Paramete	ar Meter (M	lake/SN#)	15I S	SG IDE	101299		
Turbidity Meter (Ma	ake/SN#)	Mil	O TPI	N		<u></u>	Fil	ter Lot #	11558		
IDW Disposal: 🔲	DW Disposal: Discharged to surface Treated (how?) DO (her: Ury to Bucket										



Site/Client Name: AKLNG- Nikiski, Alaska					Well	Well ID: TPW-2						
- ¹ roject #: 04.10	16001 Task	0001 (Field	d)		Samp	Sample ID: TPW-2-0916						
Sampled by:	K.Johns	001		0	Samp	Sample Time: 005 Sample Date: 9/12/16						
Weather Condit	ions: Rai	۸			Duplic	Duplicate ID:						
Sampling Metho	dd Low	Flow	her see	notes	Trip B	Trip Blank Required Z Yes 🗌 No						
	NOT		_	Well In	formation	and a second s	ne example					
Well Type 🖾 P	ermanent (] Tempora	ry We	ell Diameter <u>v / </u>	<u>^</u> in.	Screen	nterval:	V/A_ft BG	S to MA	_ft BGS		
Well Condition.	Good [) Fair 🗌 Po	oor (if fair o	or poor explain in	Notes)	Stickup ground	Yes [No; If yes, [N	Af	l above		
	-			Gauging/Purg	ging Inform	ation			1			
Depth to Water	(ft BTOC):	NIA			Tubin	g/Pump Di	pth (It. B)	FOC): N	/A			
Total Depth (ft E	BTOC):	NI	4		Purge	Start Time	e (24-hr)	0941	12			
Depth to Produc	t (ft. BTOC	;) .	NA		Purge	End Time	(24-hr)	1040				
LOW FLOW: Nay D	SS (II)	33.0	NA	See.	Total	Purge Tim	∋ (min)	59mil	total			
Min. nurge volume	if required: or	ume volume (o:	ali – volume	of water/it /gal	/h) ¥ Mater c	aluma talaka		W # of occion				
Well Diameter	- gal/ft	1" - 0.0	41 gal/ft	2"-0.	163 gal/ft		4' - 0.653	igal/it	6' - 1.4	ga/ 469 gal/ft		
				Pump	Settings:							
Pump Type:		/				/ /						
Controller:		/			/			/				
	(Achieve stabl	e parameter fo	r 3 consecuti	Water Quali ve reading (each read	ty Paramet ling taken aft	ers ar pumping a	ninimum of	1 flow through a	;ell volume])			
(24-hr)	Flow Rate	Purge Volume (gai)	Temp (°C)	Specific Conductance (µS/cm ^e)	ĐÔ (mg/L)	ORP (mV)	рН	Turbidity (NTU)	DTW (ft BTOC)	Drawdown (h)		
			(±3%)	(± 3%)	(± 10%)	(± 10mV)	(± 0.1)	(± 10%)		(Maxh)		
0991	1.251	Igal	985	0.193	9,49	196.7	8.40	0.71				
01>>	1.25	logal	8.77	0.199	4.83	198.3	8.33	2.55				
1001	1.25	19941	8.28	0.199	3.72	200.0	8.25	1.97				
1009-5	ample	twe					-					
	+	+ +										
				1			+		·			
	1					+						
						+	+					
Sample Color:	elect	1		Sample Odor:	- ACAAP	0	Shee					
	Creat			Analytica	1 Samolino		Uner	No	ne.			
# of Container	rs:	See LOC		,,			1		1			
Lab:	7	PH Ampsic	a	565 ANC .			<u> </u>		-			
Notes: -> To - Fill	trom 1	t min nose o	utiode	Liaehouse		- Dec	rel pro	perity	Filter,	11558		
<u> </u>	- n.					gaidi	inhose		. <u> </u>			
Water Level Mater	piype 100	It TTA	ental	Tubing (Ty	pe/Length) .	aka/Chia	15 501.	_ Baller Type	1899			
Turbidity Meter (Ma		Milot	PW		er meter (M	ake/SN#)]	Fi	iter Lot #	41558			
IDW Disposal:	Discharged i	o surface 🔲	Treated (h	ow?)			Other:			_		

SI	_R*	3	G	^{16.} Broundwate	Dec-16 r Samp	ling For	m				
Site/Client Name	: Alaska LNG	/Fugro Nik	iski		Well II	Well ID: APT-1					
Project # : 105.00	0148.16001				Sampl	eID: AF	7-1-	0916	Δ		
Sampled By: B	en Siwie	1/4	th oli	er	Sampl	e Time 🎷	132	Sampi	e Date: 9	20/10	
Weather Conditio	ns: Clo	vous (alm		Duplic	ate ID:	APT-9	1-0916	<i>"</i>	0	
Sampling Method	: K Low Flow	Other			MS/MS	SDXyes	No No	Trip Blank	Required:	Yes 🗌 No	
				Well In	formation	1-1-					
VVell Type: 🙇 Per	rmanent 🔲 Te	emporary		Well Diameter 📕	in,	Screen Inte	erval: <u>10</u>	t B	GS to 190	ft BGS	
Well Condition: 🔀	Good 🗌 Fa	ir 🗌 Poor (i	if fair or poor	explain in Notes)		Stickup 🔀	Yes 🗌 N	o; If yes	2.9_ft abov	e ground	
Danih to Minton (#	DTOCH ID	027	· · · · · ·	Gauging/Pur	ging Inform	ation	A PTOC	120			
Total Depth (ft B	TOC: Not	- mellson	ed		Purge S	Start Time (2	4-hr)	0451			
Depth to Product	(ft. BTOC)	AUA			Purge B	End Time (24	4-hr)	1030			
Product Thicknes	s (ft)	NA			Total P	urge Time (n	nin) 🗦	3			
LOW FLOW: N s	lax Draw Down creen, then use	= (Tubing [default value	Depth — Tap of of 0.3 ft.;	Screen Depth)	X 0.25	=(ft); i	f screen inte	erval is not kno	own or water tabl	e is below top of	
Min. purge volume	if required: pu	rge volume (g 1" - 0	gal) = volume c 041 cal/ft	f water/ft(gal	/ft) X Water co 163 gal/ft	olumn thicknes	s(ft 4' = 0.653) X # of casing gal/ft	volumes	<u> = gal</u> 169 gal/ft	
ven Diameter	- gaint	1 = 0.	04 r gavit	Water Qual	ity Paramet	ers	4 - 0.000	gain			
(Achieve sta	able parameters	for 3 consecu	itive reading, 4	parameters if practic	cal [each read	ting taken afte	r pumping a	minimum of 1	flow through cel	l volume])	
Time (24-hr)	Flow Rate (liter/	Purge Volume	Temp (°C)	Specific Conductance	DO (mg/L)	ORP (mV)	pН	Turbidity (NTU)	DTW (ft BTOC)	Drawdown (ft)	
	minute)	Her	(± 3 %)	(± 3%)	(± 10%)	(± 10mV)	(± 0, 1)	(± 10%, or <5 NTU)		(Maxft)	
1001	225	0,5	6.69	305	5.14	204.3	7.12	25.8	48.35	0.03	
1004	,400		6.24	259	3.74	204.9	7.29	22.6	48.36	0.04	
1007	400	2	6.11	237	2.84	216.7	7.45	17.9	48340	0-08	
1010	400	3	5,94	233	2.14	206.7	7.64	14.3	48.40	0.08	
1014	400	4.5	6.25	226	1.67	189.5	7.89	16.8	48.40	0.08	
1018	.400	6	633	226	1.58	179.2	8.09	14.2	48.40	0.08	
10.22	. 400	7.5	6.24	225	1.53	175.5	8.14	14.0	48.40	0.08	
10.26	400	9	624	224	1.40	1767	8.13	13.9	48.40	0.08	
10 20	.400	12	625	223	1.35	171.8	8.16	13.4	4840	0.08	
		- <u>~</u>		001		1 no	0.10	1			
Parameter Stable	(Check applic	able)								1	
Sample Color:	Clev	ar		Sample Odor:	NO	-1	She	en: No	h		
A Long A	Analy	/ses		Analytic Check	al Sampling Applicable	3		Comn	nents	5×	
Basic suite of analy	tes										
Comprehensive wat	ter supply suite c	of analytes		X							
VOCs only + Arseni	ic				4						
Other analytes, List:											
Notes:		5 - 11 - 24								2	
Equipment: P		lurrican	e 55	Multi Deserve	_ Tubing (YCI E	51 10	Bailer used:	🗌 Yes 📈 No	
vvater Level Me		(\	Frank S.		er weter (20/1/	13 G	48			
iviuiti-Paramete	Andrew Child	a MA	nea: 🔁 Y	UL TO Date	Ime_IZ	0010		Г!н.		IEC.	
Turbidity Meter	(Make/SN#)	64 110		1760	9/72/	6 0	50			-20	
Purge Water	Calibration v landling:	verified:	Z res ∐N ed to surface	e XContainerize	ed 🗌 Trea	ated (how?)		Tot	al gallons gei	nerated: 8	
BGS =	BGS = Below Ground Surface BTOC = Below Top of Casing NA = Not Applicable Page 1 of										



	वा -	è.
CI	DW	-,
JL	K	2
-		

Site/Client Name: Alaska LNG/Fugro Nikiski						Well ID: APT-2					
Project # : 105.001	148.16001				Sampl	Sample ID: APT- 2- 0916					
Sampled By: Be	A Simil	Setto	DINAN	Jacob Cours	Sample	e Time: 14	100	Samo	le Date 91	21 10	
Weather Conditions	s (last	dia dia	(Civer,	UTZON Gray	Duplic	ate ID	100	Gump	ie Date. 1/0	(1/16	
Sampling Mathod S		Cithor			MC/M		111		De auties de N		
Gampling Method.	COW FIOW			Mial Int	1015/1013		XIND	пр валк	Required X	Yes No	
Well Type: K Perm	nanent 🔲 Te	emporary	V	Vell Diameter		Screen Inte	ervat 10	00 ft P	3GS to 141	1 # BGS	
Well Condition	Good □ Fai		fair or poor e	explain in Notes)		Stickup Wyes T No. If yes 2 & ft above groups					
		28 11	51/16	Gauging/Purg	ing Inform	o Information					
Depth to Water (ft E	BTOC):	F.g.	56	. C.9	Tubina/	Pump Depth	(ft. BTOC	20			
Total Depth (ft BTC	DC): K	lot inter	surel		Purge S	Start Time (24	4-hr)	alla			
Depth to Product (fi	t. BTOC)				Purge E	End Time (24	-hr) 13	50			
Product Thickness	(ft) .				Total Pu	urge Time (m	in) ¹ 4	9	2		
LOW FLOW: Ma	een, then use o	= (Tubing D default value	Depth – Top of S of 0.3 ft.;	Screen Depth <u>)</u>	X 0.25 =	=(ft): if	screen inte	rval is not kni	own or water tabl	e is below top of	
Min. purge volume if	required: pur	ge volume (g	al) = volume of	water/ft(gal/t	t) X Water co	lumn trickness	(ft)	X # of casing	volumes	.≃gal	
Well Diameter -	gal/ft	1"-0.(041 gal/ft	2" - 0.1	63 gal/ft		¹ - 0.653 (gal/ft	6 - 1 4	169 gal/ft	
(Achieve stabl	a parameters f		tivo rondino. 4 m	Water Qualit	y Paramete	ers					
Time	cianeters r	or 3 consecu	uve reading, 4 p	arameters ir practica	al leach read	ing taken atter	pumping a	minimum of *	1 flow through cel	l valume])	
(24-hr)	Fiow Rate	Volume	(°C)	Specific	(ma/L)		рН	Turbidity	DTW (# BTOC)	Drawdown	
(= · · · · · /	(liter/	(gal or	(5/	(µS/cm [°])	(119/2)	(0.7)		(110)	(11 11 100)	(11)	
	minute)	liter	(≐ 3 %)	(((± 0,1)	(± 10%			
		~	· · · · · · · · · · · · · · · · · · ·	(± 3%)	(± 10%)	(± 10m∨)		NTU)		(Maxft)	
1316	0.3	6	6-00	163	256	147.5	7.91	201	56-71	0.07	
1321	0-4	7	632	102	2.27	139.7	795	174	5671	12 02	
1370	85	G	5 60	163	204	1451	7 55	11.9	5671	4 42	
1221	MS	01	5 09	103	100	ITA U	127	19 7	5-71	0.00	
221	A 32	11	512	(6)	1.60	130.7	1.51	iii j	De II	0.01	
120	0.55	12	5.17	160	1-12	1417	1.99	15-1	26-11	0.02	
134	0.33	15	5.96	162	(.31)	131.5	7.97	121	56.71	0.02	
1344	0.35	16	5-28	63	1.25	129.4	8.01	19.7	56.71	0.02	
1347	6.35	17	5 533	103	1.20	131.8	799	130	56.72	0.03	
1350	035	18	540	162	115	133 5	8 14	13.0	56-77	0.03	
		1-4-			1.7	1 S S P	0.01			0.05	
Parameter Stable (0	Check applica	able)	V	V	V	V	- V				
Comple Color	01 (4		11		- y J				
Sample Color:	(leav			Sample Odor:	NO		Shee	n: IVO			
the second second	A			Analytica	Sampling				-		
	Analys	ses		Cneck A	Applicable			Comm	nents		
Basic suite of analytes											
Comprenensive water	supply suite of	analytes			×						
Ous only + Arsenic										10-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-	
Other analytes. List.			-	and an and an							
Notes:	0	c 11 -			í.						
Equipment: Pur	np Type	> HUT	ricarie		Tubing (T	ype)	ion -lin	29	Bailer used:	🗌 Yes 🏄 o	
Water Level Mete	300	н		Multi-Parameter	Meter (M	ake/SN#)	5 59	6 10	DEloisty		
Multi-Parameter N	Neter Calibr	ation verifi	ied: Ves	No Date/T	ime 112	116	08:05	>			
Turbidity Meter (M	/ake/SN#)	La Me	stile 20	20e 147	28			Filte	r Lot # L14	56	
Turbidity Meter Ca	alibration ve	erified: 🔨	Yes No	Date/Time	9/2	16	08-	20	-	Contraction of the second s	
Purge Water Har	ndling: 🗌 🛙	Discharged	to surface)	Containerized	I 🗌 Treat	ed (how?)_		Tota	al gallons gen	erated	
BGS = Be	BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable Page 1 of										



Site/Client Name:	Nikieki AK				Well ID: ADT - 7							
Project # : Water Q	uality Monito	ring (WQM)	AKING		Sampl	Sample ID: $ADT - 2 - A\hat{q}III$						
Sampled By: 0	- Gund	<u> </u>	and al		Sampl	Sample Time: $1/24/2$ Sample Date: $9/23/4$						
Waathar Condition	n Store	Ri	Tho	iver	Dualia	Sample Time. 1040 Sample Date: 172 910						
veatrier Conditions	s. raiti	y C10	Jucy		Duplic	Duplicate ID:						
Sampling Method:	Low Flow	U Other_			MS/MS	MS/MSD 🗌 Yes 🖾 No 🛛 Trip Blank Required: 🗋 Yes 🖄 No						
	enent 🗔 T		101102000000000	Well In	formation	mation						
Well Condition:			f fair ar page	vell Diameter	<u> </u>	Screen Inte				<u>π BGS</u>		
	Good Ц га		Tail of poor	Gaucing/Burg	ing inform	ation		o; ir yes,		e grouna		
Depth to Water (ft E	BTOC):	647		Gauging/Furg	Tubing	Pump Depth	(ft. BTOC	: 120				
Total Depth (ft BTC	DC): Na	of Marsor	16		Purge S	Start Time (2	4-hr) (117				
Depth to Product (f	t. BTOC)	NA			Purge E	End Time (24	-hr) / (38				
Product Thickness	(ft)	NA			Total P	urge Time (n	nin) 🗧 🗟	21				
LOW FLOW: Max Draw Down = (Tubing Depth - Top of Screen Depth) X 0.25 =(ft); if screen interval is not known or water table is below top of screen, then use default value of 0.3 ft.;									e is below top of			
Min. purge volume if required: purge volume (gal) = volume of water/ft(gal/ft) X Water column thickness(ft) X # of casing volumes =gal										_=gal		
Well Diameter - gal/ft 1" - 0.041 gal/ft 2" - 0.163 gal/ft 4' - 0.653 gal/ft 6' - 1.469 gal/ft												
Water Quality Parameters												
Time	Flow	Durge	Tomp	Spooifio			pumping a	Turbidity				
(24-hr)	Rate	Volume	(°C)	Conductance	(mg/L)	(mV)		(NTU)	(ft BTOC)	(ft)		
	(gel/	(gal)	(+ 3 %)	(μS/cm°)			(+0.1)	(+ 10%				
	mimin	liter	(± 3 %)	(± 3%)	(± 10%)	(± 10m∨)	(±0,1)	(± 10%, or <5		(Maxft)		
1023	0.400	9	5.12	158	2.57	127	8.05	25.8	56.49	0.02		
1026 1	1-4(x)	3.5	5.17	157	205	1363	8.20	13.1	56.49	0.07		
1029	hum	50	ENE	184	1 61	1172	8.28	123	57.44	0.02		
1022	12 LINA	7.0	5.7)	128	1.01	unt o	9.60	12.0	SU UG	0.02		
1052	0100	4.2	2.12	138	1.00	104-0	000	IT IT	26-1	0.00		
10.22	0.400	4.0	5192	178	1:22	106.7	1.01	11.4	16.47	0.02		
000	Unqu	10.2	2029	158	1.46	105.6	8-67	Picl	56.49	0:02		
			/	- /	1	1						
Parameter Stable (Check applic	able)	\checkmark				\sim					
Sample Color:	Clear			Sample Odor:	No		Shee	n: 🔨	10			
	_			Analytica	I Sampling							
	Analy	ses		Check	Applicable		· · · ·	Comn	nents			
WQM Method Stateme	ent Table 2: Ge	eneral Ground	water Quality S	Suite			_					
WQM Method Stateme	ent Table 3: Wa	ater Supply C	Juality Suite									
tecal Lo	liform	onli	3									
Notes: Thick i	C 13 C 1	Same		L DOWN RS	9024	107 0	14			1.1.0		
the compre	chensive	gram	lwater/	drinkingw	arca s	APT-2 Vite O	n 9/2	21/1C	so Samp	Retor		
	1.	25				1. Taylor 199			222			
Equipment: Pump	Type >>	Hurric	ant	Tubing (Ty	pe/Length)	etton-lin	ed	_ Bailer Typ	e No			
Water Level Meter_	300-5	to		Multi-Parame	ter Meter (N	ake/SN#)	51 556	IDELOI8	99 Cal: 9/2	3/16 @08:29		
Turbidity Meter (Ma	ke/SN#)La	Mothe 200	De 147:	78 Cel= 1/2	N6 @ 08	\$ 50	Fi	Iter Lot #	NA			
Purge Water Hand	urge Water Handling: Discharged to surface Containerized Treated (how?)											

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Page 1 of ____



			MALINE AND 3					
Site/Client Name: Alaska LNG/F	ugro Nikiski	The second second	Well ID: ACT - >					
Project # : 105.00148.16001	1		Sample ID: APT-3-0916					
Sampled By: Sen Since	1 Seth 6/1	ver	Sample	Time:	210	Sample	e Date: 9/	20/16
Weather Conditions: 2 (ani)	La Calm		Duplicat	e ID:				
Sampling Method: X Low Flow] Other		MS/MSI		No -	Frip Blank	Required: 🕅	
Camping Method. EX con 1100 (Well info	ormation					
Well Type: 🗙 Permanent 🔲 Ter	nporary V	Vell Diameter	2 in.	Screen Inter	val: 25	5_ft B	GS to 28	5 ft BGS
Well Condition: 🕅 Good 🔲 Fair	Poor (if fair or poor e	explain in Notes)		Stickup Y	es 🗌 No	: If yes, 🕤	t above	e ground
		Gauging/Purgi	ging Information					
Depth to Water (ft BTOC): 74	26		Tubing/P	ump Depth (ft. BTOC)	280	S.	
Total Depth (ft BTOC): No	t melsured		Purge St	art Time (24-	hr) (C	5		
Depth to Product (ft. BTOC)	NA		Purge Er	nd Time (24-t	1r)	100		
Product Thickness (ft)			Total Pur	ge Time (mir	1) (a	9		
LOW FLOW: Max Draw Down screen, then use de	= (Tubing Depth - Top of afault value of 0.3 ft.;	Screen Depth)	X 0.25 =	(ft); if s	creen inter	val is not kno	wn or water table	e is below top of
Min. purge volume if required: purg	e volume (gal) = volume of	water/ft(gal/ft) X Water colu	mn thickness	(ft)	X # of casing	volumes	=gal
Well Diameter ~ gal/ft	1" – 0.041 gal/ft	2" - 0.1	63 gal/fi	4'	- 0.653 c	ai/π	6' - 1.4	os gai/tt
(Achieve stable parameters fo	r 3 consecutive reading, 4 p	Water Qualit parameters if practica	y Paramete	ng taken after p	oumping a	minimum of 1	flow through cell	volume])
Time Flow	Purge Temp	Specific	DO	ORP	pН	Turbidity	DTW	Drawdown
(24-hr) Rate	Volume (°C)	Conductance	(mg/L)	(mV)		(NTU)	(ft BTOC)	(ft)
(liter/ minute)	(gai or (± 3 %)	(µS/cm [*])	0 1		(± 0.1)	(± 10%,		
		(± 3%)	(± 10%)	(± 10mV)		or <5 NTU)		(Maxft)
NU BU	13 586	875	2.50	171.0	8.41	117	74.43	0.17
	145 591	\$71	7.00	111 C	\$ 94	154	74.47	0.21
	NE CID	075	171	111C	8.90	E	74 40	0-22
120 6.72	105 075	070	111	150 0	000	2	711 11 /	0 70
126 0.32	18.5 6.45	316	1.62	150-0	7.02	12L	176	0.20
1151 0.32	20.5 6.18	811	1.75	156.5	4.02	145	74.46	0.20
1136 0.28	22.5 6.25	816	1.23	1508	8.97	151	74.48	0.22
1145 0.20	24 6-71	873	1.06	150.0	9.05	154	74.49	0.23
150 0.20	25 6-77	875	1.00	149.4	9.05	152	74.50	0.24
1155 0.70	26 619	878	0.93	149.5	9.03	159	74.50	0.24
1200 0.19	25 70	\$73	0.86	149.6	900	152	74.50	Q 24
Parameter Stable (Check applica	ble)	017			1	1		
		~		V		<u> </u>	11	1
Sample Color: Drawn		Sample Odor:	No		Shee	n: Yes-	SIGNE	
		Analytica	I Sampling			C		
Analys	ies	Check	Applicable	-		Comin		
Basic suite of analytes			· · · ·					
Comprehensive water supply suite of	analytes	~ ~	<					
Other analyter List								
Other analytes. List:	-							
Notes:								
Environment El Von Parlo								
Zquipment: Pump Type	F COND > 190(F)	Note Dans 1	Tubing (1)	ype)	51 EF	1 INF	IN 899	L 199 LINO
vvater Level Meter 200-4		Multi-Paramete			ANT	X IVL	101011	
Multi-Parameter Meter Calibr	ation verified:	es No Date/	ime_v~	0	9-4	0	TIL	156
Turbidity Meter (Make/SN#)_	Laston	141-40	1nnk	CITE	50	Filte	er Lot #	1 4
Turbidity Meter Calibration ve	erified: 🛛 Yes 🗌 No	Date/Time	10010	0 10				10
Purge Water Handling: 🗌 🛙	Discharged to surface	Containerize	d [] Treat	ed (how?)_		Tot	al gallons ger	nerated:
BGS = Below Ground S	BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable Page 1 of							

Riter Str. 1



Groundwater Sampling Form

Site/Client Name:	Site/Client Name: Alaska LNG/Fugro Nikiski						Well ID: MW-27					
Project # : 105.001	48.16001				Sample	Sample ID: MW278-3416						
Sampled By: R	n Siwi	ec, Sp	th di	ver	Sample	Time:	55	Sampl	e Date: 9/10	016		
Weather Conditions	Clou	du Co	elun		Duplica	Duplicate ID:						
Sampling Method:	Low Flow	Otner_	<u>.</u>		MS/MS	D 🗌 Yes 🛛	No	Trip Blank	Required: 👽	Yes 🗌 No		
CARLES AND	E 1944-355-1	1.000		Well in	formation	mation						
Weli Type: 🔀 Pern	naneni 🗌 Te	emporary	N	/ell Diameter 🧖	in.	Screen Inte	erval 🗾 之	(ft B	GS to _5	ft BGS		
Well Condition: 🔀	Good 🗌 Fa	ir 🗌 Poor (il	f fair or poor e	xplain in Notes)	Sückup 💢 Yes 🔲 No; If yes,ft above ground							
Durath to this to the	TOO: 7	1 1 10		Gauging/Purg	jing Informa	tion	(A DTOC)					
Depth to Water (π E		0.60	1 3		Purge St	art Time (2)	(IL BIOC) 4-hr) /6	527				
Depth to Product (fi	BTOC)	RIA			Purge El	nd Time (24	-hr) 17	54				
Product Thickness	(ft)	NA			Total Pu	rge Time (m	nin) C	1				
LOW FLOW: Ma	een, then use	= (Tubing D default value (epth Top of S of 0.3 ft.:	Screen Depth)	X 0.25 ≠	(ft); if	screen inte	rval is not kno	own or water table	e is below top of		
Min. purge volume if	required: pu	rge volume (g	al) = volume of	water/ft(gal/	tt) X Water colu 163 cal/ft	umn thickness	(ft)	X # of casing	volumes6' - 1.4	= gal 69.gal/ft		
Their Diameter -	guint 1	- 0.0	Jan	Water Qual	ity Paramete	F 5	0.000	6.5 <u></u>	L			
(Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])												
Time	Flow	Purge	Temp	Specific	DO	ORP	pН	Turbidity	DTW	Drawdown		
(24-hr)	Rate (liter/	(gal or	(°C)	Conductance (uS/cm ⁶)	(mg/L)	(mv)		(NTU)	(π ΒΤΟΟ)	(π)		
11	minute)	liter	(= 3 %)		(400()	(. 40-10	(± 0.1)	(± 10%)	1	(Max #)		
1008	500	×		(= 3%)	(± 10%)	(‡ 10mV)		NTU)		(WaxR)		
10006	300	5	7.56	203	1.84	109.1	5.76	1046	36.75	0.15		
1611	300	6	7.06	199	1.61	88.1	3.69	201	36.75	0.15		
1614	300	7	6.93	1946	1.58	107.2	5.59	306	36.75	0.15		
1617	200	8	6.86	199	1.43	94.1	5.62	165	36.75	0.15		
thediar	200	9	Batter	Died fo	r pump			Win-		0		
16.00	300	14	712	199	1.24	29.3	6.09	ilo	36.75	0.15		
104	200	15	716	200	1.22	24.0	6.11	151	36.15	0.15		
11 HA	300	16	3.12	100	1.14	211	6.04	III	21.75	0.15		
1051	0.00	IF	7.00	200	1.40	2111	6.03	827	26.75	0.15		
11054	300	19	7.03	Oal C	1.28	28.0	5.98	72 3	31 75	0.15		
Deremotor Stable (Chook applie			201	1.00	00-1	1	12.2	20.13	0.12		
Farameter Stable (61	~						
Sample Color: (tear			Sample Odor:	Wond		Shee	en: N _C	2			
	Anah	IFAR		Analytic	al Sampling	-		Com	nonte			
Pasis suite of applytor	Anaiy	363		SHECK	Аррисарие			00111				
Comprehensive water	supply suite c	if analytes			- 1. (1. 54) of 1. (1. (1. (1. (1. (1. (1. (1. (1. (1.	-						
VOCs only + Arsenic	Supply cure c					-				1		
Other analytes. List:						-						
Notes: O MIC	6:00	during .	Nowings	D 110-20	Restan	to Que	N. 8					
Barris	J 0.00	s y	ų.	(0110		400	r					
Equipment: Pur	TID TUDES	SHUTY	icane		Tubing (T	A A	on-l'in C	1	Bailer used:			
Water Level Met	-r 300-	ST.		Multi-Paramet	er Meter (M	ake/SN#)	4 55	6 INE	101 899			
Multi-Parameter	Mater Calib	ration verif	ied 🕅 Ve	s No Date/	Time 9/16	16	38:29	1	<u></u>	r		
Turbidity Motor (Make/SNI#	La Ma	It 200	De 147	28	· w		Filte	erlot# 44	56		
Turbidity Meter (alibration	erified:	Yes CINIO	Date/Time	1616	69:0	1					
Purge Water Ha	ndling:	Discharge	d to surface	Containerize	ed [] Treat	ed (how?)		Tot	al gallons gen	erated:		

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

Page 1 of

16-Dec-16 Groundwater Sampling Form												
Site/Client Nam	ne: Alaska LNG/	Fugro Niki	ski		Well ID	Well ID: MW 39 A						
Project #: 105.	00148 16001	, erected and the second se		9	Sample	ID: MI	N34	4-091	6			
Sampled By:	Soth (Ni lor	1 Ben	Simile	Sample	Time \n	31	Sampl	e Date 9/	911		
Weather Condit	ions: (IPGC	Silas	263 F		Duplica	ate ID:	<u></u>			e p		
Sampling Metric	art: V Low Flow	Other			MS/MS	DIYes	No	Trip Blank	Required 🔽	Yes 🗆 No		
oumphing mound				Well inf	ormation			RIAD CHI	~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~~			
Well Type 🔀 P	ermanent 🔲 Te	трогагу	V	Vell Diameter 👌	in.	Screen Inte	rvat: 12	ft B	GS to 14	ft BGS		
Well Condition:	🗙 Good 📋 Fair	🗌 Poor (it	fair or poor e	xptain in Notes)		Stickup	Yes 🗌 N	a; If yes, 💪) • 45_ft above	e ground		
	0.5		1.50.1	Gauging/Purg	ing Informa	ition		1.7-4				
Depth to Water	(ft BTOC):	240			Tubing/	Pump Depth tart Time (2/		94-25				
Depth to Produc	nt (ft. BTOC)	ALA	An and a second second		Purge E	nd Time (24	-hr)	29				
Product Thickne	ess (ft)	NA			Total Pu	urge Time (m	in) 4	7				
LOW FLOW:	Max Draw Down screen, then use d	= (Tubing D	epth – Top of 5 of 0.3 ft.:	Screen Depth)	X 0.25 =	:(ft); if	screen inte	rval is not kno	own or water table	is below top of		
Min. purge volun	ne if required: purg	ge volume (g	al) = volume of	water/ft(gal/f	t) X Water co	lumn thickness	(ft) X # of casing	volumes	= <u> gal</u>		
Well Diamete	er – gal/ft	1"-0.0	041 gal/ft	2" - 0.1	163 gal/ft	4	l' - 0.653	gal/ft	6' - 1.4	69 gal/ft		
(Achieves	stable parameters fr	or 3 consecut	tive reading 4 r	Water Quality	ty Paramete	ers ing taken after	oumping a	minimum of 1	I flow through cell	volume1)		
Time	Flow	Purge		Specific	DC	ORP	pH	Turbidity	DTW	Drawdown		
(24-hr)	Rate	Volume	(°C)	Conductance	(mg/L)	(mV) -	P. C.	(NTU)	(ft BTOC)	(ft)		
	(liter/ minute)	(gal_or	(± 3 %)	(µS/cm ⁺)	· ·		(± 0.1)	(± 10%,	(m) (m)			
0950	150 List				(± 10%)	(± 10mV)		or <5 NTU)		(Maxft)		
0950	0.275	2	4.88	146	4.67	155.0	8.24	9.26	66.10	60.0		
0954	0.215	3	5.03	154	3.52	1527	8.31	11.8	(06.10)	0.68		
NUEY	1275	L	1.=4	Qas	3.08	Maris	852	11.5	(da-30	0.88		
0900	0 246	1	11.70	112	2.18	159 8	956	11 2	66 30	0.88		
1000	0.215	1	3.10	214	217	149 0	8 74	1.17	66.30	0.88		
1006	0.270	0	2000	220	227	1105	C 11	G 19	66.15	103		
	00015	at	2.00	011	2.22	191.0	013	7.17	(d. 4)	299		
1019	0-27	7	5.30	201	0.10	D3.1	0.00	1 of		Mad		
1019	0.000	12	5.43	000	2.07	170.1	5.08	7.10	60.00	0-11		
1024	0.20	12	2.20	224	1.70	148.4	0.09	7-01	66-30	0		
1024	0. 220	14	J 200	999	1.20	199.5	8.00	-2.71	66.02	0-10		
Parameter Stab	ble (Check applica	able)			L.,			A 1				
Sample Color:	Clear			Sample Odor:	Sight	sulfur	Shee	en: NO				
				Analytica	al Sampling							
	Analy	ses		Check	Applicable	-		Comn	nents			
Basic suite of ana	llytes			X								
VOCs only + Arse	vater supply suite of	analytes										
Other analytes, Li	ist [.]								12			
Notes:			an a									
NOLES												
		- 11	¥					6	æ.,			
Equipment:	Pump Type	SHUR	ricane		_ Tubing (1	ype) lef	lon-	ined	Bailer used:	🗌 Yes 🔀 No		
Water Level N	Neter 306-	.\$†		Multi-Paramete	er Meter (N	ake/SN#)_	151 5	56 10	Elo1899			
Multi-Paramet	ter Meter Calibi	ration verif	fied: XYe	s No Date/	Time 91	19/16	07	45				
Turbidity Mete	er (Make/SN#)	LaM	othe 5	20:20e	14728	03	00 k	S VIN Filte	er Lot # _ /	156		
Turbidity Mete	er Calibration ve	erified: [Yes 🗌 No	Date/Time	9/19/1	6 08	100	6		11 2		
Purge Water	Handling: 🔲 🛛	Discharge	d to surface	Containerize	ed 🗌 Trea	ted (how?)		Tot	al gallons gen	erated 1.5		
BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable Page 1 of												

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

B-20

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-		7	
Contraction of the local division of the loc		1	
ALC: NO	Succer 1	AV.	

StatClient Name: Alaska NC/Eurose Mikiaki	Well ID: MILIZAIZ							
	Sample ID: $M(1/25B - 0.91)$							
Project # . 100.00146.10001	2.0	Sample Time 1010 Cample Date 9 10/1 /						
Sampled By: Son Similer Jern Only		Sample Line: 1242 Sample Date: 1/1/16						
Weather Conditions: Clear		Duplica		7.11				
Sampling Method 🔁 Low Flow 🗌 Other	MS/MS	D 🗌 Yes 🎽	⊴.No	i rip Blank	Kequired: 🔀			
	in	Screen Inte	rvat:	5 ft B	GS to 345	ft BGS		
Well Condition: S Good C Eair C Poor (if fair or poor evaluation)	in Notes)		Stickup [7]	Yes 🗆 No	: If yes 2	36 ft above	ground	
Gau	ging/Purgin							
Depth to Water (fl BTOC): 24.93	ж. н	Tubing/Pump Depth (ft. BTOC):						
Total Depth (ft BTOC): 37,48		Purge Start Time (24-hr)						
Depth to Product (ft. BTOC)		Purge El	nd Time (24-	-hr) le	141			
Product Thickness (ft)	Depth)	X 0 25 =	rge (m (ff): if	screen inter	val is not kno	wn or water table	is below top of	
screen, then use default value of 0.3 ft.			(10) "					
Min. purge volume if required: purge volume (gal) = volume of water/ft	(gal/ft)	X Water colu 3 gal/ft	umn thickness	(ft)	X # of casing	volumes	= gal 69 gal/ft	
		Paramoto	76	- 0.000 (ant.	0 - 1.4	oo gunt	
(Achieve stable parameters for 3 consecutive reading, 4 parameters	ers if practical	[each readi	ng taken after	pumping a	minimum of 1	flow through cell	volume])	
Time Flow Purge Temp Sp	pecific	DO	ORP	pН	Turbidity	DTW	Drawdown	
(24-hr) Rate Volume (°C) Conc	buctance	(mg/L)	(mV)		(NTU)	(ft B FOC)	(π)	
minute) (± 3 %)	croin /			(± 0.1)	(± 10%,		(Max 4)	
	± 3%)	(± 10%)	(<u>⊤</u> 10mV)		NTU)			
1205 0.300 2 6.75 31	13 1	5.18	157.3	5.5	74.2	24.96	0.03	
1209 0.300 75 6.90 35	50	4.81	153.5	5.37	60.5	24.95	0.02	
1213 0.300 3.25 7.32 35	5 1	4.26	118.0	5.44	57.7	24.98	0.05	
1217 0.300 4.50 7.45 24	7 1	3.79	107.0	5.52	36.8	24.99	0-06	
12 01 0.300 5.75 7.09 28	6	3.38	Illasta	5.41	28.5	24.99	0.06	
1225 0.300 7.00 6.98 39	1 .	3.15	111.7	5.36	als	24.94	0-06	
1226 0.300 8 25 7.00 40	9	2.91	94 6	5.48	17.8	24.94	0.06	
1222 0300 9.50 1.29 11	1	2.55	89.7	5.52	14.3	24,99	0.06	
1227 0.200 11 1 234 41	53 4	2.46	88.0	5.56	45	24.99	0.06	
	38/ 1	2.39	910	5.50	11.4	24.99	O.d.	
Parameter Stable (Check applicable)	1	1	10-		1.1	STU		
		N.			KT		L	
Sample Color: Clear Sam	ple Odor:	NO		Shee	en: /V(2		
Annia	Analytical Check A	Sampling			Comp	nents		
Analyses	CHECK A	philtanie			Comin	nyika		
Comprehensive water supply suite of analytes								
VOCs only + Arsenic								
Other analytes. List:								
Notes:								
6								
Dell la			100	-63 P.	. [N	
Equipment: Pump Type 55 HUITICANE		Tubing (T	ype) TC 1	on-1 m	C	Bailer used:	Yes XNo	
Water Level Meter 300 4t Multi-	-Parameter	Meter (M	ake/SN#)_	15 5	56 10	E 101 899		
Multi-Parameter Meter Calibration verified: XYes	No Date/Ti	me_971	116	07:4	5		-1	
Turbidity Meter (Make/SN#) La Motte 2020e	2 1470	18	1 0		Filte	er Lot #4	56	
Turbidity Meter Calibration verified: XYes No Dat	te/Time	9/19/1	6 0	8:00			45	
Purge Water Handling: Discharged to surface	ontainerized	Trea	ted (how?)		Tot	al gallons ger	erated:	
BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable Page 1 of								



Cita/Client N	Alaska i NC		Well ID: MIN - ENA										
Site/Glient Name	Alaska LNG/				Sample	Sample ID: MILLICH L. AVIL I							
Project # : 105.00	148.16001		A 15		Sample	Sample ID: MUSOA - 04/6							
Sampled By: 15	en Siwill,	1 Set	h Olive	\sim	Sample Time: 12:46 Sample Date: 1/10/16								
Weather Conditio	ns: Part	ly C	lady		Duplica	te ID:							
Sampling Method	: 🖄 Low Flow	Other_			MS/MS	D 🗌 Yes 🏅	<no 7<="" td=""><td>Trip Blank I</td><td>Required: 🔀</td><td>Yes 🗌 No</td></no>	Trip Blank I	Required: 🔀	Yes 🗌 No			
			10.45	Well Inf	ormation	110-20	1-		1110				
Well Type Pe	rmanent 🗌 Te	mporary	W	eli Diameter	<u>∠</u> in.	Screen Inte	rvat 🚺	ft B	GS to 140)fl BGS			
Well Condition: 2	Good 🗌 Fair	Poor (if	fair or poor ex	xplain in Notes)		Stickup X	Yes 🗌 No	; If yes, 🌠	ft abov	e ground			
		0.0		Gauging/Purg	ng Information								
Depth to Water (f	TOCAL	2.43			Pume S	Pure Start Time (24-hr)							
Depth to Product	(# BTOC)	14 04			Purge E	nd Time (24-	-hr)	440					
Product Thicknes	s (ft)	NA			Total Pu	irge Time (m	in) 88	25					
LOW FLOW: M	Max Draw Down	= (Tubing D tefault value of	epth Top of S of 0.3 ft.;	Screen Depth)	X 0.25 =	(ft); if	screen inter	rval is not kno	iwn or water tab	le is below top of			
Min. purge volume	if required: pur	ge volume (g	al) = volume of v	water/ft(gal/f	t) X Water col	umn thickness	(ft)	X # of casing	volumes	= gal			
Well Diameter	- gai/ft	1* - 0.0)41 gal/ft	2"-0.	63 gal/ft		r – 0.653 g	jal/ft	6 – 1.	409 gal/II			
(Achieve st	able parameters f	or 3 consecut	live reading 4 n	Water Qualit arameters if practic	ty Paramete al [each readi	ers ing taken after	pumping a	minimum of 1	flow through cel	li volume])			
Time	Flow	Pume	Temn	Specific	DO	ORP	pH	Turbidity	DTW	Drawdown			
(24-hr)	Time How Purge Temp (24-hr) Rate Volume (°C) (liter/ (gal or minute) (+ 3 %)		(°C)	Conductance	(mg/L)	(m∨)		(NTU)	(ft BTOC)	(ft)			
			(+ 3 %)	(µS/cm ^c)			(± 0.1)	(± 10%,					
		inter	(= • •••)	(± 3%)	(± 10%)	(± 10mV)		or <5 NTU)		(Maxft)			
ແລວ	1400	400 75 5.74 1		162	3.59	115.8	8.95	80.8	66.99	0.06			
1105	0.400	10 1.5 580		140	2.97	105.3	8.67	2010	66.99	0.06			
1174	0.400	2	647	Jach	271	94.0	8.48	2730	66.99	0.06			
100	0 0.100 2 0.11		100	2.7	QU 3	8.33	2022	66.99	0.06				
1151	0.400	5	590	201	1 72	02 0	8 21	7897	61.90	0.00			
11 20	0-400	EX	5.10	201	1. 13	023	0.04	0147	61 1	0.06			
1140	0-400	3-0	2.32	.901	1.50	12.0	0000	2007	01001	0.00			
1144	0,400	6.25	5.94	200	1.71	16.0	8.00	9929	61.00	0.0+			
1216	0.400	15	6.42	146	1.16	00.9	8-19	257	64.00	0.01			
1219	0 400	15.5	6.84	196	1.47	10.0	8.50	176	67.00	0.0.1			
1333	0.400	16	7.4	197	1.31	77.6	8.50	142	61.00	0.07			
Parameter Stable	e (Check applic	able)	See	- back i	ot sh	ret			1				
Sample Color:	Clear			Sample Odor:	slight a	Sulfur	Shee	en: N					
	Mar			Analytic	al Sampling	1			ler				
	Analy	/ses		Check	Applicable	Applicable Comments							
Basic suite of analy	ytes			~	<								
Comprehensive wa	ater supply suite c	of analytes											
VOCs only + Arser	nic												
Other analytes, Lis	it,								- ht l				
Notes: At 12=05 Pump battery died on & had to be switched. Flow was disrupted. This well appears to have strost Jacked. The PVC top is hitting the monument lid.													
Equipment: F Water Level M	Pump Type	35 Hu	rricane	Multi-Paramet	_ Tubing (` er Meter (N	Type) <u>126</u> /ake/SN#)_	10n-111 151 5	56 11	Bailer used:	Yes XNo			
Multi-Paramete	er Meter Calib	pration veri	fied: 🕅 Ye	es No Date	Time_1/	18/16	08:	21					
Turbidity Mete	r (Make/SN#)	La /	Motte z	10202 1	1728			Filt	er Lot # 💪	456			
Turbidity Mete	r Calibration v	verified:	Yes 🗌 No	Date/Time	9/18/1	6 08	34			0			
Purge Water	Handling: 🗌	Discharge	ed to surface		ed 🗌 Trea	ated (how?)		To	tal gallons ge	enerated:			
BGS	BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable												

	ant	pr how	vor. 1	tem? 1	NS/LING H	adilities Gro	Confider undwater Qu	ality Sampl	ing and T	esting	drawsa	m
-	12220	1350	17	4.42	197	USAB-FG	Report - E GRZZZ-00-0	vent 277 02016-004	Rev.50	67.00	0.07	
	1998	1.350	17.5	7.15	902	1.18	76.6	16 8.38	141	6700	0.07	
	1231	0,350	18	5.14	905	1.04	79.5	8.31	1339	67.00	10.07	5
	1234	2,750	[9	5.54	204	0.97	91.6	8-07	203	67.00	0.07	_
	1239	0.350	19.5	6.20	203	0.78	85.6	8.20		67.00	0-0+	
	1242	1.350	20	6.33	903	077	82.3	8.27	138	67.05	0.12	
	1244	.350		6.23	204	0.75	83.3	8.24	43.1	67-05	0-12	*
	1 Sta	bilized	2	\checkmark	\checkmark	\checkmark	\checkmark	\checkmark			÷	

2872

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Site/Client Name	: Alaska LNG/F	ski		Well ID: MW-50 B									
Project # : 105.00	0148.16001		in the state of	Sample	10: MU	J50B	- 091	6					
Sampled By:	Seth (N:Jer	Ban 4	Since	'C	Sample	Sample Time: 941 Sample Date: 9/18/16						
Weather Conditio	Part In	Clas	dia	100		Duplica	te ID:			wa wa ang ing ing ing ing ing ing ing ing ing i			
Cameline Mathad						MS/MS	D 🗋 Yes 5	<no.< td=""><td>Trip Blank</td><td>Required X</td><td>Yes No</td></no.<>	Trip Blank	Required X	Yes No		
Sampling Method					Well Inf	ormation				1			
Well Type: X Pe	rmanent 🗌 Tei	трогагу	V	Vell Diar	neter	₹in.	Screen Inter	val: 3) ft B	GS to 50	ft BGS		
Well Condition:	Good 🗍 Fair	Poor (i	f fair or poor e	xplain i		Stickup 🗶	res 🗋 No	a; If yes, 📿	63_ft above	e ground			
	Summer St.			Gaug	ing Informa	ng Information							
Depth to Water (f	BTOC): 45	.20				Tubing/Pump Depth (ft. BTOC):							
Total Depth (ft B	TOC): 55	·SgA			Purge S	nd Time (24	-nr)	940					
Product Thicknes	(It. BIOC)	NA				Total Pu	irge Time (m	in)	51				
LOW FLOW:	Max Draw Down	= (Tubing C lefault value	Depth - Top of : of 0.3 ft.:	Screen D	epth)	X 0.25 =	(ft); if	screen inte	rval is not kn	own or water table	e is below top of		
Min. purge volume	e if required: purg	ge volume (g	al) = volume of	water/ft_	(gal/	t) X Water col	umn thickness	(ft)	X # of casing	volumes	= gal 69 gal/ft		
Well Diameter	- gal/ft	1" - 0.	041 gal/ft		2"-0."	to gal/m	4	- 0.053	yal/It	0 - 1,4	ob gaint		
(Achieve st	able parameters fo	or 3 consecu	itive reading, 4 p	Wa paramete	rs if practic	ai [each readi	ing taken after	pumping a	minimum of	1 flow through cell	volume])		
Time	Time Flow Purge Temp			Sp	ecific	DO	ORP	pН	Turbidity	DTW	Drawdown		
(24-hr)	Rate	Volume	(°C)	Cond		(mg/L)	(mV)		(UTU)	(T BIOC)	(π)		
	(men/ minute)	(yai bi	(± 3 %)	(µc	sen)			(± 0_1)	(± 10%,		(Max #)		
0855		0		(±	3%)	(± 10%)	(± 10m∨)		NTU)		(IVIAAII)		
0855	0.200	1	5.50	25	2	2.33	207.6	5.79	123	45-22	0.02		
0900	0-200	9	5.59	230)	2.00	213.6	5-82	118	45.22	0.02		
09.05	0.200	3	6.25	Ac	5	1.76	206.0	6.07	89.9	45.22	0.02		
0910	0.200	4	6.97	141	5	1.61	1917	6.21	67.8	45.22	0.02		
0915	0.200	5	7.42	180	3	1.46	176.4	6.32	54.5	45.22	0102		
0920	0.200	la	7.70	17	9	1.40	205.2	6.35	38.0	45.22	0.02		
0925	0.200	7	7.88	16	7	1.41	207.6	10.36	31.6	45.22	0-02		
ng 3()	0.000	4	4.00	1104	1	1.32	195.3	6.35	29.9	45.22	0.02		
09 25	0,200	q	8.21	101		1.26	192.4	6.35	24.5	45.22	0.02		
09.40	0.200	10	8.34	100)	11.23	187.0	6.34	20.1	45.22	0.02		
Parameter Stabl	e (Check applic	able)		100	1		10	1			UNU		
				V	la Odori	1 1		She	an: MI				
Sample Color:	It yellow	~		Samp		NO Sneen. IVO							
	Anaty	2021			Check	Applicable			Com	ments			
Rapic suite of analy	vites	363	(1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.1.		5	(
Comprehensive wa	ater supply suite o	f analytes			/	<u>`</u>							
VOCs only + Arser	nic		and the second data										
Other analytes. Lis	st:												
Notes:								2					
0													
	1	$^{\circ} \leq 4$	1001 cane				tes	on-lin	1	D – I – a vo – dv			
Equipment: F	Pump Type		ricant			I ubing (iype)	YGI EF	1 INF	iol 299			
Water Level M	leter 300-4	٢		Multi-	Paramet	er Meter (N	AQAL	2 50	21				
Multi-Paramet	er Meter Calib	oration ver	ified: 🖄 Y		lo Date		nor lo	0	<u>~1</u>	tor Lot # 1 1	156		
Turbidity Mete	r (Make/SN#)	La 10	11× 200	toe		GASA	6	0.21			50		
Turbidity Mete	er Calibration v	verified:	Yes 🗌 N	o Dat	e/Time_	1/10/	ated (Law A)	0.00	т.		Peratod 3		
Purge Water	Handling: 📋	Discharg	ed to surface	e 🗙 Co	ntaineriz		aled (now?)		(nai yanons ye			
BCS - Polony Ground Surface BTOC= Below Top of Casing NA = Not Applicable Page 1 of													

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable
S	LR	<u>9</u>	G	roundwater	Dec-16 • Sampl	ing Forr	n					
Site/Client Name	e: Alaska LNG/	Fugro Niki	ski		Well ID	MW	621	4				
Project # : 105.0	0148.16001				Sample ID: MWGRA- 0916							
Sampled By: R	In Suite	1911	1. Blue	N	Sample Time: 1503 Sample Date: 9/19/16							
Weather Condition	ons: Obr4	11 (10)	da		Duplica	ite ID:						
Sampling Methor	t: I i ow Flow	Other			MS/MSD Ves No Trip Blank Required: No							
Sampling Wethou			and the second	Well inf	ormation							
Well Type: R Pe	ermanent 🗌 Te	emporary	V	Vell Diameter 🊄	<u></u>	Screen Inte	erval: _/2	0ft B	GS to	ft BGS		
Well Condition:	🕻 Good 🔲 Fai	r 🗌 Poor (i	f fair or poor e	explain in Notes)		Stickup 🗹	Yes 🗌 No	a: If yes. 🥑	a g ft abov	e ground		
		012	0	Gauging/Purg	ing Informa	ition	(# PTOC)	120				
Depth to Water (ft BTOC)	19.3	*		i uping/i	tari Time (2)	(IL. BTUC)	1190	/			
Depth to Product	(ft BTOC)	TA A	0	-	Purge E	nd Time (24	-hr) 15	02				
Product Thickne	ss (ft)	- NK			Total Pu	irge Time (n	nin) 4	3				
LOW FLOW:	Max Draw Down screen, then use o	= (Tubing I default value	Depth – Top of of 0.3 ft.	Screen Depth)	X 0.25 =	:(ft); if	screen inte	rval is not kno	own or water tab	le is below top of		
Min. purge volum	e if required: pur	pe volume (g	al) = volume of	water/ft(gal/i	t) X Water col 163 gal/ft	umn thicknes	$\frac{(ft)}{4' - 0.653}$	X # of casing aal/ft	volumes6' 1	= <u></u> gai 469 gal/ft		
ven Diamete	r – gaint	1 - 0.	041 gaint	Water Quali	ty Paramete	ers						
(Achieve st	table parameters I	for 3 consecu	itive reading, 4	parameters if practic	al [each read	ing taken after	pumping a	minimum of 1	I flow through ce	li volume])		
Time	Flow	Purge	Temp	Specific	DO	ORP	pН	Turbidity	DTW (# BTOC)	Drawdown		
(24-hr)	Rate (liter/	(gal or	(°C)	(µS/cm ^c)	(mg/L)	(114)	i	(1410)	(11.8100)	110		
	minute)	liter	(± 3 %)	(± 3%)	(± 10%)	(± 10mV)	(± 0.1)	(± 10%, or <5 NTU)		(Maxft)		
1428	0.310	1.5	5.69	181	3.56	121.5	7.19	141.0	81.42	0.04		
1422	0.310	2.5	5.91	181	2.95	99.3	7.66	130.0	81,40	0.02		
1436	0.310	25	5.91	181	2.1)	97.4	1.75	202	\$1.43	0.05		
1750	0.310	5.5	Sala	100	2.48	93.1	7.87	113	81.43	0.05		
1440	0,010	7.5	573	185	220	95.9	7.91	126	181.45	0.07		
1440	0.30	2.2	1.05	140	1.8%	91.3	8.01	61. 8	14 45	0.07		
1420	0,00	0.7	6.05	101	1 90	871	0 11	52 10	\$ 47	0.04		
1451	0.00	1.7	6.00	142	1 81	45 4	Ciu	116.1	81047	0.04		
1400	0.00	0.0	6.05	1931	1 81	00.0	6 11	7001	41.41	6.03		
15.02	0~ 210	10.0	0.17	107	1000	84.2	1.15		01 - 11	0-0-5		
				•			· ·					
Parameter Stab	е (Спеск аррис	able)	. I		0.1		1-1	A .				
Sample Color:	Clear	()		Sample Odor:	No		She	en: N	0			
				Analytic	al Sampling			Com	nents			
	Anaŋ	yses		Check	Аррисаые				Hento			
Basic suite of anal	ytes	of analytes		2	5							
VOCs only + Arse	nic	or analytes										
Other analytes. Lis	st:									1		
Notes:										*******		
Equipment: Water Level M Multi-Paramet Turbidity Mete	Pump Type Meter 300 er Meter Calib er (Make/SN#)	55 l-br ft LaMc	ricane ified: XY HC 20	Multi-Paramet es □No Date/ 2000 14 o Date/Time	_ Tubing (er Meter (M Time_9// 728 9/19//	Type) <u>†64</u> Maké/SN#) 9/1 6	Hon-l'in 151 5: 07:4	ed 56 10 5 Filt	Bailer used: <u>F 101 899</u> er Lot # <u>C1</u> 2	□ Yes QNc		
Purge Water	Handling:	Discharo	ed to surface	e SContainerize	ed 🗋 Trea	ated (how?		To	tal gallons ge	enerated: 45		
	= Below Ground	Surface B	TOC- Below T	op of Casing NA =	Not Applica	ble		P	ape 1 of			

B-25



Groundwater Sampling Form

StarCleark Name. Aarake LNGF upro: Nickk. Well III: //W/ Act Project : 1050/46 1900: Sample ID: MW 744 - 0116 Sample D:	Minter the A												
Project #: 105:001:48:10001: Sample Dr. M.W. 74.4 - 0116 Sampled By: Box 31,01001 / 104 min 10 min	Site/Client Name	: Alaska LNG/	Fugro Nikis	ski		Well IC	Well ID: ///// /4/+						
Sampler Bly: Bon Studiet / Seth Oliver Sample Time / 0.3.7 Sample Date: //1/16 Westere: Condition:: // 0.4.9.7 // 14.4 r* / 5.0° F Sampler Method S Low Rav Dohm Well Information Well Infor	Project # : 105.00	148.16001				Sample	e ID: MU	V 74A	-0910	0			
Wandam: Condition: [Sampled By	Sun B	11510	1 Soth	Oliver	Sample	e Time: 10	37	Samp	le Date: 1/1	7/16		
Order Duration C (C) C (C) C (C) C (C) C (C) <thc (c)<="" th=""> C</thc>	Maather Condition		WICC,	abural	b 50°C	Dunlies	ate ID:	<u>~</u> 1					
Sampling Nethod: QL Low Row Other Molt Type: Yes: No The Blank redurder QL Low Row Yes: No The Blank redurder QL Low Row The Blank redurder QL Low Row No	vveatne: Condition		2/1	grid y m	- <u>JO R</u>	Dupilo		-/.	T : DI I	D. E			
Well information Well Diameter: In Screen Interval: IS device SVe: No. If yes, J.C. It BOS Well Diameter: Screen Interval: IS device SVe: No. If yes, J.C. It BOS Depth to Product (ft, BTOC): J.C. It J.C. J.C. J.C. J.C. J.C. J.C. J.C. J.C	Sampling Method	: 🖌 Low Flow	Other			MS/MS			I rip Blank	Requirea: X			
Weil Type: Zinermanent Termanent Termanent <td></td> <td></td> <td></td> <td></td> <td>Well'I</td> <td>normation</td> <td></td> <td>1.7</td> <td>25</td> <td>155</td> <td>1.000</td>					Well'I	normation		1.7	25	155	1.000		
Well Candidon & Gaocii Par Poor iff har or poor explain in Notes: Stickus X vel Net ! Yes, X Col 11 Allowe ground Depth to Water (fi STOC): 51.60 Full water (fi STOC): 11/1 Depth to Water (fi STOC): 51.60 Full water (fi STOC): 11/1 Depth to Tool: 11/1 Purge Statt: Three (24-In) 03.6 Product Three (76-In) 10/3 Purge Statt: Three (24-In) 03.6 Product Three (76-In) 10/3 Purge Statt: Three (24-In) 03.6 Well Diameter - galfi 11/1 0.23 galfit 4 0.253 galfit 4	Well Type: Per	manent 🗌 Te	emporary	V	vell Diameter	<u> </u>	In. Screen Interval: 151 ft BGS to 151 ft BGS						
Gauging/Purging Information Depth to Water (ft ETOC): 1/0.00 Purge Start Time (24-tr) 0/0.00 Depth to Product (ft ETOC): 1/0.00 Purge Start Time (24-tr) 0/0.00 Depth to Product (ft ETOC): 1/0.00 Purge Start Time (24-tr) 0/0.00 Product (ft ETOC): 1/0.00 Purge Start Time (24-tr) 0/0.00 DOW FLOW: Asc Dawn Dawn - (fcding bepth - Tor of Screen Depth) X0.25 *	Well Condition: 🚺	Good 🗋 Fai	r 🗌 Poor (if	fair or poor e	explain in Notes)	Stickup 🔀	Yes 🗌 N	o; If yes 🥁	fi above	e ground		
Depth to Water (# BTOC): 51.60 Tubing/Fump Depth (# BTOC): Depth to Valuer (# BTOC): Purge Sant Time (24-hn) 63.6 Depth to Product (f. BTOC): Purge Sant Time (24-hn) 6.0 Down for the Depth Depth - To ef Scence Depth) X 0.25 ±	The second of				Gauging/Pu	rging Informa	ation	0.14	111	-			
Table Depth (h BTOC): [21, 3] C Purgle Staft Lime (24-hr) 0.3 (C) Product (h BTOC): [21, 3] C Purgle Staft Lime (24-hr) 0.3 (C) Product (h BTOC): [21, 3] C Purgle Staft Lime (24-hr) 0.3 (C) Product (h BTOC): [21, 3] C Purgle Staft Lime (24-hr) 0.3 (C) Product Thickness (ft) [21, 3] C [21, 3] C [21, 3] C Num pure volume (a): volume (a): volume of stress (hght): X (a) C asing volume: [21, 3] C [21, 3] C Well Diameter - galift 1* - 0.041 galift 2* - 0.163 galift 4* - 0.653 galift 6* - 1.469 galift Name volume (a): volume (a): volume of value of a stress (Ligner); [22, 4] C [23, 4] C [23, 6] C [21, 6] C Nume volume volume (a): volume of value of a stress (Ligner); [23, 6] C [23, 6] C [24, 6] C	Depth to Water (ft	BTOC: 5	.60			Tubing/	Pump Depth	(fi. BTOC)	14	l			
Depth to Product (fr. BTOC) Purgle End Time (24-fm) D_3 (C) Product Tinccrises (fr. Total Purgle Time (min) A C <td>Total Depth (fi B</td> <td></td> <td>1,20</td> <td></td> <td></td> <td>Purge S</td> <td>start Lime (24</td> <td>-nr) O</td> <td>1.56</td> <td></td> <td></td>	Total Depth (fi B		1,20			Purge S	start Lime (24	-nr) O	1.56				
Product Interness (ft) Internet (Low FLOW: Max Draw Down (Tuking Depth - Too of Screen Depth): X.2.2 (ft) # access interval is not known or water table is below top of screen. The use default value of 0.3 ft: IVM FLOW: Internet results Transport (Internet results) <	Depth to Product	(ft. BTOC)	Ni			Purge E	and Time (24-	-nr) (()	56				
LOW FLOW: Map Draw Down = (1 using Lepth - To or of science) PB/P/ALL2 =	Product Thicknes	s (ft)	IVA			I otal Pi	urge I ime (m	in) (e	0	un an un tar tabl	a in balaw top of		
Min. purge volume if inquined, purge volume (gal) = volume of water M	LOW FLOW: N	tax Draw Down creen, then use c	= (Tubing D lefault value o	epth – Top of 3 of 0.3 ft.;	Screen Depth)	X U.25 =	=(π); ir	screen inte	rvai is not kn	own or water table			
Weil Diameter - gain 1 - 0.04 r gain 2 - 0.15 gain 4 - 0.05 gain 0 - 1.05 gain Native state parameters for 3 consecutive reading 4 parameters for parameters (Achieve state parameters for 3 consecutive reading 4 parameters for parameters Time Classify and class after parameters Note: Classify and class after parameters (Achieve state parameters for 3 consecutive reading 4 parameters for parameters (achieve state parameters for 3 consecutive reading 4 parameters for parameters (achieve state parameters for 3 consecutive reading 4 parameters for parameters (achieve state parameters for 3 consecutive reading 4 parameters (achieve state parameters for 3 consecutive reading 4 parameters (achieve state parameters (achieve stat	Min. purge volume	if required: pur	ge volume (ga	al) = volume of	water/ft(g	al/ft) X Water co	lumn thickness	(ft)	X # of casing	g volumes	= gal		
Water Quality Parameters (Achieve stable parameters for 3 consecutive reading 4 parameters for	vveli Diameter	gai/π	1" - 0.0	/4 i gai/π	2 -	0. 165 gava		- 0.053	gavit	0 - 1,4	oo gant		
Time (24-in) Flow (1000) Purge (1000) Temp (1000) Specific (1000) DO (mmpL) ORP (mmpL) PH (mmpL) Turbidity (1000) DTW (18100) Dawdown (mmpL) 004 46 0.450 1 4.55 12 4.52 1000 2.100 1000 0.250. 0.410 0.410 1.100 0.100 0.250. 0.100 0.550. 10.000 0.500. 10.000 0.500. 10.000 0.000. 0.000. 0.000. 0.000. 0.000. 0.000. 0.000. 0.000. 0.000. 0.00000000000000000	Water Quality Parameters (Achieve stable parameters for 3 consecutive reading. 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])												
inter Flow Flow <thflow< thr=""> 004 0.0<!--</td--><td>(Adileve Ste</td><td></td><td>Duras</td><td>Tomp</td><td>Chooific</td><td></td><td></td><td>nH</td><td>Turbidity</td><td></td><td>Drawdown</td></thflow<>	(Adileve Ste		Duras	Tomp	Chooific			nH	Turbidity		Drawdown		
(iner/ minute) (gal or minute) (gal or min	(24-hr) Rate Volume (°C) Conductance (mg/L) (mV) (NTU) (ft BTOC) (ft (liter/ (asl or (uS/cm ⁵))												
Immute Immute<	(itter/ (gal or (μS/cm ⁶) minute) (± 3 %) (± 0.1) (± 10%,												
OA 46 0.450 1.52 1.600 NTU; NTU; NTU; OA 46 0.450 1.452 1.60 2.877 1.47 58.50 G.10 1006 0.250 8 5.26 1.2 2.43 50 8.50 1.60 1.10 1016 0.200 9 5.32 1.12 2.45 145.2 8.50 1.60 1.00 1016 0.200 10 5.55 1.12 2.45 145.2 8.40 6.40 0.55 8.22% 6.68 1021 0.200 10 5.55 1.12 2.42 1.40.4 8.40 10.4 5.40 6.50 1034 0.200 13 5.41 14 0.11 14.9 8.45 13.40 6.51 1.50 10.50	minute) (± 3 %) (± 10%) (± 10mV) (± 0.1) (± 10%, (± 0.1) (± 0.1) (± 10%, or <5 (Max_ft)												
OA 46 0.456 7 4.55 172 4.52 160.778.77 147 58.50 G.10 IO06 0.250 8 5.24 172 2.43 50 8.50 160 58.70 G.10 IO16 0.250 9 5.32 173 2.45 140.5 8.50 8.53 6.10 IO16 0.200 9 5.32 173 2.45 140.5 8.40 70.5 58.72 6.10 IO16 0.200 10 5.53 171 2.52 140.5 8.40 70.5 58.72 6.40 6.50 IO21 0.200 13 5.51 171 2.13 140.5 8.40 58.72 58.74 6.50 IO21 0.200 13 5.41 1.41 9.10 13.54 54.14 6.51 IO30 0.200 13 5.41 1.41 9.10 8.65 14.04 58.14 6.51 IO30 0.200 13 5.41 1.42 1.41 6.51 1.80 10.00 8.6													
1006 0.250 8 5.26 12 2.43 150' 8.50 16' 58.70 7.60 1010 0.200 9 5.32 132 2.65 148.2 8.50 16' 58.70 7.60 1016 0.200 9 5.32 173 2.52 140.5 8.40 70.5 58.28 6.68 1021 0.300 10 5.55 174 2.52 140.5 8.40 70.5 58.28 6.68 1026 0.300 13 5.51 174 2.12 141.9 8.65 43.4 55.9 58.10 6.50 1036 0.300 13 5.41 14 2.91 131.5 8.61 45.4 58.14 6.54 1036 0.300 13 5.41 151.7 58.14 6.54 14 6.54 1036 0.305 14 56 15 1.80 10.00 5.61 58.14 6.54 Sample Color: (LAT Sample Odor: No Sheen: No No	0946 0.450 7 4.55 172 4.52 160.78.27 147 58.50 6.90												
010 0.200 9 5.32 112 0.65 148,2 7.53 64.3 55,4 0.6 100 1016 0.200 10 5.55 112 0.25 140,5 8.46 70-5 58.40 6.48 1021 0.200 10 5.55 112 0.25 140,5 8.46 70-5 58.40 6.50 1024 0.200 13 5.57 114 0.10 141,9 8.65 435.4 58.10 6.50 1036 0.200 13 5.57 114 0.11 141,9 8.65 43.4 55.0 6.50 10.50	1006 0250 8 5.26 172 2.93 150 8.50 116 58.70 7.1												
IOIL 0.200 10 5.55 172 2.55 140.5 8.60 70.5 58.28 6.68 IO2I 0.200 10 5.55 173 2.30 174.9 8.60 70.5 58.28 6.68 IO2I 0.200 13 5.57 174 2.10 141.9 8.65 43.4 55.9 58.10 6.50 IO2I 0.200 13 5.57 174 2.10 141.9 8.65 43.4 4.51 10.6 50 10.50	1000	0 200	q	5 32	112	Ole	1447	8.5)	493	54 40	6.80		
1016 0.200 10 5.55 112 2.52 140.5 6.000 10.5 58.25 6.65 1021 0.200 11 5.58 113 2.30 134.9 5.69 58.20 6.50 1036 0.200 13 5.51 144 2.13 141.9 8.65 43.4 55.10 6.50 1036 0.200 13 5.49 144 2.13 141.9 8.65 43.4 55.14 6.51 1036 0.200 13 5.49 145 1.91 139.5 6.61 46.9 58.14 6.59 1036 0.200 13 5.49 145 1.91 139.5 8.61 46.9 58.14 6.59 1036 0.200 13 5.49 145 1.91 139.5 8.61 46.9 58.14 6.59 14.00 58.14 6.59 14.00 58.14 6.59 14.00 58.14 6.59 14.00 14.00 14.00 14.00 14.00 15.00 14.00 14.00 14.00 14.0	1000	0.00	10	5.00	140	6-65	11105	VII	10 -	50.10	0 10		
1031 0.300 11 5.551 174 3.30 191.4 3.94 55.9 100 6.50 1036 0.200 13 5.51 174 3.10 141.4 3.65 43.4 58.10 6.50 1031 0.200 13 5.44 13 1.91 141.4 3.65 43.4 58.14 6.51 1036 0.200 13 5.44 13 1.91 141.4 3.65 43.4 58.14 6.51 1036 0.200 13 5.44 13 1.91 141.4 3.65 14.6 58.14 6.51 1036 0.200 13 5.44 145 1.80 140.0 8.65 14.5 14.6 9.58.14 6.54 Parameter Stable (Check applicable Analyses Comments Analyses Check Applicable Comments Analytes X Comprehensive water supply suite of analytes Vols only Arsenic Oree (Applicable	1016	0.200	10	2.35	111	2.52	140.1	0.00	70-2	28.28	6.60		
1026 0.900 13 5.51 174 0.10 141.9 8.65 43.4 58.10 6.50 1031 0.900 13 5.44 13 1.91 131.5 8.61 43.4 58.10 6.51 1036 0.905 14 5.56 135 1.80 140.0 8.65 51.4 58.14 6.51 Parameter Stable (Check applicable) Sample Odor: No Sheen: No Analytical Sampling Analytical Sampling Comprehensive water supply suite of analytes VOCs only + Arsenic 200 51 Multi-Parameter Meter (Make/SN#) 556 105.10 14.5 Tubing (Type#Chonf (inft & Bailer used: Dift analytes VOCs only + Arsenic Only fight analytes Voting (Type#Chonf (inft & Bailer used: Dift analytes Voting Type Sci Autri Cance Tubing (Type#Chonf (inft & Bailer used: Dift analytes Voting Multi-Parameter Meter (Make/SN#) 556 105.10 14.5 Notester (Make/SN#)	10:21	0.300	11	5.58	173	2.30	1.24.9	8.69	55.9	58-10	6.50		
1031 0.200 13 5.49 13 1.91 13.9.5 8.61 46.9 58.14 6.54 Parameter Stable (Check applicable) / / 1.80 140.0 8.67 51.9 58.14 6.54 Parameter Stable (Check applicable) / / / / / / Sample Color: Útar Sample Odor: No Sheen: No Analyses Check Applicable Comments Basic suite of analytes / / / / OCOS only + Arsenic / / / / / Other analytes. List: / / / / / / Notes: ////////////////////////////////////	1026	0.200	19	5.57	174	2.12	141.9	8.65	43.4	58.10	6-30		
IO36 0.0000 I4 56 15 1.80 I40.0 8.61 51.9 58.14 6.54 Parameter Stable (Check applicable) Image: Stample Odor: Image: Stample Odor: <td< td=""><td>1031</td><td>10,200</td><td>13</td><td>5.49</td><td>175</td><td>1 91</td><td>11395</td><td>8.67</td><td>46.9</td><td>58.14</td><td>6.54</td></td<>	1031	10,200	13	5.49	175	1 91	11395	8.67	46.9	58.14	6.54		
Construction Construction Construction Construction Construction Parameter Stable (Check applicable) Sample Odor: No Sheen: No Sample Color: Check Applicable Comments Comments Basic suite of analytes Comments Comments Comprehensive water supply suite of analytes Comments Comments VOCs only + Arsenic	11/36	(1, 125	NU	56	175	1.80	140.0	8.67	51.9	58.14	6 54		
Parameter Stable (Check applicable) / / / Sample Color: Útár Sample Odor: No Sheen: No Analytes Check Applicable Comments Basic suite of analytes X Comments Comprehensive water supply suite of analytes X Comments VOCs only + Arsenic X Comments Other analytes. List: X X Notes: X X Equipment: Pump Type Staff Multi-Parameter Meter (Make/SN#) YS 556, IDE LOT 817 Multi-Parameter Meter Calibration verified: Yes No Date/Time YIII (009:10) Filter Lot 817 Multi-Parameter Meter Calibration verified: Yes No Date/Time YIII (009:10) Filter Lot # 414:56 Turbidity Meter Calibration verified: Yes No Date/Time YIII (009:10) Filter Lot # 414:56 Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated 5.5 BCS = Balow Growed Surface No Casine NA = Not Analyzicable Page Lof 1	1000	04903	17	Dece		(100		0.01	2141	2001	0.01		
Parameter Stable (Check applicable) Sample Odor: No Sheen: No Sample Color: Check Applicable Comments Analytical Sampling Check Applicable Comments Basic suite of analytes X Comments Comprehensive water supply suite of analytes X Comments VOCs only + Arsenic X Comments Other analytes. List: X X Notes: X X Equipment: Pump Type Staff Call Multi-Parameter Meter Multi-Parameter Meter (Make/SN#) Staff Call Multi-Parameter Meter Calibration verified: Yes No Date/Time Turbidity Meter Calibration verified: Yes No Date/Time Turbidity Meter Calibration verified: Yes No Date/Time Purge Water Handling: Discharged to surface Containerized Treated (how?) Purge Water Handling: Discharged to surface Xenture of Casine Nat Andirable Pare 1 of				1		-							
Parameter Stable (Check applicable) V Sample Odor: No Sheen: No Sample Color: Clar Sample Odor: No Sheen: No Analyses Check Applicable Comments Basic suite of analytes X Comments Comprehensive water supply suite of analytes X Comments VOCs only + Arsenic X X Other analytes. List: X X Notes: X X Water Level Meter 200 S1 Multi-Parameter Meter (Make/SN#) Yes No Multi-Parameter Meter Calibration verified: X Yes No Date/Time Yes No Date/Time Turbidity Meter Calibration verified: X Yes No Date/Time Yes Od/to Filter Lot # 14.5 6 Turbidity Meter Calibration verified: X Yes No Date/Time 04.10 Silo Senerated 5.5 Purge Water Handling: Discharged to surface Xoo Casing NA = Not Applicable Pare Lof Interventer				j.	1		1 1						
Sample Color: Clear Sample Odor: No Sheen: No Analyses Check Applicable Comments Basic suite of analytes Comments Comments Comprehensive water supply suite of analytes Comments Comments VOCs only + Arsenic Comments Comments Other analytes, List: Comments Comments Notes: Comments Comments Water Level Meter State Comments Multi-Parameter Meter Calibration verified: Yes No Date/Time Turbidity Meter Calibration verified: Yes No Date/Time Turbidity Meter Calibration verified: Yes No Date/Time Turbidity Meter Calibration verified: Yes No Date/Time Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated: 5.5	Parameter Stable	(Check applic	able)		\checkmark			\vee					
Sample Cool. Other analytical Sampling Analytical Sampling Comments Basic suite of analytes X Comprehensive water supply suite of analytes X Comprehensive water supply suite of analytes X Other analytes. List: X Notes: X Equipment: Pump Type SS HUTT Cance Tubing (Type) Filter Lot # 195 Water Level Meter 300 S1 Multi-Parameter Meter Calibration verified: Yes No Date/Time Turbidity Meter (Make/SN#) La Mothe Turbidity Meter Calibration verified: Yes No Date/Time Purge Water Handling: Discharged to surface Rick: Total gallons generated: 55.5 Station verified:	Sample Color:	11 mm		d a surger of the second	Sample Odo	r Ma		Shee	<u>۱۸ 'n</u>	41			
Analytical sampling Analytical sampling Analytical sampling Comments Basic suite of analytes Comprehensive water supply suite of analytes VOCs only + Arsenic Other analytes. List: Notes: Equipment: Pump Type SS Hurri Cance Tubing (Type) Equipment: Pump Type SS Hurri Cance Water Level Meter 300 St Multi-Parameter Meter (Make/SN#) YS 55(6, 10E101 819 Multi-Parameter Meter Calibration verified: Yes No Date/Time 9/11/16 Offs:16 Turbidity Meter Calibration verified: Yes No Date/Time 9/11/16 Og:10 Filter Lot # 14/15/26 Filter Lot # 14/15/26 St St Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated: 5-5 Backs = Balow Graved Surface BTOC = Balow Top of Casing NA = Not Applicable Pare Lof Pare Lof	Sample Color.	creat			Sample Odd	100			10	0			
Alteryses Control Applicable Control Applicable Basic suite of analytes X Comprehensive water supply suite of analytes X VOCs only + Arsenic X Other analytes. List: X Notes: X Equipment: Pump Type SS Multi-Parameter Meter Multi-Parameter Meter (Make/SN#) Multi-Parameter Meter Calibration verified: Yes No Date/Time 9/11/16 Filter Lot # 1456 Yes Turbidity Meter Calibration verified: Yes No Date/Time 9/11/16 Og:10 Filter Lot # 1456 Purge Water Handling: Discharged to surface RGS = Bolow Ground Surface BTOC= Below Top of Casing NA = Not Applicable			EOF		Analyt	k Applicable			Com	ments			
Basic suite of analytes X Comprehensive water supply suite of analytes X VOCs only + Arsenic , Other analytes, List: , Notes:		Analy	383		Cileo			and a second					
Comprehensive water supply suite of analytes VOCs only + Arsenic Other analytes. List: Notes: Equipment: Pump Type SS Hurri cance Tubing (Type) Water Level Meter 300 St Multi-Parameter Meter (Make/SN#) VS: Multi-Parameter Meter Calibration verified: Yes No Date/Time 9/11/16 St: 6 Turbidity Meter Calibration verified: Yes No Date/Time Purge Water Handling: Discharged to surface RCS = Relow Ground Surface RTOC= Relow Ton of Casing NA = Not Applicable	Basic suite of analy	tes			7	<							
VOCs only + Arsenic	Comprehensive wat	ter supply suite o	t analytes										
Other analytes. List: Notes: Equipment: Pump Type SS HUTT CANC Tubing (Type) Filter used: Yes No Water Level Meter 300 St Multi-Parameter Meter Calibration verified: Yes No Date/Time Multi-Parameter Meter Calibration verified: Yes No Date/Time Turbidity Meter Calibration verified: Yes No Date/Time Turbidity Meter Calibration verified: Yes No Date/Time Purge Water Handling: Discharged to surface X Containerized Treated (how?) Total gallons generated: Sector Pare Lof RGS = Balaw Ground Surface BTOC= Belaw Top of Casing NA = Not Applicable Pare Lof	VOCs only + Arseni	c			>								
Notes: Equipment: Pump Type 55 forricanc Water Level Meter 300 S1 Multi-Parameter Meter Calibration verified: Yes No Date/Time Multi-Parameter Meter Calibration verified: Yes No Date/Time Turbidity Meter Calibration verified: Yes No Date/Time Turbidity Meter Calibration verified: Yes No Date/Time Multi-Parameter Meter Calibration verified: Yes No Date/Time Turbidity Meter Calibration verified: Yes No Date/Time Purge Water Handling: Discharged to surface RGS = Balaw Ground Surface BTOC= Belaw Top of Casing NA = Not Applicable	Other analytes. List									10-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-0-			
Equipment: Pump Type SS Hurricanc Tubing (Type) File fon (in Cit) Bailer used: Yes No Water Level Meter 300 S1 Multi-Parameter Meter (Make/SN#) YSI 556 IOE IOI 819 Multi-Parameter Meter Calibration verified: Yes No Date/Time 9/17/16 Sil6 Turbidity Meter (Make/SN#) La Mothe 3000 c N138 Filter Lot # 4456 Turbidity Meter Calibration verified: Yes No Date/Time 9/11/16 09:10 Furge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated: 5.5	Notes:												
Equipment: Pump Type SS Hurricand Tubing (Type) File Bailer used: Yes No Water Level Meter 300 S1 Multi-Parameter Meter (Make/SN#) Yes 556 IOE IOI 819 Multi-Parameter Meter Calibration verified: Yes No Date/Time 9/17/16 S16 Turbidity Meter (Make/SN#) La Mothe 2020C N128 Filter Lot # 1456 Turbidity Meter Calibration verified: Yes No Date/Time 9/11/16 09:10 Furge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated: 5.55													
Equipment: Pump Type Image: Containerized Tubing (Type) Tubing (Type) Bailer used: Containerized Yes (No Water Level Meter 300 S1 Multi-Parameter Meter (Make/SN#) 1556 IDE IOI 899 Multi-Parameter Meter Calibration verified: Yes No Date/Time 9/17/16 0816 Turbidity Meter (Make/SN#) La Motter 3000 C N128 Filter Lot # 1456 Turbidity Meter Calibration verified: Yes No Date/Time 9/11/16 09:10 Furge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated: 5.5		/	6 11	in cane			100	ſ.	. 01				
Water Level Meter 300 S1 Multi-Parameter Meter (Make/SN#) Y21 556 10E101 819 Multi-Parameter Meter Calibration verified: Yes No Date/Time 9/11/16 Visite Turbidity Meter (Make/SN#) La Molte Yes No Date/Time 9/11/16 Filter Lot # 4456 Turbidity Meter Calibration verified: Yes No Date/Time 9/11/16 O9:10 Furge Water Handling: Discharged to surface X Containerized Treated (how?) Total gallons generated: 5.5	Equipment: P	ump Type	フノ巾	JIIICAN		Tubing (*	Туре	on-I	16	Bailer used	Yes No		
Multi-Parameter Meter Calibration verified: Yes No Date/Time 9/17/16 05:16 Turbidity Meter (Make/SN#) La Molte 2020e N128 Filter Lot # 4456 Turbidity Meter Calibration verified: X Yes No Date/Time 9/17/16 09:10 Furge Water Handling: Discharged to surface X Containerized Treated (how?) Total gallons generated: BGS = Balow Ground Surface BTOC= Below Top of Casing NA = Not Applicable Page 1 of 1	Water Level Me	eter 300	- St		Multi-Parame	eter Meter (N	lake/SN#)	151	556	IDEICI 81	7		
Turbidity Meter (Make/SN#) La Motte 3000e NT38 Filter Lot # 4456 Turbidity Meter Calibration verified: X Yes No Date/Time 9/11/16 09:10 Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated: 5-5 RGS = Balaw Ground Surface BTOC= Belaw Top of Casing NA = Not Applicable Page 1 of 1	Multi-Paramete	r Meter Calib	ration veri	fied: V	es ∏No Dat	e/Time 9	17/6	(18:16				
Turbidity Meter Calibration verified: Yes No Date/Time 9/11/6 09:10 Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated: Second Surface BEOC = Below Cound Surface BTOC = Below Top of Casing NA = Not Applicable Page L of L	Turbidity Motor	(Make/SNH)	La Mo-	He In	DOC N	128	and an a start of the start of		Filt	er lot # 44	56		
Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated: BGS = Balow Ground Surface BTOC= Below Top of Casing NA = Not Applicable Page 1 of 1		(Wake/SIV#)	a alfine al 👘		Deter	9/17/	1. 1	9:11	I II				
Purge Water Handling: Discharged to surface XContainerized Treated (how?) Total gallons generated: RGS = Relow Ground Surface BTOC= Below Top of Casing NA = Not Applicable Page 1 of 1	I urbidity Meter	Calibration V	erified:		Date/Time		0	in U		tel seller a	5.5		
RGS = Relow Ground Surface RTOC = Relow Top of Casing NA = Not Applicable Page 1 of I	Purge Water H	landling: 📋	Discharge	d to surface	Containeri	zed 🛄 Trea	ated (how?)		To	tal gallons ger	ierated:		
	D.C.C	PGS = Polony Ground Surface PTOC = Below Top of Casing NA = Not Applicable Page 1 of											



Groundwater Sampling Form

			alat		Mall ID: MINTUR						
Site/Client Name:	Alaska LNG/	⊢ugro Niki	SKI		Well ID: /100-74D						
Project # : 105.00	148, <mark>160</mark> 01				Sample ID: 10193-0916						
Sampled By: 6	en Siwill	c. Se	th oli	ier	Sample	e Time: 🎜	04.12	4 Sample	e Date: 🌱 //	716	
Weather Condition	is: Clauk	au C	alm		Duplica	ite ID: 132	ann	-	1.44	and all the state	
Sampling Mathod:		Other			MS/MS		No	Trip Blank	Required N		
Sampling Method.	A LOW FIOW			Wall In	formation		A 110		required La		
	maneni 🗆 Te	mporany	- V	Vell Diameter	Z in	Screen inte	rval: 5	ffB	GS to 75	f: BGS	
Well Condition:			f fair or poor e	volain in Notes)		Stickup		n' If ves	TO t abov	e around	
				Cauging/Pur	aine Informa	tion		o, n you,	i daor	o ground	
Depth to Water (ft	BTOCI L	Sto 1	11 51	Gaugingirung	Tubina/	oump Depth	(ft. BTOC	68			
Total Depth (ft BT	OC)	8	1.63	and a second second bar	Purge S	tart Time (24	4-hr)	204			
Depth to Product (ft. BTOC)	NA			Purge E	nd Time (24	-hr)	4D			
Product Thickness	(ft)	NA			Total Pu	irge Time (m	nin) 🐴	6			
LOW FLOW: Ma	ax Draw Down reen, then use d	= (Tubing D default value	epth – Top of : of 0.3 ft.:	Screen Depth)	X 0.25 =	:(ft); if	screen inte	rval is not kno	own or water tabl	e is below top of	
Min. purge volume i	if required: pur	ge volume (g	al) = volume of	water/ft(gal)	(tt) X Water col	umn thickness	(ft)	X # of casing	volumes	= gal	
Well Diameter -	- gal/ft	1" - 0.0	041 gal/ft	2 ["] – 0.	163 gal/ft	, de la construcción de la const	4' - 0.653	gai/tt	6 – 1.4	toy gai/it	
Water Quality Parameters (Achieve stable parameters for 3 consecutive reading 4 parameters if practical leach reading taken after pumping a minimum of 1 flow through cell volume))											
(Achieve stat	pie parameters fi	or a consecu	uve reading, 4 p	Presenters of practic			pumping a	Turbidik.		Draudoum	
Time (24-hr)	Flow	Volume	(°C)	Conductance	(mg/L)	(mV)	рн	(NTU)	(ft BTOC)	(ft)	
(2111)	(liter/	(gal or		(µS/cm ^c)			1	1. 100/			
	minute)	iter	(± 3 %)	(± 3%)	(± 10%)	(= 10mV)	(20.1)	(± 10%, or <5 NTU)		(Maxft)	
1208	0.250		5.66	133	4.74	157,1	6.33	226	41.51	Ø	
iala	0750		5.61	137	389	111.0	5.94	365	41.51	Ø	
171/	0.20	5	512	130	350	017	5 94	209	41 SI	Ø	
1270	0.7	2	5.15	121	マップ	01.1	0.06	129	III ET	/X	
1220	0.7		5.01		792	67.5	0.00	-1911	71.21	0 X	
1224	0.2	1-	5.85	131	dis	56.1	6.07	167	41.21	Ø	
1228	0.3	8.5	5.87	131	2.63	53.8	6-13	18.0	41.51	Ø	
1232	0.300	9	5.89	131	2,56	53.2	6.16	30.9	41.51	Ø	
1226	0.300	10	5.94	131	2,22	58.0	6.17	23.4	41.51	Ø	
1240	0 300	11	5 41	131	2.03	56.4	10.18	10 1	416	Ø	
1.10	0,000		Salt	1.01		12-1		-1107	1-21		
D L OLL	(0)						1				
Parameter Stable	(Спеск арриса	able		<u>ν</u>	1		V				
Sample Color:	Clea	(Sample Odor:	ND		Shee	en: Na			
				Analytic	al Sampling						
	Analy	ses		Check	Applicable			Com	nents		
Basic suite of analyte	es			X	`						
Comprehensive wate	er supply suite of	f analytes									
VOCs only + Arsenic	•										
Other analytes. List:											
Notes:							-				
		2 121									
Fauinment: Di		SHUR	ricane		Tubina (1	voe) tes	lon-l'i	neb	Bailer used		
Mator Loval Mar	tor 302	St		Multi-Paramet	er Meter /M	ake/SN#)	451 55	6 100	101 899		
NAULE Description		rotion	find: The		Time 9/	16	0	8:16			
Multi-Parameter	wieter Calibi	i a Mari			78 C		0.		The In	156	
Turbidity Meter	(Make/SN#)_	L45(04	re server	- 171	91711	01	MA	Filte	er lot # <u></u>	50	
Turbidity Meter	Calibration v	erified:	🖌 Yes 🗌 No	Date/Time	11116	6	110			40	
Purge Water Ha	andling: 🔲	Discharge	d to surface	Containeriz	ed 🗌 Trea	ted (how?)		Tot	al gallons gei	nerated: <u>12</u>	
BGS =	BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable Page 1 of										

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable

B-27



Groundwater Sampling Form

Triged # 1 ds 00 H48 18001 Sample ID Alw S A - Off G Sample ID Alw S A - Off G Sample ID Alw S A - Off G Sample IV C Sample ID Alw S A - Off G Sample IV C Sample ID Alw S A - Off G Sample IV C Sample ID Alw S A - Off G Sample IV C Sample ID Sample ID Alw S A - Off G Sample IV C Other MSIMSD Yes S No Trip Blank Required: [Yes No Well Condition S Condition S Far C Poor (If at or poor ceptim in Notes) Sidue S Yes No, I'res.] [# escients Sd = Sd	Site/Client Name:	Alaska LNG/	Fugro Nikis	MW-	82A									
Sample by Ben Studied, Serth Oliver Not Studies ID: Sample by Ben Studied, Serth Oliver, Studied, Serth Studied	Project # : 105.00	148 16001					Sample	D: MW	82 4	- 0911	6			
Sampleo 19 CM During and the design of the second	Compled By Ba	A 0	V Carlo	Allines	r		Sample	Sample Time 1037 Sample Date: 9/16/16						
Vertailer Durch and D. Durch and D. Simpling Method: K. Low Flow C. Well Information Well Information Well Information Well Type: Bit Remnanen C. Tremporary Well Information Well Information Bitwork Viset M. (1995) The Blank Required: QYes No. The Blank School No. The School No. The QYes No. The Blank School No. The QYes No. The School No. The QYes No. The Computation of the Chool No. The QYes No. The Computation of the Chool No. The QYes No.	Sampleo By	1 SIMIE	4 201	1 Univer			Dupling		31	oump		0110		
Sampling Mathinot % Low Flow ↓ Cher ↓ MMSL ↓ Yes % No The Blank Medlander & Lew Flow ↓ Well Well Multifunction Well Type (% Permanent) Temporary Well Multifunction ↑ Earder Interval 1141 the BGS to 1341 the BGS Well & BGS We	Weather Condition						Duplica		71 No. 1	T-in Diant	Deguized:			
Weil Type: New Permanent Temporary Weil Diameter In Screen interval: If It BGS to If BGS Weil Condition % Good Fair Poor (ff fair or noor explain in Notes): Strow % Yes Not, if yes Table and the Strocy Yes Not, if yes<	Sampling Method:	🔀 Low Flow	Other				MS/MS		S NO	I FID Blank	Requirea: X			
Weil Digit & Ferninghen Use Lower of votes Use Lower of votes Listure & Ves				1.		Weil In	7 in	Screen inte	wat 119	f R	GS to 129	# BGS		
View Outline() Clausing/Pruging Information Gauging/Pruging Information Gauging/Pruging Information Depth to Water (III STOC) 21,11 1 Using/Pruging Information Purgs East Time (24-hr) 043.6 Depth to Water (III STOC) 21,51 Purgs East Time (24-hr) 043.6 Purgs East Time (24-hr) 043.6 Depth to Water (III STOC) NA Purgs East Time (24-hr) 043.6 Purgs East Time (24-hr) 043.6 Depth to Water (IIII STOC) NA Purgs East Time (24-hr) 043.6 Purgs East Time (24-hr) 043.6 Depth to Wate Deam Deam - 1 Choing Optim - To od Screen Depth X 2.25 =	Vveil Type: Pen		r 🗖 Poor (if	fair or poor o	avolaio	in Notes)	Notes) Stickup X Yes No: If yes 2.7 If above ground							
Depth to Water (ft 510C): 2114 Counting and the management of the transmitter of the tra	vvei Condition. A	Good E Fai		Tall of poor e	Gau	ning/Pur								
Time Depth (F BTOC): Time 2.4-m) Off 3 G Depth to Product (K BTOC): Total Purge Start Time (24-m) O G Depth to Product (K BTOC): Total Purge Time (min) O G Depth to Product Time (24-m) O G Purge Start Time (24-m) O G UNW Tower, both or definition of the other of the other of the other	Depth to Water (ft		9.14		Gau	gnigir aig	Tubing/F	Pump Depth	(ft. BTOC)	130	2			
Depth to Product (fit, ETOC) NA Purge End Time (24-hn) 10 3 C Droud Thomeses (fit) NAL Draw Down of their popt 6-more of some Depth. X 0.28 =	Total Depth (ft BT	oc): 4	5.80				Purge S	itart Time (24	l-hr) 🕐	936				
Product Thiomess (ft) NA Total Puge Time (min) Color LGW FLOW: Max Draw Down - Total Surger (The (min) Color - Total Puge Time (min) <td>Depth to Product (</td> <td>ft. BTOC) 🚺</td> <td>NA</td> <td></td> <td></td> <td></td> <td>Purge E</td> <td>nd Time (24-</td> <td>-hr) [[</td> <td>36</td> <td></td> <td></td>	Depth to Product (ft. BTOC) 🚺	NA				Purge E	nd Time (24-	-hr) [[36				
LOW FLOW: Map Draw Down = [Tubing Depth - Top of Scene Depth] X 0.5 = (tt) : r scene interval and it below top util the scene. There used itake and the scene Depth (tt) : r scene. There used itake and there used itake and there used itake and there used itake and there itake and there used itake an	Product Thickness	(ft) 🚺	JA				Total Pu	irge Time (m	in)	0		the barbara data ad		
Mn. purpe volume If required: purpe volume (gal = volume of waterit): purpet volume if waterit is a consecutive reading is consecutive reading is a consecutive reading is a consecutive read	LOW FLOW: Ma	ax Draw Down reen, then use o	= (Tubing D default value o	epth – Top of of 0.3 ft.;	Screen	Depth)	X 0.25 =	:(ft); if	screen inte	rval is not kno	own or water table	e is below top of		
Well Diameter _ galitt 1 - 0.041 galitt 2 - 0.115 galitt 4 - 0.032 galitt 0 - 1.402 galitt Name class class reading 4 parameters froatile leads reading taken after pursuing a minimum of 1 flow through cell volume] Time Flow Purge Temp Specific (myl.)	Min. purge volume	if required: pur	ge volume (g	al) = volume of	water/ft	(gal	Ift) X Water col	umn thickness	(ft)	X # of casing	volumes	= gal		
Water Quality Parameters (Achieve stable parameters for 3 consecutive reading 4 parameters for acting lack after parameters Time Flow Purge Temp Specific DO ORP pit Turbicity DTW Drawdown (24-m) Rate Oldman (5.3 %) (5.3 %) (5.1 %) (5.1 %) (5.1 %) (6.1 %) (7.1 %)	Well Diameter -	- gal/ft	1" - 0.0	041 gal/ft		$2^{*} - 0$	163 gal/m		- 0.653	jai/it	0 - 1.4	oe gawn		
Time (24-h) Flow Rate (18-1) Purge (18-1) Temp (18-1) Specific Conductance (18-1) DO (18-1) DTW (18-10) Drawdown (18-10) 0940 4460-3 2 5.27 0.155 2.82 152.2 6.56 142 29.28 0.14 0940 4460-3 2 5.27 0.155 1.62 140.0 7.38 205 29.28 0.14 0940 4460-3 2 5.18 0.155 1.62 140.0 7.38 205 29.28 0.14 0100 0.41 15.59 0.156 1.18 154.57 7.16 135 24.25 0.11 1000 0.43 13 5.31 0.156 1.11 124.8 7.55 1.22 1.52 12.3 24.25 0.11 1010 0.43 16.54 0.156 1.11 124.8 7.95 0.11 10.23 24.25 0.11 1030 0.3 14.55 5.47 0.156 0.41 104.6	(Achieve stal	nie narameters f	for 3 consecut	ive reading 4	W waramet	ater Qual ers if practi	ity Paramete	ers Ino taken after	pumping a	minimum of 1	flow through cell	volume])		
(2+h) Rate (get or minute) Volume (get or minute) (C) (get or (get or minute) Conductance (ustrom) (mg/L) (c 10W) (NTU) (REDC) (f) 09440 3 2 5.27 0.155 2.82 552.2 6.56 (H2 24.23 0.04 09440 3/440.3 2 5.27 0.155 1.62 142 24.23 0.04 0940 0.43 13 5.18 0.155 1.62 140.07 7.38 205 24.25 0.11 1000 0.43 13 5.31 0.156 1.18 134.57.76 135 24.25 0.11 1010 0.43 13 5.31 0.156 1.11 124.8 7.87 0.33 24.25 0.11 102 0.43 16 5.44 0.156 1.04 126.07.155 0.32 24.25 0.11 102 0.3 14.5 5.44 0.156 1.02 125.6 8.12 24.25 0.11 103 0.3 2.1 0.156 1.02 15.6 8.1.9 24.25 </td <td>Time</td> <td>Flow</td> <td>Purge</td> <td>Temp</td> <td>Sr</td> <td>necific</td> <td>DO</td> <td>ORP</td> <td>рН</td> <td>Turbidity</td> <td>DTW</td> <td>Drawdown</td>	Time	Flow	Purge	Temp	Sr	necific	DO	ORP	рН	Turbidity	DTW	Drawdown		
(i)erf (minule) (iii) (iii) (iiii) (iii) (iiii) (iii) (iiii) (iii) (iiii) (iiiiii) (iiii)	(24-hr)	Rate	Volume	(°C)	Conc	luctance	(mg/L)	(mV)		(NTU)	(ft BTOC)	(ft)		
(±3%) (±10%)		(liter/ minute)	(gal or	(= 3 %)	(µ	S/cm~)			(± 0.1)	(± 10%				
0940 3440 3 2 5,27 0,155 2,82 152,2 0,56 142 24,28 0,14 0145 0,28 6 5,18 0,155 1,62 140.0 7,38 205 29,23 0,04 1000 0,41 11 5,54 0,156 1,23 129,8 7,87 168 24,25 0,11 1005 0,43 13 5,31 0,156 1,18 134,57,76 135 24,25 0,11 1010 0,43 10,448,540 0,156 1,11 124,87 7,26 135 24,25 0,11 1020 0,41 18 5,44 0,156 1,14 126,074 24,25 0,11 1032 0,41 18 5,44 0,156 1,02 15,6 8,12 24,25 0,11 1032 0,4 18 5,97 0,156 0,21 15,6 8,12 24,25 0,11 1032 0,3 21 6,21 0,2 16,2 24,25 0,11 1036		, , ,	litter	(= 0 /0)	(:	= 3%)	(= 10%)	(<u></u> ± 10mV)		or <5		(Maxft)		
OI 19 Averte Solution	BAUD BO	1,123	2	577	0.	155	707	152.7	6.56	147	29.28	0.14		
1000 0.4 13 5.3 0.156 1.23 128 78/168 24.25 0.11 1005 0.43 13 5.31 0.156 1.18 134.5 7.76 135 24.25 0.11 1010 0.43 16 5.41 0.156 1.11 124.8 7.85 103.3 24.25 0.11 1017 0.43 16 5.44 0.156 1.14 124.0 7.5 0.15 8.7.2 24.25 0.11 1022 0.41 18 5.44 0.156 1.02 15.6 8.11 83.6 24.25 0.11 1032 0.41 18 5.44 0.155 0.916 102.0 8.18 8.2 24.25 0.11 1032 0.3 14.5 5.97 0.155 0.916 102.0 8.18 8.2 24.25 0.11 1033 0.3 21 6.74 104.8 8.19 64.7 24.25 0.11 1036 0.3 21 6.74 104.8 8.19 64.7	0945 T	0.70	ř	510	0	55	1 67	140 0	7.30	205	29 23	0.04		
1000 0.1 11 5.51 0.156 1.18 134.57.76 135 24.25 0.11 1010 0.43 16 5.41 0.156 1.11 124.87.25 0.33 24.23 0.04 1010 0.43 16 5.44 0.156 1.11 124.87.25 0.33 24.23 0.04 1017 0.43 16 5.44 0.156 1.14 126.07.45 87.2 29.25 0.11 1022 0.41 18 5.48 0.156 1.02 1/5.6 8.11 83.6 24.25 0.11 1032 0.3 14.5 5.91 0.155 0.96 198.08 8.18 62.3 24.25 0.11 1033 0.3 2.1 0.26 0.155 0.96 188.23 24.25 0.11 1036 0.3 2.1 0.20 1.55 0.90 108.3 8.19 64.4 24.25 0.11 1036 0.3 2.1 0.20 1.45 0.155 0.90 1.8 1.25 0.11	0170 1	0.48	11	5-10	0.1	55	177	1790	701	168	29 75	A 11		
1005 0.45 1.56 1.18 1.76 1.76 1.73 1.74 0.37 0.17 1010 0.43 1.05 5.41 0.156 1.11 1.29.8 7.85 10.33 27.23 0.01 1017 0.43 1.05 5.41 0.156 1.14 126.0 7.15 27.25 0.11 1022 0.41 1.85 5.41 0.156 0.21 15.6 8.1.8 27.25 0.11 1032 0.41 1.85 5.41 0.21 1.56 8.1.9 27.25 0.11 1032 0.41 18 5.48 0.156 0.91 108.08 8.18 62.3 29.25 0.11 1036 0.3 2.1 6.74 0.155 0.90 108 8.19 69.4 21.25 0.11 1036 0.3 2.1 6.74 0.155 0.90 108 8.19 69.4 21.25 0.11 1036 0.3 2.1 6.74 0.155 0.90 108 8.19 61.4 1.25	1000	0.17	11	5 51	0.1	26	1.0	1345	101	135	79 75	Ali		
IOIO 9.3 Jordanies 10 0.156 I.11 124.8 153 0.2 24.25 0.11 IOIT 0.43 16 5.44 0.156 I.14 126.0 145 81.2 24.25 0.11 IO 2.0.4 18 5.48 0.156 I.02 115.6 8.11 83.6 24.24 0.10 Io 3.0 0.3 14.5 5.47 0.155 0.46 108.0 8.48 24.25 0.11 Io 3.0 0.3 2.0 6.10 0.156 0.44 106.1 8.21 6.47 24.25 0.11 Io 3.6 0.3 2.1 6.34 0.155 0.40 108.8 8.19 64.7 24.25 0.11 Io 3.6 0.3 2.1 6.34 0.155 0.40 108.8 8.19 64.7 24.25 0.11 Io 3.6 0.3 2.1 6.37 2.1 6.37 2.1 6.37 2.1 6.37 2.1 5.3 0.11 3.3 2.1	1005	0.43	12 68	5.31	0.1	56	1-18	1500	1.10	1072	21-23	0.44		
1017 0.43 16 5.44 6.156 1.14 126.0 615 5.42 67.25 0.11 1022 0.41 18 5.48 0.156 1.02 115.6 8.11 83.6 24.24 0.10 1030 0.3 14.5 5.47 0.155 0.46 108.0 8.18 62.3 24.25 0.11 1036 0.3 20 6.10 0.156 0.44 106. 8.21 64.7 24.25 0.11 1036 0.3 21 6.34 0.155 0.90 108 8.19 64.7 24.25 0.11 Parameter Stable (Check applicable) 0.55 0.90 108 8.19 64.7 24.25 0.11 Parameter Stable (Check applicable) 0.55 0.90 108 8.19 64.7 24.25 0.11 Sample Color: UAA Mall Sample Odor: No Sheen: No Comprehensive water supply suite of analytes Comments State Sheen: No Sheen: No Cost of analytes	1010	0.43	10-4/2	15.90	0	56		101.8	185	102.2	51.23	0.01		
10 22 0.4 18 5.48 0.156 1.02 115.6 8.11 83.6 24.25 0.11 16 30 0.3 14.5 5.91 0.155 0.46 108.0 8.48 62.3 24.25 0.11 16 33 0.3 2.0 6.10 0.156 0.94 106.1 8.21 62.3 24.25 6.11 10 36 0.3 2.1 6.24 0.155 0.90 108.3 8.19 64.4 24.25 6.11 10 36 0.3 2.1 6.24 0.155 0.90 108.3 8.19 64.4 24.25 6.11 10 36 0.3 2.1 6.24 74.25 6.11 103.6 104.7 24.25 6.11 10 36 0.3 2.1 6.74 74.25 0.11 105.7 74.25 6.11 Parameter Stable (Check applicable Analytical Sampling Sample Odor: No No<	1017	0.43	16	5.44	O.	156	1.14	126.0	1.15	Blid	07.25	0.11		
1630 0.3 14.5 5.97 0.155 0.16 108.0 8.18 62.3 24.25 0.11 1653 0.3 20 6.10 0.156 0.94 106. 8.21 66.7 24.25 0.11 1036 0.3 21 6.24 0.155 0.90 108.8 8.19 69.4 24.25 0.11 Parameter Stable (Check applicable) 763 74.25 0.11 0.155 0.90 108.8 8.19 69.4 24.25 0.11 Parameter Stable (Check applicable) 763 74.25 0.11 0.155 0.90 108.8 8.19 69.4 24.25 0.11 Parameter Stable (Check applicable) 763 74.25 0.11 74.25 0.11 Sample Color: 14.4 16.44 74.25 0.11 74.25 0.11 Sample Color: 14.4 74.25 0.11 74.25 0.11 74.25 0.11 Sample Color: 14.4 14.44 Sample Color: No No No No No No No	1022	0.4	18	5.48	O.	156	1.02	115.6	811	83.6	29. 27	0-10		
1633 0.3 20 6.10 0.156 0.94 106 8.21 6.67 24.25 6.11 1036 0.3 21 6.24 0.155 0.90 108.2 8.19 69.4 21.25 0.11 Parameter Stable (Check applicable) 53 - - - - 0.11 Sample Color: (HA) 167.0 Sample Odor: No Sheen: -	1030	0.3	19.5	5.97	0~	155	0.96	108.0	8-18	62.3	29.25	0.(1		
1036 0.3 21 0.155 0.90 1083 8.19 0.9.4 21.25 0.11 Parameter Stable (Check applicable) 263 2	1033	0.3	20	610	0.1	56	0.94	10 Ce. 1	8.21	Gla7	29-25	Onil		
Parameter Stable (Check applicable) Vol Sample Odor: No Sheen: No Sample Color: (HA) We/Lo Sample Odor: No Sheen: No Analyses Check Applicable Comments Sheen: No Sheen: No Basic suite of analytes Comments Comments Comments Comments Basic suite of analytes Comments Comments Comments Comments Comprehensive water supply suite of analytes Comments Comments Comments Other analytes. List:	1036	0.3	21	624	0.	155	0.90	1083	8.19	69.9.4	21.25	0-11		
Sample Color: UMA WG/L Sample Odor: No Sheen: No Analytical Sampling Analytical Sampling Analyses Check Applicable Comments Basic suite of analytes Check Applicable Comments Comprehensive water supply suite of analytes Check Applicable Comments Comprehensive water supply suite of analytes Comments Comments Construction Comments Comments Comments Other analytes. List: Comments Comments Comments Notes: Comments Comments Bailer used: Yes XiNo Water Level Meter 300 - \$t Multi-Parameter Meter (Make/SN#) YSi 556 IDE IDI 899 Multi-Parameter Meter Calibration verified: Yes No Date/Time 9/16/16 08: 24 Turbidity Meter Calibration verified: Yes No Date/Time 9/16/16 04: 01 Filter Lot # L1456 Turbidity Meter Calibration verified: Yes No Date/Time 9/16/16 04: 01 Total gallons generated 11.5	Parameter Stable	(Check applic	able)	1 M	1		1	V		V				
Analytical Sampling Analytical Sampling Analytical Sampling Comments Basic suite of analytes Check Applicable Comments Comprehensive water supply suite of analytes Comments Comments VOCs only + Arsenic Comments Comments Other analytes. List: Comments Comments Notes: Comment: Pump Type SS Filter Lot # [] Yes [] No Water Level Meter 300 - \$ + Multi-Parameter Meter (Make/SN#) YSI 556 IDE IDI 899 Multi-Parameter Meter Calibration verified: X Yes [] No Date/Time 9/16/16 08:: 29 Turbidity Meter Calibration verified: X Yes [] No Date/Time 9/16/16 09:: 29 Filter Lot # [] 1456 Turbidity Meter Calibration verified: X Yes [] No Date/Time 9/16/16 09:: 29 Filter Lot # [] 1456 Turbidity Meter Calibration verified: X Yes [] No Date/Time 9/16/16 09:: 01 Total gallons generated [] 155 Purge Water Handling: Discharged to surface X Containerized Treated (how?) Total gallons generated [] 15	Cample Colori	TUAC		VIGIL	Sam	nle Odor	Ň.		Shee	эл:	10			
Analyses Check Applicable Comments Basic suite of analytes Comments Comments Comprehensive water supply suite of analytes Comments Comments VOCs only + Arsenic Comments Comments Other analytes. List: Comments Comments Notes: Tubing (Type) + teRion - (ineld Bailer used:	Sample Color.	CHAI			Jam	Anolutio	al Sampling				00			
Basic suite of analytes Comprehensive water supply suite of analytes VOCs only + Arsenic Other analytes. List: Notes: Equipment: Pump Type <u>SS</u> <u>Autri Lane</u> Tubing (Type) <u>+eQlon - linel</u> Bailer used:Yes Mo Water Level Meter <u>300 - S+</u> Multi-Parameter Meter (Make/SN#) <u>Lamotre 3030e 14738</u> Turbidity Meter (Make/SN#) <u>Lamotre 3030e 14738</u> Filter Lot # <u>L1456</u> Turbidity Meter Calibration verified: X Yes No Date/Time <u>9/16/16 09: 29</u> Filter Lot # <u>L1456</u> Turbidity Meter Calibration verified: X Yes No Date/Time <u>9/16/16 09: 01</u> Turbidity Meter Calibration verified: X Yes No Date/Time <u>9/16/16 09: 01</u> Furge Water Handling: Discharged to surface X Containerized Treated (how?) Total gallons generated: <u>11.5</u>		Analy	/ses			Check	Applicable	1		Comr	nents			
Comprehensive water supply suite of analytes Comprehensive water supply suite of analytes VOCs only + Arsenic Other analytes. List Notes: Equipment: Pump Type <u>SS Aurricane</u> Tubing (Type) <u>+eQion - lineb</u> Bailer used:Yes XiNo Water Level Meter <u>300 - \$+</u> Multi-Parameter Meter Calibration verified: X YesNo pate/Time <u>9/16/16</u> Date/Time <u>9/16/16</u> Date/Time <u>9/16/16</u> Filter Lot # <u>L1456</u> Turbidity Meter Calibration verified: X YesNo pate/Time <u>9/16/16</u> Purge Water Handling: Discharged to surface X Containerized Treated (how?) Total gallons generated: <u>11.5</u>	Basic suite of analyt					V	/							
VOCs only + Arsenic Other analytes. List: Notes: Equipment: Pump Type <u>SS</u> <u>Horricane</u> Tubing (Type) <u>Feqton - lineb</u> Bailer used:Yes Xino Water Level Meter <u>300 - S+</u> Multi-Parameter Meter (Make/SN#) <u>YSI 556</u> IDE [D] 899 Multi-Parameter Meter Calibration verified: X Yes No Date/Time <u>9/16/16</u> Turbidity Meter (Make/SN#) <u>Lamothe 3030e</u> Turbidity Meter Calibration verified: X Yes No Date/Time <u>9/16/16</u> Purge Water Handling: Discharged to surface X Containerized Treated (how?) Total gallons generated: <u>11.5</u>	Comprehensive wate	er supply suite o	of analytes											
Other analytes. List: Notes: Equipment: Pump Type <u>SS Aurricane</u> Tubing (Type) <u>teRion-lineb</u> Bailer used:Yes Xivo Water Level Meter <u>300 - \$t</u> Multi-Parameter Meter (Make/SN#) <u>YSI 556</u> IVE IDI 899 Multi-Parameter Meter Calibration verified: X Yes No Date/Time <u>9/16/16</u> Turbidity Meter (Make/SN#) <u>Lamother 3030e 14738</u> Filter Lot # <u>L1456</u> Turbidity Meter Calibration verified: X Yes No Date/Time <u>9/16/16</u> Purge Water Handling: Discharged to surface X Containerized Treated (how?) Total gallons generated: 11.5	VOCs only + Arsenia)									5- G			
Notes: Equipment: Pump Type <u>SS</u> Hurri Lane Tubing (Type) <u>feqton - linel</u> Bailer used: <u>Yes</u> No Water Level Meter <u>300 - 9 +</u> Multi-Parameter Meter (Make/SN#) <u>YSI 556</u> IDE IDI 899 Multi-Parameter Meter Calibration verified: <u>Yes</u> No Date/Time <u>9/16/16</u> <u>08: 29</u> Filter Lot # <u>11456</u> Turbidity Meter (Make/SN#) <u>Lemostre 3030e</u> <u>14738</u> Filter Lot # <u>11456</u> Purge Water Handling: <u>Discharged to surface</u> Containerized <u>Treated (how?)</u> Total gallons generated Multi-Station Verified: <u>No pate/Time 9/16/16</u> <u>09:01</u>	Other analytes. List:				-							.*		
Equipment: Pump Type <u>65 Hurri Lane</u> Tubing (Type) <u>FeRion-linel</u> Bailer used: Yes XNo Water Level Meter <u>300 - £+</u> Multi-Parameter Meter (Make/SN#) <u>105 101899</u> Bailer used: Yes XNo Multi-Parameter Meter Calibration verified: Yes No Date/Time <u>9/16/16</u> 08: 29 Filter Lot # <u>11456</u> Turbidity Meter (Make/SN#) <u>Lolmottle 2030e</u> 14728 Filter Lot # <u>11456</u> Purge Water Handling: Discharged to surface X Containerized Treated (how?) Total gallons generated 11.5	Notes:													
Equipment: Pump Type <u>SS</u> Hurri Lane Tubing (Type) <u>feqton-lined</u> Bailer used: Yes Xho Water Level Meter <u>300 - \$+</u> Multi-Parameter Meter (Make/SN#) <u>YSI 556</u> 10E101899 Multi-Parameter Meter Calibration verified: Yes No Date/Time <u>9/16/16</u> 08:29 Filter Lot # <u>L1456</u> Turbidity Meter (Make/SN#) <u>Lemothe 3030e</u> 14738 Filter Lot # <u>L1456</u> Turbidity Meter Calibration verified: Yes No Date/Time <u>9/16/16</u> 09:01 Filter Lot # <u>L1456</u> Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated 11.5					Ŷ.									
Equipment: Pump Type 55 Horri Lane Tubing (Type) FERTOR TINE Bailer used: I Yes Xino Water Level Meter 300 - \$+ Multi-Parameter Meter (Make/SN#) Y51 556 IDE IDI 899 Multi-Parameter Meter Calibration verified: Yes No Date/Time 9/16/16 08: 29 Turbidity Meter (Make/SN#) Lemothe 30302 14738 Filter Lot # 11456 Turbidity Meter Calibration verified: Xi Yes No Date/Time 9/16/16 09: 01 Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated		<i>c</i>	0.11		Ĩ			1.00	0.	al		1		
Water Level Meter 300 - \$+ Multi-Parameter Meter (Make/SN#) 151 556 10E 101 8 79 Multi-Parameter Meter Calibration verified: Yes No Date/Time 9/16/16 08: 29 Turbidity Meter (Make/SN#) Lolmotte 3030e 14738 Filter Lot # 11456 Turbidity Meter Calibration verified: Yes No Date/Time 9/16/16 09:01 Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated: Its of Containerized Total gallons generated:	Equipment: Pu		> Hum	Lane			Tubing (1	Type) tex	101-11	10.0	Bailer used:	🗌 Yes 🕅 No		
Multi-Parameter Meter Calibration verified: Yes No Date/Time 1/16/16 08:24 Turbidity Meter (Make/SN#) Lemette 2020e 14728 Turbidity Meter Calibration verified: X Yes No Date/Time 9/16/16 04:01 Filter Lot # L1456 Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated: 11.5	Water Level Me	ter 300 - S	<u>;+</u>		Multi	-Parame	ter Meter (N	lake/SN#)_	151 550	" IDE IC	21017			
Turbidity Meter (Make/SN#) Lamothe 3030e 14738 Filter Lot # L1456 Turbidity Meter Calibration verified: X Yes No Date/Time 9/16/16 04:01 Total gallons generated: Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated: 11.5	Multi-Parameter	Meter Calib	oration veri	fied: 💢 Y	es 🔲	lo Date	/Time_1/1	6/16	08:2	9		151		
Turbidity Meter Calibration verified: X Yes No Date/Time 9/16/16 01-01 Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated:	Turbidity Meter	(Make/SN#)	Loimotte	2 2020e	. 14	728				Filt	er Lot #	156		
Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated	Turbidity Meter	Calibration v	verified: 🔰	Yes N	o Dat	e/Time_	916/16	0 09:	01	the state of the second		11 -		
Dog The Country DTOC-Dalay Transformer NA - Not Applicable Data Lof	Purge Water H	andling: 📋	Discharge	d to surface	Xco	ntaineriz	ed 🗌 Trea	ated (how?)		To	tal gallons ger	nerated:		
The second s							- 51-4 6 - 11 - 1				nel of			

BGS = Below Ground Surface, BTOC= Below Top of Casing. NA = Not Applicable



Groundwater Sampling Form

Site/Client Name: Alaska LNG/Fugro Nikiski	Well ID: MW- 82B									
Project # : 105.00148.16001	Sample ID: MW82B-0916									
Sampled By: Bon Siwice, Serh Oliver	Sample Time: [33] Sample Date: 9/16/16									
Weather Conditions: Rain Showers	Duplicate ID:									
Sampling Method: K Low Flow Other	MS/MSD 🗌 Yes 🚺 No 🛛 Trip Blank Required: 🕊 Yes 🗌 No									
Well in	formation									
Well Type: Permanent 🗌 Temporary Well Diameter	in. Screen interval: 15 ft BGS to 15 ft BGS									
Well Condition: SGood 🗍 Fair 🗌 Poor (if fair or poor explain in Notes)	Stickup X Yes No: If yes, 2 10 It above ground									
Gauging/Pur	Tubing/Pump Depth (ft. BTOC): 33									
Total Depth (fl BTOC): 52.40	Purge Start Time (24-hr)									
Depth to Product (ft. BTOC) N/A	Purge End Time (24-hr) 330									
Product Thickness (ft)	Total Purge Time (min) 33									
LOW FLOW: Max Draw Down = (Tubing Depth - Top of Screen Depth) X 0.25 =(n); it screen interval is not known of Water table screen, then use default value of 0.3 ft.										
Min. purge volume if required: purge volume (gal) = volume of water/ft(gal	(ft) X Water column thickness (ft) X # of casing volumes = gal									
Well Diameter - gal/ft 1" - 0.041 gal/ft 2" - 0	163 gal/π 6 – 1,469 gal/π 6 – 1,469 gal/π									
Water Qua (Achieve stable parameters for 3 consecutive reading, 4 parameters if practi	ity Parameters cal [each reading taken after pumping a minimum of 1 flow through cell volume])									
Time Flow Purge Temp Specific	DO ORP pH Turbidity DTW Drawdown									
(24-hr) Rate Volume (°C) Conductance	(mg/L) (mV) (NTU) (ft BTOC) (ft)									
minute) (± 3 %)	(± 0.1) $(\pm 10\%)$									
1303 0,400 (± 3%)	(± 10%) (± 10mV) 01 <5 (Miax_1) NTU)									
1303 0.400 1 6.38 171	00 8.74 146.8 5.73 158 23.36 0									
1306 0.400 2 6.72 178	8.41 149.0 5.65 145 23.36 0									
1309 0,400 3 7,04 188	8.00 145.7 5.69 131 23.36 0									
1312 0.400 4 7.13 194	7.81 142.9 5.71 122 23.36 0									
1315 0.400 6 7.21 200	7.64 140.5 5.74 80.4 23.35 0.02									
1318 0.400 7 7.22 204	7.48 140.3 5.70 65.5 23.35 0.01									
1321 0.400 9 7.25 207	7.31 140-4 5.70 39.3 33.35 0.01									
1224 0,400 10 7,74 210	7.17 139.9 5.71 28.2 23.35 0.01									
1227 0-400 11 730 209	6-96 138.4 5.71 20.0 23.35 0.01									
1330 0,400 17 7,32 209	6.76 361 5.74 4.5 23.35 0.01									
Parameter Stable (Check applicable)										
Sample Color: Sample Odor	None Sheen: No									
Analytic	al Sampling									
Analyses Chec	Applicable Comments									
Basic suite of analytes	6									
Comprehensive water supply suite of analytes										
VOCs only + Arsenic										
Other analytes. List:	Sector Concerns									
Notes: Water very Turbid and iron - reddish at	Notes: water very Turbid and Iron - reddish at flust. Cleared after purge.									
, and the second s										
Equipment: Pump Type SS Hurricana	Tubing (Type) teflon-line d Bailer used: Yes Dro									
Water Level Meter 300- St Multi-Parame	ter Meter (Make/SN#) YSI 556 10E101 899									
Multi-Parameter Meter Calibration verified: X Yes No. Date	Time 9/6/6 08:29									
Turbidity Meter (Make/SN#) La Mothe 2020C 14	128 Filter Lot # 1456									
Turbidity Meter Calibration verified: X Yes No Date/Time	9/6/6 09:01									
Purge Water Handling: Discharged to surface Montaineria	red Treated (how?) Total gallons generated:									

BGS = Below Ground Surface, BTOC= Below Top of Casing. NA = Not Applicable

Page 1 of



Site/Client Name:	ite/Client Name: Alaska LNG/Fugro Nikiski Well ID: MW-87											
Project # : 105.001	48.16001				Sample	ID MW	87B-	0916		1		
Sampled By: 3	n Simil	c/Se	th dive	ex	Sample	Time:	51 D	Sample	Date: 1/1	2/16		
Weather Conditions	Partl	4 66	ida		Duplicat	te ID: M	W87	2-0	916			
Sampling Method:	i ow Flow	Other	·)		MS/MS	D TYes	No 1	rip Blank F	Required: 🕅	es 🗌 No		
Sampling Method.				Well in	formation		-					
Well Type: 😒 Perm	nanent 🗌 Te	emporary	W	eli Diameter	2in.	Screen Inte	rval: 25	ft BC	3S to 45	ft BGS		
Well Condition: 🔀	Good 🗌 Fai	r 🗋 Poor (if	fair or poor e	xplain in Notes)		Stickup 🔀	Yes 🗌 No	; If yes, 📿	67 ft above	ground		
				Gauging/Pur	g/Purging Information							
Depth to Water (ft E	3TOC): 3(2.24			Tubing/Pump Depth (ft. BTOC) 38							
Total Depth (ft BTC		AIA O			Purge End Time (24-hr)							
Product Thickness	(ff)	NIA			Total Purge Time (min) 31							
LOW FLOW: Ma	x Draw Down	= (Tubing D	epth - Top of S	creen Depth)	X 0.25 =	(ft); if	screen inter	val is riot kno	wn or water table	is below top of		
Min. purge volume if	required pur	ge volume (gi	al) = volume of v	water/ft(gal	/ft) X Water colu 163 gal/ft	umn thickness	(ft) 4' - 0.653 c	X # of casing	volumes6' 1.46	gal gal/ft		
weil Diameter -	gaint	1 - 0.0	-i gaint	Water Oual	ity Paramete	rs	0.000 5					
(Achieve stab	ie parameters i	for 3 consecut	ive reading, 4 p	arameters if practi	cal [each readi	ng taken after	pumping a	minimum of 1	flow through cell y	rolume])		
Time	Flow	Purge	Temp	Specific	DO	ORP	pН	Turbidity	DTW	Drawdown		
(24-hr)	Rate	Volume (gal_or	(°C)	Conductance (µS/cm ⁶)	(mg/L)	(mv)		(010)	(ILBIUC)	(14)		
	minute)	litter	(± 3 %)	(,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,	(400()	(1.40-1)))	(± 0,1)	(± 10%.		(Max ff)		
		0		(± 3%)	(± 10%)	(± 10mV)		NTU)	0.0.0.1	(114,,))		
1437	250	.5	8.69	175	5.31	43.6	5.92	122	30.24	0		
1441	250	1.0	8.40	176	4.98	34.2	5.56	122	30.24	0		
1445	250	1.5	8.46	175	4.49	27.0	5.39	143	30.24	0		
1449	250	2.0	8.56	176	3.85	23.3	5:39	126	30.24	0		
14 53	250	2.0	4.58	175	3.62	20.2	5.44	120	30.24	0		
1454	250	40	8.29	175	3.25	18.)	5.47	90.0	30.24	Ö		
1500	250	45	6.45	IIC	2.98	12.5	5.57	90.2	30.24	6		
1505	250	50	891	175	2.61	10.8	5.6)	85.5	30.24	Ø		
150g	250	22	0.90	175	2.94	1.5	13-61	52.1	20.24	O		
501	200	7-7	8/11	110	0.1	1-5	1	01				
Baramotor Stable	Check applic	able)	1	1	1	1						
Farameter Stable					-	L		A 1	la succession of the second			
Sample Color:	ale	av		Sample Odor	No		Snee	en: 10	6			
	Anali			Analytic	al Sampling			Comm	nents			
	Anar	yses			Аррисанс				611X-000-000-000-000-0			
Basic suite of analyte	s	of analytes			<u> </u>							
VOCs only + Arsenic	er supply suite c						<u></u>					
Other analytes List;							100-11					
Notes												
inotes:												
	AC II is a feature to the											
Equipment: Pu	Imp_Type	22 H	Urricant	<u> </u>	Tubing (1	ype) <u>tex</u>	Ion-Inc	6	Bailer used:	_] Yes XINo		
Water Level Met	ter 300-	->+		Multi-Parame	ter Meter (N	ake/SN#)_	151 5	26	10= 101871			
Multi-Parameter	Meter Calib	pration veri	fied: 🔀 Ye	es 🗌 No Date	Time 1/1	8/16	03:2	د	1 (1)	-1		
Turbidity Meter	(Make/SN#)	Lamo	the 200	10e 19	728			Filte	er Lot #	26		
Turbidity Meter	Calibration	verified:	🗙 Yes 🗌 No	Date/Time_	9/18/11	08	-36	With the local data		3.5		
Purge Water Ha	andling: 🗌	Discharge	ed to surface		zed 🗌 Trea	ted (how?)		Tot	al gallons gen	erated.		
BGS =	BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable Page 1 of											



Groundwater Sampling Form

Site/Client Name: Alaska LNG/Fugro Nikiski		Well ID: MW-91A									
Project # : 105.00148.16001	6	Sample	ID: MU	1911-	- 0916	2					
Sampled By: Ren Suber Seth Oliver	ason Gory	Sample Time: 1800 Sample Date: 9/22/16									
Weather Conditions Clarky WINLY	- Per Cary	Duplica	te ID:				×.				
Sampling Method N Low Flow Other		MS/MS	D 🗌 Yes 🕽	XN0	Frip Blank I	Required: 🔀	Yes 🗌 No				
	Well Inf	Information 120 120									
Well Type Permanent Temporary W	/ell Diameter 📿	in.	Screen Inte	rval: <u>"</u>	ft Bo	GS to 157	ft BGS				
Well Condition: 🔀 Good 🔲 Fair 🔲 Poor (if fair or poor e	xplain in Notes)		Stickup X	Yes 📙 No	i: If yes, 🔏	33_ft above	e grouno				
5 11 MIL (15700) 1079/	Gauging/Purg	ng/Purging Information									
Total Depth (ft BTOC):		Purge Start Time (24-hr) 15/65 78 4/52/16 (7/10)									
Depth to Product (ft. BTOC)		Purge E	nd Time (24	-hr)	159						
Product Thickness (ft)		Total Pu	irge Time (m	in)	49		a in holow top of				
LOW FLOW: Max Draw Down = (Tubing Depth - Top of S screen, then use default value of 0.3 ft.	Screen Depth)	X 0.25 =	(ft); if	screen inter	rval is not kno	own or water tabl	e is below top of				
Min. purge volume if required: purge volume (gal) = volume of	water/ft(gal/	ft) X Water col	umn thickness	(ft)	X # of casing	volumes	= gal 69 gal/ft				
Well Diameter – gal/ft 1" – 0.041 gal/ft	2"-0.	163 gai/n		- 0.055	Javit	0 1.4	gurn				
Water Quality Parameters (Achieve stable parameters for 3 consecutive reading, 4 parameters if practical [each reading taken after pumping a minimum of 1 flow through cell volume])											
Time Flow Purge Temp	Specific	DO	ORP	рН	Turbidity	DTW	Drawdown				
(24-hr) Rate (°C)	Conductance	(mg/L)	(m\/)		(NTU)	(ft BTOC)	(ft)				
minute) (± 3 %)	(µusiani)		(10 N	(± 0.1)	(± 10%,		(Max ff)				
	(± 3%)	(± 10%)	(± 10mV)		NTU)	1 0 01					
1726 0 400 12 6.35	227	3.36	14.4	6-80	142	102.91	-0.04				
1731 0.400 2.0 6.90	227	3.04	6.4	6.89	112	102.91	50.04				
1736 0,400 3.0 7.67	227	2.71	-3.5	6.96	102.7	102.91	-0.07				
1741 0.400 3.5 8.21	228	2,45	-10.1	7.00	76.6	102.91	-0.04				
1746 0,400 4.0 8.54	227	2.19	-16.1	7.03	58.6	102.91	~ 0.04				
1751 0.400 4.5 8.76	227	1.85	- 22.6	7.05	48.8	102.91	~ 0.0M				
1755 0.400 5.0 8.85	228	1.76	-26.5	7.07	35.5	102.91	-0.04				
159 .400 5.5 8.95	929	1-70	-24.7	7.08	27.1	102.91	-0.04				
· · · · · /	1	1	/	1							
Parameter Stable (Check applicable)	~	\sim	-	1		1					
Sample Color: (LP cu/	Sample Odor:	N	0	She	en: 💦)0					
00.	Analytic	al Sampling)		****						
Analyses	Check	Applicable		A	Com	ments					
Basic suite of analytes		\times			_	and the later of the second second					
Comprehensive water supply suite of analytes											
VOCs only + Arsenic											
Uther analytes. List.	0 0/22/16	5 0	allans 10	ere P	urac d.	from thi	Swell				
Notes: 1 gallons toral porgea o	WEFINA.	5 9.		5151	1911 V - 1920	.88	Contraction and Ma				
On 912V16 Detaie poup ing				<u>.</u>	× . (
Equipment: Pump Type Grundfos Redific	, え	Tubing (Type) te	Hon-1	ined	Bailer used	Yes XNo				
Water Level Meter 300-St	Multi-Parame	ter Meter ()	lake/SN#)	YS15	56 10	DE 101 89	/				
Multi-Parameter Meter Calibration verified: 🔀 Y	es No Date	Time 9/	12/16	08:3	0		1-0				
Turbidity Meter (Make/SN#) La Mothe 20	220e 1	4128			Filt	ter Lot # <u>L</u>	156				
Turbidity Meter Calibration verified: Xes IN	o Date/Time_	9/2	016	09-	00		17				
Purge Water Handling: Discharged to surface Containerized Treated (how?) Total gallons generated:											

BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable



9/21/16

Site/Client Name:	Alaska LNG	S/Fugro Niki	ski		Well ID: MW 9/A						
Project # : 105.00	148.16001				Sample	e ID: 🛁					
Sampled By: 3	un Sind	er Sp.	th Bli	ver	Sample	Sample Time Sample Date:					
Weather Condition	s. Cloud	y, rain	Shewers	-	Duplica	ate ID: 🚽					
Sampling Method:	Low Flov	v 🗌 Other			MS/MS	D T Yes	XNo	Trip Blank	Required: 🕅	Yes 🗌 No	
	C			Well	nformation						
Well Type: 🕅 Perr	nanent 🗌 T	emporary	V	Vell Diameter	<u> </u>	Screen Inte	erval:	ft B	GS to 139	ft BGS	
Well Condition: 🚺	Good 🗌 Fa	ir 🗌 Poor (i	fair or poor e	explain in Notes)		Stickup 🔀	Yes 🗌 N	a: If yes,	ft above	e ground	
Denth to Minter (6.)	BTOON DE	S grav	6	Gauging/Pu	ging Informa	ation	(A DTOO)	177	e		
Total Depth to Water (T		02013	. 107.	88	Purge 9	Pump Depth Start Time (2)	(IL BIOC	11000	12 10 17	30	
Depth to Product (1	L BTOC)	NA			Purge E	nd Time (24	-hr)	11-0001	ZXAG 10	0	
Product Thickness	(ft)	NX			Total Pu	urge Time (n	(חור				
LOW FLOW: Ma sc	ax Draw Down	n = (Tubing D default value o	epth – Top of of 0.3 ft.;	Screen Depth)	X 0.25 =	^ی (ft)، if	screen inte	rval is not kno	own or water table	e is below top of	
Min. purge volume i	f required: pu	irge volume (gi	al) = volume of	water/ft(ga	I/ft) X Water co	lumn thicknes	6(ft)	X # of casing	volumes	= gai	
vveli Diametei -	- gant 1	1 - 0.0		2 - U	lity Dommet		4 - 0.055	ualint	0 - 1,4	og gann	
(Achieve stab	le parameters	for 3 consecul	ive reading, 4	parameters if pract	ical [each read	ing taken after	pumping a	minimum of 1	flow through cell	volume])	
Time	Flow	Purge	Temp	Specific	DO	ORP	pН	Turbidity	DTW	Drawdown	
(24-hr)	Rate (liter/	(gal or	(°C)	Conductance (μS/cm [°])	(mg/L)	(mV)		(NTU)	(# BTOC)	(π)	
minute) (± 3 %) (± 2 %) (± 10%) <t< td=""></t<>											
			0.0	(± 5%)	(_ 10%)	GIL D	1	NTU)		(Max(t)	
1645 400 6.70 225 1.92 07.0 6.56 204 102.95											
1654	-400		6.12	226	9.97	68.5	6.44	CORDE	102.95		
1706	0400		6.40	227	1.29	28.8	6.96	100-95	102.95		
1710	- 400		7.60	925	1.18	21.2	6-99	154	102.95		
1714	.400	12	7.65	226	1.15	18-1	7.01	157	102.95		
1719	- 400	13	7.54	227	1.18	14.9	7.01	133			
1723	-400	14	7-31	227	1.10	17.1	6.43	122			
1728	Pum	D Ste	poeb u	Jotking ?	batteri	> failt	eb.				
	M			1		7			-		
	VO	Samp	ik co	lected (on q	12/1	16				
Parameter Stable (Check applic	cable)				τ.	191				
Sample Color:				Sample Odor:			Shee	HII:			
				Analytic	al Sampling						
	Analy	yses	~	Check	Applicable			Comm	nents		
Basic suite of analyte	5	/	-			1					
Comprehensive wate	r supply suite o	of analytes									
VOCs only + Arsenic	/			-							
Other analytes. List:											
Notes: 5 ga	generati	ed on v	9/2/16	1							
	<	< IL	rilan a			1-C	Ima-l'in	ed			
Equipment: Pu	mp Type	CL TO	Turnet		_ Tubing (T	ype)	ISI E	to to	Bailer used	🛛 Yes 🕅 No	
VVater Level Met	er	11		Multi-Paramet	ter Meter (M	ake/SN#)	ACT	5	I L IOU VEJ		
Multi-Parameter	Meter Calib	pration verif	IEd: LXYE	es LINo Date	11me_1/0	10	05.0	2	TIL	156	
Urbidity Meter (iviake/SN#)	na ric	VI- CH	Deter	a/2	11	B8-71	Filte	er Lot # 🛰 🐂	-0	
Lurdiality Meter C	alibration v			Containaria		tod (how?)	00 20	Tot		oratod:	
Furge water Ha	inunny: 📋	Discharge	a to surrace	Acontainenz		ieu (now?)			ar ganons gen		
BGS = F	BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable Page 1 of										

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SL	_R 🏶	N	G	16-I roundwater	Dec-16	ing Forn	n					
Site/Client Name:	Alaska LNG	/Fugro Nikis	ski	and the second secon	Weli ID	: MW-	-138F	3				
Project # : 105.00	148,16001				Sample	D: Mh	1/38P	- 0416	1			
Sampled By: B	en Si	uner /	Setto	Bluer	Sample	Time: 10	25	Sampl	e Date 9/2	21/16		
Weather Condition	Is Raus	ala	JUNES	Once	Duplicate ID:							
Campling Mathed			wer		MS/MSD Ves No Trip Blank Required: WYes No							
Sampling Method				Well inf	ormation	rmation						
Well Type: Per	manent 🗌 Te	emporary	V	Vell Diameter	in.	in. Screen Interval: 4 ft BGS to 38 2 ft BGS						
Well Condition:	Good 🗆 Fai	ir 🔲 Poor (if	fair or poor e	explain in Notes)	Stickup > Yes No: If yes 2,5 ft above ground							
		-		Gauging/Purg	ing Informa	tion		20				
Depth to Water (ft	BTOC):	3.50			Tubing/	Pump Depth	(ft. BTOC)	2.70	1. (
Depth to Product ((H BTOC)	2074			Purge 5	nd Time (24	-hr) (O	24				
Product Thickness	s (ft)	N.A			Total PL	irge Time (m	in) 47	Ĩ				
LOW FLOW: M	ax Draw Down creen, then use	≓ (Tubing D default value o	epth – Top of of 0.3 ft.;	Screen Depth)	X 0.25 =	(ft). if	screen inter	val is not kno	own or water table	is below top of		
Min. purge volume	if required: pur	rge volume (ga	al) = volume of	water/ft(gal/f	t) X Water col	umn thickness	(ft)	X # of casing	volumes	= gai 69 gal/ft		
Well Diameter	- gai/it	· · · · ·	14 I gal/it	Water Quali	ty Paramete	ore	- 0.000	iden.				
(Achieve sta	ble parameters t	for 3 consecut	ive reading, 4	parameters if practic	al [each read	ing taken after	pumping a	minimum of 1	I flow through cell	volume])		
Time (24-hr)	Flow Rate	Purge Volume	Temp (°C)	Specific Conductance	DO (mg/L)	ORP (mV)	pН	Turbidity (NTU)	DTW (ft BTOC)	Drawdown (ft)		
	minute)	liter P.89/2VI/	(± 3 %)	(± 3%)	(± 10%)	(± 10mV)	(± 0.1)	(± 10%, or <5 N⊤U)	23.52	(Max_ft)		
0949	0 30	2.3	4.98	0063	4.30	172.3	4.57	289	73.57	0.07		
CRSH	0.34	5	5.03	63	3.94	173.8	4.61	170	23,52	0.02		
MEG	0 32	65	506	63	371	173.4	4.64	123	2352	0.02		
1004	0.37	8	570	63	351	170.3	472	111	23.52	0-02		
1009	627	as	517	63	243	170.2	4.7.3	816	2352	0.02		
1001	0.32	IT	521	63	3.25	107.8	480	78.6	23.52	0.02		
I DI U	A 27	175	517	63	311	167.3	483	671	23.52	0-07		
1624	0-27	12.2	513	62	297	1197	487	601	23.52	0.02		
1027	0.52	14	21)	0)	0. []	161.0	1.00					
			1		ļ		1					
Parameter Stable	(Check applic	cable)		\checkmark								
Sample Color:	It brown	n/ beio	K	Sample Odor:	N	0	Shee	in: 100				
			0	Analytic	al Sampling							
	Analy	yses		Check	Applicable			Comr	nents			
Basic suite of analy	tes				/							
Comprehensive wat	ter supply suite o	of analytes		/					1			
Other erabiter List	с											
Other anarytes, List.												
Notes:												
Equipment: P	Tubiog (Type) teston-lined Bailer used: Types The											
Water Level Ma	ter 300-	-ST		Multi-Paramete	er Meter (N	Aake/SN#)	15155	56 105	101899			
Multi-Paramete	r Meter Calib	oration veri	fied: 🗹 Y	es No Date/	Time 9/2	NG 02	3-05			(a.		
Turbidity Meter	(Make/SN#)	La Me	the 71	070e 1470	23			Filt	er Lot # 414	56		
Turbidity Meter	Calibration	verified I	Yes DN	o Date/Time	2/2V16	08	1=20		CC-MILL			
Purge Water H	landling:	Discharge	d to surface		ed 🔲 Trea	ated (how?)		То	tal gallons ger	herated:		
PCS -	PGS - Below Ground Surface BTOC= Below Top of Casing NA = Not Applicable Page 1 of											



	ite/Client Name: Nikiski, AK Well ID: MW-138 3												
Site/Client Name: I	NIKISKI, AK				well IL	MU	130	12 29	10				
Project # : Water Qu	uality Monitor	ring (WQM)	, AK LNG		Sample								
Sampled By: 30	1 Siwin	ec, S	oth C	liver	Sample	Sample Time: 07 50 Sample Date: 1/25/16							
Weather Conditions	Partlu	1 Clou	24		Duplica	ate ID: 🛸		<					
Sampling Method:	Low Flow	Other_	12	14	MS/MS	MS/MSD I Yes No Trip Blank Required: Yes No							
Silling Press and	and the second second	salves" a		Well I	nformation	mation							
Well Type: 🔼 Perm	anent 🔲 Te	emporary	V	Vell Diameter	<mark>7</mark> in.	Screen Inte	erval: 🤽	<u>7</u> ft B	GS to 38.2	ft BGS			
Well Condition: 🗹	Good 🗌 Fai	ir 🗌 Poor (i	f fair or poor e	explain in Notes)		Stickup 🖄	Yes 🗌 N	o; If yes, 🗾	7.5_ft abov	e ground			
DECOLOMICS F/A	Same L.	i dinawali		Gauging/Pu	ging Information	ation	1281,569	Sub dian	The Parts	and the second			
Depth to Water (ft B	3TOC): 📿	3.39			Tubing/	Pump Depth	(ft. BTOC)	: 30					
Total Depth (ft BTC	DC): 4	5.32			Purge S	Start Time (2	4-hr) ()	857					
Depth to Product (ft	BTOC)	NA			Purge	End Time (24	hr)	25					
Product Thickness ((ft)	NA	-		I otal Pi	urge lime (n	nin) 0	28		a ia halaw taa af			
LOW FLOW: Max scre	x Draw Down een, then use o	e (Tubing D) = default value (of 0.3 ft.;	Screen Depth)	X 0.25 =	=(ft); II	screen inte	rval is not kno	own or water tabl	e is below top of			
Min. purge volume if	required: pur	ge volume (g	al) = volume of	water/ft(ga	l/ft) X Water co	lumn thicknes	s(ft)	X # of casing	volumes	=gal			
Well Diameter –	gal/ft	1" – 0.0	041 gal/ft	2"-0).163 gal/ft	QL3	4' - 0.653	gal/ft	6' – 1.4	69 gal/ft			
			N.	Water Qua	lity Paramet	ers		minimum of a	Anu through1	(uniumo))			
(Achieve stable	e parameters f	for 3 consecut	tive reading, 4	parameters if pract	ical leach read	ing taken after	pumping a	minimum of 1	now through cel	voiumej)			
Time (24-hr)	Flow Rate	Purge Volume	Temp (°C)	Specific Conductance (μS/cm ^c)	(mg/L)	(mV)	рH	(NTU)	(ft BTOC)	(ft)			
		(Maxft)											
(90)	315	1	4.52	84	6.71	121.9	6.05	278	23.41	.02			
0905	.375	2.5	4.83	81	5.39	1130	5.51	756	23.41	.02			
0909	315	16.10	Ena	75	5 21	91.2	551	195	23.41	02			
0112	200	2.0	5 72	-11	= 22	954	5.51	IUN	23.1	02			
0115	200	2.5	0.90		Dirak	nul .	5.00	110	a J.41	·Ua			
0414	0000		2.96	68	5.10	44.0	5.75	R Y	25.91	·01.			
0921	. 7%	9.5	5.28	64	5.00	99.0	3.31	36.0	23.4	0-02			
0925	· 325	11.0	5.27	60	5-01	100.5	5.35	78-8	23.41	-07			
	10		-			1.1							
Baramatar Stable //	Chook applia	(abla)	1	./	1	1	1			· · · · · · · · · · · · · · · · · · ·			
Faranielei Stable (V			\vee			1				
Sample Color:	brwn	beigh	C	Sample Odor	: Nö	_	Shee	en: 八	10				
				Analyti	cal Sampling	L.,							
	Analy	ses		Chec	k Applicable			Comn	nents				
WQM Method Stateme	ent Table 2: Ge	eneral Ground	dwater Quality	Suite									
WQM Method Stateme	ent Table 3: W	ater Supply (Quality Suite			4							
Fecal L	dition	1 only	1		X								
Notes CI	0			C 4				110					
Notes: JN15	15 a	re-5av	mpi-e o	F MW-139	13. 41	wes al	SO SAM	pre to	rthe				
Comprehens	sive gro	und wate	er/drinki	ng water	suite a	$n \gamma/\lambda$	MG.						
1													
Equipment: Dump	Type 55	HUNTICAN	e	Tubing (1	where the state	teston-	Impl	Bailor Tu	No	· ·			
Water Level Mater	ZONS	4		Multi-Daras	percengui)	Aake/SNHA Y	51 551		849 Cal	9/23/1/08:00			
Turbidity Meter (Ma	ke/SN#) La	Mottle -	ande	14128 0	al: 9/23/	16008	50 =	ilter Lot #	NA	and the state of the			
a biolog wotor gwa			4000			20-0				2			
Purge Water Hand	Purge Water Handling: Discharged to surface Containerized Treated (how?)												
BGS = B	elow Ground	Surface, BTO	DC= Below To	op of Casing, NA =	= Not Applicat	ole		Pa	ge 1 of				

SLR Groundwater Sampling Form												
Site/Client Name:	Alaska LNG	/Fugro Niki	ski		Well IC): OW	- 1		-			
Project # : 105.001	48,16001				Sample	e ID: 💍	U-1-	0916				
Sampled By: 30	n Siu	NAC, SC	th of	iver	Sample	e Time:	119	Sampl	e Date: 🛛 🚺	122/16		
Weather Condition	s: Rair)			Duplica	ate ID. 🥣				1		
Sampling Method:	Low Flow	Other_			MS/MS	SD 🗌 Yes	X No	Trip Blank	Required X	Yes 🗌 No		
				Well in	formation					police in the		
Well Type: Pern	nanent 🔲 Te	emporary	V	Vell Diameter	2 in.	Screen Inte	erval: 56	ft B	GS to _/Ca	ft BGS		
Well Condition: 🔀	Good 🗌 Fa	ir 🗌 Poor (i	f fair or poor e	explain in Notes)	Notes) Stickup X Yes 🗋 No: If yes. 🔀 5 ft above ground							
Depth to Mistor /fill		FID	1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 - 1911 -	Gauging/Purg	Tubing	Pump Depth	A BTOC	00				
Total Depth (ft BT)		32.40			Purge S	Start Time (2)	4-hr)	1053				
Depth to Product (f	L BTOC)	NA			Purge E	End Time (24	l-hr)	115				
Product Thickness	(ft)	NA			Total P	urge Time (n	nin)	23				
LOW FLOW: Ma sci	ax Draw Down reen, then use	i = (Tubing D default value	epth – Top of of 0.3 ft.;	Screen Depth)	X 0.25 =	=(ft); if	f screen inte	erval is not kno	own or water tab	le is below top of		
Min. purge volume it	f required: pu	rge volume (g	al) = volume of	water/ft(gal/	ft) X Water co	lumn thicknes	s(ft) X # of casing	volumes	_ =gal 469 gal/ft		
Well Diameter - gal/ft 1" - 0.041 gal/ft 2" - 0.153 gal/ft 4" - 0.653 gal/ft 6" - 1.459 gal/ft Water Quality Parameters												
(Achieve stab	le parameters	for 3 consecu	tive reading, 4	parameters if practic	al [each read	ling taken afte	r pumping a	minimum of "	1 flow through ce	li volume])		
TimeFlowPurgeTempSpecificDOORPpHTurbidityDTWDrawdown(24-hr)RateVolume(°C)Conductance(mg/L)(mV)(NTU)(ft BTOC)(ft)(liter/(gal or(µS/cm ⁵)(µS/cm ⁵)												
	minute)	liter	(± 3 %)	(± 3%)	(± 10%)	(± 10mV)	(± 0_1)	(± 10%, or <5 NTU)		(Maxft)		
11:00	10425	a	6-89	251	2.12	867	5.97	6.42	15.09	-0.01		
11-12	.415	3.5	6.86	050	1.92	80.6	6-01	5.32	15.09	-0.01		
11:61	1175	5	6.95	050	1.50	62.5	613	5.67	15.09	-0.61		
1100	-4m	7	(Qi	250	1.47	59 5	612	3.19	15.09	-0-01		
11.09	• (00	75	0.10	251	1.34	52 8	6.20	4.25	15 19	- 0.01		
1.12	#~100	4.7	6.10	251	1.08	419	619	5 141	15 00	0.61		
	• 400	8	6.5	0)	1071	170	041	2.14				
				_	1							
	1	1					1		1			
			E 1.	4:	1					1		
Parameter Stable	Check applic	able)	1		1		V					
Sample Color:	Claas		<u> </u>	Sample Odor:	AI	2	She	en: A	In			
Sample Color.	Cieu			Analytic	al Sampling	0						
	Analy	yses		Check	Applicable			Comr	nents			
Basic suite of analyte	:5									Caral Caral		
Comprehensive wate	r supply suite o	of analytes			1	-						
VOCs only + Arsenic					<							
Other analytes. List:												
Notes:												
Equipment: Pu Water Level Met	mp Type] er_300-	ealon-l	inel	Multi-Paramet	_ Tubing (er Meter (M Time	Type) <u>55</u> Make/SN#)_ /22/16	(furrin 4515	une 56 10	Bailer used:	TYes No		
Turbidity Mater (Make/SN#	Lader	AR SNO	De lut	28	Kalada Kala	and a second second	Filt	er Lot #A	A		
Turbidity Meter (Calibration	verified I		o Date/Time	9/22	16 0	39:00		- V			
Purge Water Ha	andling:	Discharge	ed to surface	Containerize	ed 🗌 Trea	ated (how?))	To	tal gallons ge	nerated		
D(10 - 1	DCIG - Del - Connert Surface DTOC- Delaw Tap of Cogine NA - Not Applicable Page 1 of											

SL	_R*	*	G	roun	16- dwate	Dec-16 r Samp	ling Fori	n			10 1a	
Site/Client Name:	Alaska LNG	Fugro Niki	ski			Well I	: Ou	1-2				
Project # : 105.00	148.16001					Sampl	e ID. OL	ノーマー	0916	0		
Sampled By:	in Sini	rec Set	h Olive	N		Sampi	e Time: 🚺	310	Sampl	e Date: 🏑	22/10	
Weather Condition	IS: Rain		1 0110			Duplica	ate ID:				9	
Sampling Method:	X Low Flow	Other				MS/MS	SD 🗍 Yes	No	Trip Blank	Required: 🔀	Yes 🗌 No	
oumping mound.	A con tion				Well In	ormation						
Well Type: 🔀 Per	manent 🔲 Te	emporary	1	/Vell Dia	meter	, ir.	Screen inte	ervat: 🔟	1-7flB	GS to 137	1 ft BGS	
Well Condition: 🔀	Good 🗍 Fai	r 🗌 Poor (i	f fair or poor (explain	n Notes)		Stickup	Yes 🗌 N	c: If yes,	ft above	ground	
1910	7	- Call		Gau	ging/Purg	ing Inform	ation	I DTOC	Alat w	1200		
Depth to Water (ft	BTOC):	(. UT	521			Purce S	Start Time (2)	(R. BTOC	21	1045010c		
Depth to Product (ft. BTOC	NA	100			Purge B	End Time (24	-nr)	68			
Product Thickness	(ft)	NA				Total Purge Time (min) 1310 AS 2421 31						
LOW FLOW: M sc	ax Draw Down reen, then use (= (Tubing D default value	epth – Top of of 0.3 ft.:	Screen I	Depth)	X 0.25	=(ft); ii	screen inte	erval is not kni	own or water table	is below top of	
Min. purge volume i	if required: pur	ge volume (g	al) = volume of	f water/ft	(gal/	ft) X Water co 163 nal/ft	olumn thicknes	s(ft 4' = 0.653) X # of casing gal/ft	volumes6' - 1.4	=gal 69 gal/ft	
ven Diameter	- gaint 1	1 - 0.	041 gaint	W	ater Quali	ity Paramet	ers		gen to			
(Achieve stat	ole parameters f	for 3 consecu	tive reading, 4	paramete	ers if practic	ai (each read	ding taken afte	r pumping a	minimum of t	1 flow through cell	volume])	
Time (24-hr)	Flow Rate (liter/	Purge Volume	Temp (°C)	Sp Cond (µ3	ecific uctance S/cm°)	DO (mg/L)	ORP (mV)	pН	Turbidity (NTU)	DTW (ft BTOC)	Drawdown (ft)	
	minute)	liter)	(= 3 %)	(=	: 3%)	(± 10%)	(± 10mV)	(± 0.1)	(± 10%, or <5 NTU)		(Maxft)	
1245	,400	1 2	6.36	16	2C	2.67	86.8	8.10	(0.10	38.10	0.46	
1248	. 400	4	6.36	15	1	2.40	84.1	8.11	10-10	38.10	0.46	
1252	2400	6	6.37	150	0	2.23	79.2	8.20	9.90	38.10	0.46	
1256	.350	8	6.47	15	5	2,12	72,5	8.33	10.43	38.06	0.42	
01300	.360	0	6.50	150	d	1.88	68.5	8.42	9.98	337.99	0.35	
1304	. 250	10	6.55	15	5	1.80	isto S	8.45	8.76	37.99	0.35	
1308	3350	19	6.60	15	5	1.73	63.2	8.51	8.51	37.19	0.35	
									1			
			- /									
Parameter Stable	(Check applic	able)		1	1		1	1		1		
Carrale Calar		<u> </u>		Som	olo Odor:	Ň.		She	en:	Va		
Sample Color:	Creat			Jam	Anabrtic	al Samplin			1	• 0		
	Analy	/505			Check	Applicable	9		Com	nents		
Basic suite of analyt	es											
Comprehensive wat	er supply suite o	of analytes										
VOCs only + Arsenia						X						
Other analytes. List:												
Notes:							2					
Equipment: P		5 Hur	ricane	R.A. 117	Dever	Tubing (Type) Tef	VKI E	ned 5/2 in	Bailer used:	🗌 Yes 🛣 No	
Water Level Me	ter <u>200</u> -	-++		Multi	Paramet		make/SN#)_	1212	200	LIUISIT		
Multi-Parameter	r Meter Calib	pration ver			o Date	128	9110	08-	20	or Lot #		
I urbidity Meter	(Make/SN#)	La /10		200	- 17	g/m 1	1 0	4:00)	rit	ei LUL#		
I urbidity Meter Purge Water H	Calibration V andling:	verified: Discharge	≥ Yes ∐N ed to surfac		e/ i ime ntainerizi		ated (how?)		То	tal gallons ger	erated:	
BGS =	Below Ground	Surface, BT	OC= Below T	op of Ca	sing, NA =	Not Applica	able		P	age 1 of		

B-36



Site/Client Name	Site/Client Name: Alaska LNG/Fugro Nikiski Well ID: 00-3									
Project # : 105.00	148,16001				Sam	ple ID: 🕐	W-3-	0916		
Sampled By:	PA SUN	ie (Sert	Nu	Sam	ple Time	458	Samp	le Date: 9/	2216
Weather Condition	IS Aloue	14 1	JUL LA	Unive	Dup	icate ID			V	01.0
Sampling Matand			Juieg		MSI	ASD TO YO	No	Trin Diank	Domuirod: V	Vee El Ne
Sampling Wethou.				10	(all informatio		SANO	пр Балк	Required.	
Weli Type: Per	manent - 🗌 Te	emporary		Vell Diamete	er 6 in	Screen	nterval: 4	4 ft B	IGS to 64	ft BGS
Well Condition:	Good T Fai		if fair or poor	explain in No	otes)	Stickup	Yes IN	a: If ves.	3.2 ft abov	e around
C C C C C C				Gauging	/Purging Info	mation				
Depth to Water (ft	BTOC): 54	.42			Tubi	ng/Pump Dep	oth (ft. BTOC): 60	>	
Total Depth (ft BT	TOC) 7	1.20			Purg	Start Time	(24-hr)	422		
Depth to Product ((ft. BTOC)	-NA			Purg	End Time (24-hr) /	156		
LOW FLOW: M	ax Draw Down	= (Tubing [Depth - Top of	Screen Depth	n) X 0.2	5 =(ft;	(min) ; if screen inte	sy erval is not kno	own or water tabl	e is below top of
Min. purge volume	if required: pur	ge volume (p	(al) = volume of	water/ft	(gal/ft) X Wate	column thickn	ess (ft) X # of casing	a volumes	= gal
Well Diameter	- gal/ft	1' - 0.	041 gal/ft	2	" - 0.163 gal/ft		4' - 0.653	gal/ft	6' - 1.4	69 gal/ft
				Water	Quality Param	eters				
(Achieve stal	ble parameters f	or 3 consecu	rtive reading, 4	parameters if	practical [each n	ading taken at	ter pumping a	minimum of 1	1 flow through cell	volume])
Flow Purge Temp Specific DO ORP pH Turbidity DTW Drawdown (24-hr) Rate Volume (°C) Conductance (mg/L) (mV) (NTU) (ft BTOC) (ft)										
(liter/ (gal or (µS/cm ^c) minute) (+ 3 %) (+ 0.1) (∸ 10%										
	minute)	(liter)	(± 3 %)	(± 3%)	(± 10%) (± 10mV	(± 0.1)	(≟ 10% or <5 , NTU)		(Maxft)
1425	0-35	0.5	5.97	171	23.8	55-6	2 G.11	16.0	34.43	0.01
1428	0.35	1.5	5.71	179	195	527	5.97		34.43	6.01
1431	0.38	2.15	5.73	180	2.05	52.5	5.91		34.43	0.01
1434	636	L	591	190) [9]	47.8	5.92		34.43	0.01
1437	0.36	5	5 97	100	10	33.6	P. Ola	11.3	34.43	0.01
1440	636	6	Egg	130		574	11.17		3443	Ad
1450	0.30	DE	573	102	1 7	197	0 09	115	211 43	0.01
453	0.50	0.2	5-19	100	117	2 1.7 2	6.01	11.30	31.17	2.01
INEC	0.36	10	0.10	105	11-	140	6-10	10.00	3143	0.01
1756	0.76	ld	2.01	182		17-0	6.13	10.25	24.72	0-01
			1			+ 1				
Parameter Stable	(Check applica	able)			1	V	V			
Sample Color:	Clear			Sample O	dor: Ne	5	Shee	en: Alo		
				Ana	lytical Sampli	ng	A			
	Analy	ses		C	heck Applicat	le		Comn	nents	
Basic suite of analyte	es									
Comprehensive wate	er supply suite of	analytes						34		
VOCs only + Arsenic					X					
Other analytes. List:										
Notes:										
Equipment: Pu	imp Type	2 HU	rricane		Tubing	(Туре) 社	ficn-l'in	ed	Bailer used:	Yes XNo
Water Level Met	rer <u>300</u> ~	44		Multi-Para	ameter Meter	Make/SN#	131	556	0 E10189	1
Multi-Parameter	Meter Calibr	ation veri	fied: XYe	s 🗋 No 🛙	Date/Time 💔	22/16	08:	30		
Turbidity Meter (Make/SN#)_	Lan	lotte	20200	146	8		Filte	er Lot #	5
Turbidity Meter (Calibration ve	erified: 🔰		Date/Tin	ne 9/22/	16 0	39:00			2~
Purge Water Ha	Purge Water Handling: Discharged to surface Containerized Discharged (how?) Total gallons generated:									
BGS =	BGS = Below Ground Surface, BTOC= Below Top of Casing, NA = Not Applicable Page 1 of									

CI	D	3	ι	Rep JSAL-FG-GRZZ 1	oort - Event 2 Z-00-002016 6-Dec-16	-004 Rev. 0	-			
) SI	_K		(Groundwat	ter Samp	ling For	m			
Site/Client Name	: Alaska LNC	G/Fugro Nik	tiski		Well II	D: OW	-4			
Project # 105.00	148.16001				Sampl	e ID: M	1-4-	OHE		
Sampled By:	an Sini	ec, GT	h Oliver	Jason Gr	Sampi	e Time:	006	Sam	ble Date: 9/	22/10
Weather Condition	ns: Clin	da li	Jinking	Vy an el	Duplicate ID					
Sampling Method	Low Flow		J		MS/MS		No.	Trin Blank	Required	
	A			Well	Information			The Blan	Cricquired.	
Well Type: 🔼 Per	manent 🔲 T	emporary		Well Diameter	G_in.	Screen Int	ervat: 👖	4 Ce ft	BGS to 13	K Cft BGS
Well Condition: 🔉	Good 🗌 Fa	air 🗌 Poor (if fair or poor	explain in Notes	s)	Stickup 💍	Yes 🗌 N	ia: If yes, 🗙	67 ft abo	ove ground
	1. S. 1. S.	1	7	Gauging/Pu	urging Inform	ation	1997	1		
Depth to Water (ft	BTOC):	5(a Q	2		Tubing	Pump Depth	(ft. BTOC): 150	>	
Depth to Product	OC J:	140.5 K/2	1		Purge S	Start Time (2	4-hr)	520		
Product Thickness	s (ft)	KA	4		Total P	urge Time (24	nin) 1	\$4		
LOW FLOW: M	ax Draw Dowi	n = (Tubing [Depth – Top o	f Screen Depth)	X 0.25 :	=(ft); i	f screen inte	erval is not kr	nown or water ta	ble is below top of
so	creen, then use	default value	of 0.3 ft.:							
Well Diameter	if required: pu - gal/ft	1" - 0. 1" - 0	pal) = volume o 041 gal/ft	of water/ft(g	al/ft) X Water co 0 163 gal/ft	lumn thicknes	s (ft 4' = 0.653) X # of casin	g volumes	gal
the second second second			gown.	Water Qu	ality Paramet	ers	1 0.000			.400 gaint
(Achieve stai	ble parameters	for 3 consecu	utive reading, 4	parameters if prac	ctical [each read	ling taken afte	r pumping a	minimum of	1 flow through c	ell volume])
Time	Flow	Purge	Temp	Specific	DO	ORP	pН	Turbidity	DTW	Drawdown
(24-hr)	Rate (liter/	Volume	(°C)	(uS/cm ⁶)	e (mg/L)	(mV)		(NTU)	(ft BTOC)	(ft)
	minute)	(liter)	(± 3 %)	(20()	(+ 109()	(+ 10)()	(± 0.1)	(± 10%,		(Mary 6)
		\sim		(± 3%)	(10%)	(± 10mV)	1	NTU)		(Maxπ)
1236	-300	2	6.38	50	2.89	49.)	6.45	21.9	56-10	0.08
1540	,300	3	6.30	154	9,42	41.5	6.71	18.6	56-10	0.08
1544	- 300	4.5	6.09	161	2.17	36.5	7.22	18.06	56.10	0.08
1548	.300	5.5	6.05	165	1.92	34-5	7.57	16.3	56,10	0.08
1552	.300	7	6.08	173	1.80	34.4	7.76	17.4	56.10	0.08
1556	-300	8.5	5.97	178	1.59	34.4	7.91)	14.0	5404	0.08
1600	-300	9.5	5.98	179	1.43	365	7.96	14.3	56.04	0.08
1604	.200	11	5.94	179	1-31	36.3	8.00	llard	56.04	0.08
1610 1	000	- <u> </u>	0001					10.0	0.1-1	
	1	1	1						1	
Parameter Stable	(Check applic	cable)	1			1.1	1		-	
Samala O. I	01		V			<u> </u>		A /		
Sample Color:	Chee	w/		Sample Odo			Shee	en: ///)	
the second second	Δηρί	202		Analyti	ical Sampling			Com	monto	
Basic suite of analyte		323	a in a she	CILEC	- Applicable				mems	
Comprehensive wate	er supply suite o	of analytes								
VOCs only + Arsenic				×	(
Other analytes. List:					×					
Notes:										
	1	CIL					4 Is	.1		
Equipment: Pu	mp_Type之	> HUM	acane		Tubing (T	ype) tet	lon-li	ned	Bailer used:	TYes 🕅
Water Level Met	er 300-	++		Multi-Parame	eter Meter (M	ake/SN#)	515	56 1	UEI018	99
Multi-Parameter	Meter Calib	ration verif	fied: XY	es 🗌 No Date	e/Time 1/a	216	08-	30		
Turbidity Meter (Make/SN#)	LaMo	the Ze)70e	14728			Filte	er Lot #	
Turbidity Meter (Calibration v	erified: 🗴	Ves 🗆 N	Date/Time_	9/22/	16 0	900			1
Purge Water Ha	Indling: 🗌	Discharge	d to surface	e Kontaineri:	zed 🗌 Trea	ted (how?)		Tot	tal gallons ge	nerated 35
BGS = J	Below Ground	Surface, BT(OC= Below T	op of Casing, NA	= Not Applicab	le		Pa	age 1 of	

Water Parameter Meter Calibration LogDate:91162016Time: $8:29$ Calibration By:SethOlverMeter Manufacturer and Identification #: $V41$ 55616E 101899ReadingReading After CalibrationCalibration Acceptance CriteriaParameterStandardTrue ValueLot #Date OpenedExpiration DatePreCalibration ReadingReading After Calibration Acceptance CriteriaPH7.007.06TV1 81816 05 20177.057.06 ± 0.10 pH4.004.00TT1 81816 07 20174.00 4.00 ± 0.10 sp Cond (mS/cm)1.4131.413TP1 8612016 1120171.5961.413 $\pm 10\%$ ORP (mV)240240.0 6032 $8/812016$ 0912019 249.0 240.0 6032 $8/812016$ 0912019 249.0 240.0 -10%			<u> </u>	JSAL-FG-GRZZZ- 16-	00-002016-004 Dec-16		~	-	
$\begin{array}{c c c c c c c c c c c c c c c c c c c $			Water	Paramete	er Meter	Calibratio	on Log 📩		२ ~
Parameter Standard True Value Lot # Date Opened Expiration Date PreCalibration Reading Reading After Calibration Acceptance Criteria pH 7.00 7.00 7.00 TV1 8/8/16 05/2011 7.05 7.06 ± 0.10 pH 4.00 4.00 TT1 8/8/16 07/2011 4.00 4.00 ± 0.10 10.00 10.18 T52 8/8/16 08/2017 10.08 10.18 ± 0.10 Sp Cond (mS/cm) 1.413 1.413 7.413 7.41 8/8/2016 11/2017 1.596 1.413 $\pm 10\%$ ORP (mV) 240 240.0 8032 8/8/2016 69/2019 249.0 240.0 6032 249/20 240.0 6032 6/8/2016 69/2019 249.0 240.0 6032 6/8/2016 6/9/2019 249.0 240.0 $$	Date:	ufacturer and	vo Identification #:	Time: 8:29	16E10	Calibration By:	Seth O	liver	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$	Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		7,00	7.06	Tu1	81816	05/2017	7.05	7.06	± 0.10
$\frac{10.00}{10.00} \frac{10.18}{1.413} \frac{152}{794} \frac{81516}{81612010} \frac{0812017}{10.08} \frac{10.08}{10.08} \frac{10.18}{1.413} \frac{10.08}{1.413} \frac{10.10}{1.413} \frac{10.10}{$	pН	4.00	4.00	Til	818/16	07/2017	4.00	4.00	± 0,10
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		10.00	10.18	752	8/5/6	08/2017	10-08	10.18	± 0.10
ORP (my) 240 240.0 8032 8/8/2016 09/2019 249.0 240.0	Sp Cond (mS/cm)	1,413	1.413	TP1	5/6/2010	11/2017	1.596	1.413	± 10%
	ORP (mV)	240	240.0	8032	5/512016	09/2019	249.0	240.0	x
	DO*1/3			-	-		102.2	97.6	± 2%

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Date: 9	17 /2016 ufacturer and	- Identification #:	Time: 8:16	6 10E1	Calibration By:	Jeth C	liver	
Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
	7.00	7.06	IVT	8816	05/2017	6-99	7.06	± 0.10
рН	4.00	4.00	TT1	8/8/16	07/2017	4.01	4.00	± 0,10
ANG HA	10.00	10.18	752	8/8/10	08/2017	10,22	10.18	± 0,10
Sp Cond (mS/cm)	1 413	1.413	TPL	8/8/16	11/2017	1,383	1413	± 10%
ORP (mV)	240	240	8032	8/8/16	09/2019	247.0	240.0	
DO*	_				-	92.4	98.0	± 2%

100

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Date: 9/18/16	Time: 8:21	Calibration By:	Seth Oliver
Meter Manufacturer and Identification #	451 556	INE 101 889	

Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
	7.00	7.00	TV1	818/16	05 Po17	7-11	7.06	± 0.10
рН	4.00	4.00	TT1	8/8/16	07/2017	4.01	4.00	± 0.10
140	10.00	10.18	TS2	8/8/16	08/2017	10.30	10.18	± 0 10
Sp Cond (mS/cm)	1.413	1.413	791	8/8/16	11/2017	1:470	1.413	± 10%
ORP (mV)	240	840-0	8032	8/8/16	09/2019	243.0	240.0	
DO*		-				105.4	98.8	± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

		Water	Paramete	er Meter	Calibratio	on Log	SLI	२ 🦈
Date: <u>9</u> Meter Nianu	JA Joll	○ Identification #:	Time: 0745	DUE	Calibration By:	Seth (liver	
Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
	7.00	7.08	TVI	5/8/16	5/2017	6.94	7.08	± 0,10
pН	4.00	4.00	TTI	818116	0712017	4.07	4.00	± 0,10
	10.00	10.26	1-152	816/16	08/2017	10.34	10.26	± 0,10
Sp Cond (mS/cm)	1.413	1.413	TPI	9/19/16	11/2017	1387	1.413	± 10%
ORP (mV)	240	240.0	8032	8/8/16	09/2019	341.9	240.0	
DO*						88.4%	100-j	± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table dals h

Date: 🥂	20/2016	_	Time: 9:40		Calibration By:	Ren Su		
Meter Manu	afacturer and	Identification #:	-45/55	6 IDE	101899			
Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
124.0	7.00	7.06	TU1	\$18116	05/2017	7.14	7.11	± 0.10
рН	4_00	4,00	TT1	4/21/16	07/2017	4.04	4.00	± 0.10
	10,00	81.01	TSZ	8/8/16	08/2017	10.22	10.18	± 0,10
Sp Cond (mS/cm)	1,413	1.413	-TP1	9/9/16	11/2017	1.410	1.413	± 10%
ORP (mV)	240	240.0	8032	\$18116	09/2019	234.6	240.0	
DO*		-		-		46.4%	99.7	± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

Date:

2

Meter Manufacturer

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

turer and Identification #:	Time: 8:05	Calibration By:	Seth of	lver
In the second second second second second	The second second second	THE REAL PROPERTY		Rea

Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
	7.00	7.05	Tv1.	818/16	05/2017	7.05	7.05	± 0.10
pН	4.00	4.00	111	4/21/16	07/2017	4.04	4.00	±0.10
Levi2 ^e	10.00	10.16	TV1	414/16	05/2017	10.16	10,16	± 0.10
Sp Cond (mS/cm)	1.413	1.413	TPI	9/19/2016	11/2017	1381	1,413	± 10%
ORP (mV)	240	240.0	8032	818/16	09/2019	236.6	240.0	
DO*				-	-			± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

Water Parameter Meter Calibration Log SLR

Date: Meter Manu	22/16 lfacturer and	– Identification #:	Time: 8:30	ių 10	Calibration By:	Seth Oli	ver	
Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
2019	7.00	7.05	TV1	9/22/16	05/2017	7.33	7.05	± 0.10
рН	4_00	4.00	TT	4/21/16	0712017	3.94	4.00	± 0.10
$N = F_1^{*}$	10.00	10-12	TV1	4/19/16	05/2017	10.00	10.12	± 0,10
Sp Cond (mS/cm)	1 413	1.413	TP1	9/19/2016	11/2017	1.420	1.413	± 10%
ORP (mV)	240	240	8032	8/8/16	09/2019	2.38.0	240.0	
DO*	~		~			95,4	96.5	± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude: reference the DO Calibration Table 11 1 2 2 4

Date:	12216	- Identification #:	Time: <u>6.29</u> 45 556	IOE10	Calibration By:	Seth Ol	iler	
Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
a winter a	7.00	7.08	TU1	91/22/16	05/2017	6.80	708	± 0.10
pН	4.00	4.00	771	4121/16	07/207	4.04	4.00	±010
	10.00	10.22	752	818/16	08/2017	10.43	10,25	±0.10
Sp Cond (mS/cm)	1.413	1.413	791	9/19/16	11/207	1.446	1.413	± 10%
ORP (mV)	240	ORP not	calibrated		۱.	105.9 a/	77.3	
DO*		-	-		-	1027	97.3	± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude, reference the DO Calibration Table

Parameter	Standard	True Value	Lot #	Date Opened	Expiration Date	PreCalibration Reading	Reading After Calibration	Calibration Acceptance Criteria
ST 344	7.00							± 0.10
pН	4,00					7		±010
in the	10.00			×				± 0.10
Sp Cond (mS/cm)	1.413							± 10%
ORP (mV)	240		v		-			
DO*								± 2%

If parameter not included in sampling event, fill in box with NA (not applicable)

* Note that the True Value for DO is dependent on pressure and altitude; reference the DO Calibration Table

SLR		2	Turbidimeter Lo	Calibration g	
Calibration Date 9/16/2016	Calibration Time	Calibration By 5	eth Oliver		1
Instrument Make/Model	Serial # SN 14728	Cal Fluid #1	Cal Fluid #2	Within Acceptable Range?	into 100
Bump Check For Calibration 🗆 Notes	5:	Bump check result or post- cationation reading.	Burny check result or post- calibration reading.	yes no	808
Calibration Date	Calibration Time 08:44	Calibration By	jeth oliver]
Instrument Make/Model Lamorte QUJUE Turbus	Serial # Show SN14728	Cal Fluid #1	Cal Fluid #2	Within Acceptable Range?	NTUT
Bump Check X or Calibration 🗌 Note:	s:	Bump check result or posi- calibration reading	Bump check result or post- calibration reading:	yes no	86.5
Calibration Dates / 1 / 16	Calibration Time	Calibration By	en Siwit	°C	1
Instrument Make/Model	Serial # SN 14728	Cal Fluid #1	Cal Fluid #2	Within Acceptable Range?	
Bump Check 🗆 or Calibration 🗙 Note	s: -	Rump check result or post- calibration reading:	Bump check result or post- calibration reading	ves	
Calibration Date 9 (18 2016	Calibration Time 6836	Calibration By Se	eth Oliver		1
Instrument Make/Model Lomothe 20202	Serial # SN 14728	Cal Fluid #1	Cal Fluid #2	Within Acceptable Range?	NTU 10
Bump Check Kor Calibration D Note	s:	Calibration reading:	ealibration reading	no	
Calibration Date 9/(9/16		Calibration By	eth cliver		1
Instrument Make/Model Lamotte 2020e	Serial # 5N14728	Cal Fluid #1	Cal Fluid #2	Within Acceptable	Ntolo
Bump Check Xor Calibration 🗆 Note	S	Bump check result or post- calibration reading: - 0 a 05	Bump check result or post- calibration reading:	ves	92
Calibration Date 9/20/ 6	Calibration Time 9:50	Calibration By	Ban Siwirc	The takes	
Instrument Make/Model La Motte 2020C	Serial # 14728	Cal Fluid #1	Cal Fluid #2	Within Acceptable Range?	
Bump Check 🗆 or Calibration 🔍 Note	s: Blank:-0.06	Bump check result or posi- calibration reading: 9.03	Bump check result or post- calibration reading: 98.3	no	

Note: A bump check can verify the instrument is in proper calibration if the instrument reads an accurate value for a calibration solution (without performing a full calibration). In the event a bump check does not indicate the instrument is properly calibrated, a calibration will be performed, per manufacturer instructions.



Turbidimeter Calibration Log

Calibration Date 9/2/16	Calibration Time 8:20	Calibration by Ber	1 SINCEC	
Instrument Make/Model	Serial # 14728	Cal Fluid #1	Cal Fluid #2	Within Acceptable Range?
Bump Check 🗆 or Calibration 🕅	Notes: blank= 0,28	Bump check result or poet- cellbration reading:	alipration mading:	yes
Calibration Date	Calibration Time 9:00	Calibration By	Sivie	
Instrument Make/Model	Serial #	Cal Fluid #1	Cal Fluid #2	Within Acceptable

Instrument Make/Model	Serial #	Cal Fluid #1	Cal Fluid #2	Within Acceptable
LaMotte 20208	14728	16 NTU	LOO_NTU	Range?
Bump Check for Calibration D Note	s: blank: 0.00	Burno check result or post- calibration reading	Bump check result or post- calibration reading: 94,5	ino

Calibration Date	Callbration Time 68.50	Calibration By	an Siwiec	
Instrument Make/Model	Serial #	Cal Fluid #1	Cal Fluid #2	Within Acceptable
La Mothe 2000e	4728	io ntu	100 NTU	Range?
Bump Check X or Calibration D	lotes: blunk: 0.00	Bump check result or post- calibration reading.	Burno check result or post- calibration reading	no

Calibration Date	Calibration Time	Calibration By				
Instrument Make/Model	Serial #	Cal Fluid #1	Cal Fluid #2	Within Acceptable		
		NTU	NTU	Range?		
Bump Check 🗌 or Calibration 🗌 Notes:		Bump check result or posl- calibration reading:	Burno check result or post- calibration reading:	yes		
				no		

Calibration Date	Calibration Time	Calibration By				
Instrument Make/Model	Serial #	Cal Fluid #1	Cal Fluid #2	Within Acceptable		
		NTU	NTU	Range?		
Bump Check 🗍 or Calibration 🛛	Notes:	Bump check result or posi- calibration reading:	Bump check result or post- calibration reading:	yes		
				no		

Calibration Date	Calibration Time	Calibration By				
Instrument Make/Model	Serial #	Cal Fluid #1	Cal Fluid #2	Within Acceptable		
		NTU	NTU	Range?		
Bump Check 🗍 or Calibration 🗔	Notes:	Bump check result or post- calibration reading:	Bump check result or post- calibration reading	yes		
			4	no		

Note: A bump check can verify the instrument is in proper calibration if the instrument reads an accurate value for a calibration solution (without performing a full calibration). In the event a bump check does not indicate the instrument is properly calibrated, a calibration will be performed, per manufacturer instructions. APPENDIX C INVESTIGATION-DERIVED WASTE DISPOSAL MANIFEST

Secon	NON-HAZARDOUS	1. Generator's US EPA ID	₩ ÆT			Manifest Document No.	Rev. 0 16-Dec	2. Page 1
	FUGROCONSULTANTS LLC 6100 HILLCROFT AVE HOUSTON, TX 77081	1	FUGRO CO ONSHORE KENAI, AK	DNSULTANT DRILLING 5 99611	'S SITES	- NIKISKI		at 1
	5. Transporter 1 Company Name NRC ALASKA LLC	e,		Number 14184		A. Slate Transp	orter's ID	<u>=</u>
	7. Transporter 2 Company Name	8.	US EPA ID	Number		B. Transporter 1 C. Stale Transp	Phone 2007 200- 10	
	9. Designated Facility Name and Site Address		US EPA ID	Number		D. Transporter 2 E. State Facility	? Phone s ID	
	44066 KENAI SPUR HIGHWAY KENAI, AK 99611	1	AKR00020	3984		F. Facility's Phot	907-395-4600	. <u></u> ,
	11. WASTE DESCRIPTION		<u></u>		Cor	ntainers	13. Total	14, Unit
Ĵ	^{a.} Material Not Regulated by DC)T			No.	Туре	Quantity	Wt.Wol.
					5	DM	1.600	P
	<u> </u>							_
	<u>d.</u>							
	G. Additional Descriptions for Materials Listed Above							
	EA0301 CONTAMINATED WAT	ĒR			D54	H. Handling Code	s for Wastes Listed Above	
ſ	15. Special Handling Instructions and Additional Inform	nation						
	packaged, marked and labeled, a	certify that the abo ind are in proper c	ove-named ma ondition for tra	terials are provide the territor of the territory territory and the territory of territ	roperly accord	/ classified, ting to the a	described,	ione
	of the Department of Transportation	on					-ppilodatio rogalat	101(5
	16. GENERATOR'S CERTIFICATION - L barebu continu		<u> 7 / 7 / 7</u>	7 / / /	7/			7
	in proper condition for transport. The materials desc	nature contents of this shiph ribed on this manifest are not	nent are fully and accur t subject to federal hazi	ately described and indous waste regula	l are in all itions.	respects		
	Brinted Typed Name		Signature	<u>}</u>				Date
	17 Transporter 1 Action with dearment at Dearline station			1			Month 9	Day Year
<i>(</i>	Printed/Typed Name	mais	Signature	$\frac{1}{2}$				Date
7				Lel lin				26 16
	Faul Crupps	dete	<u> </u>					
	Haal Crupps 18. Transporter 2 Acknowledger eye of Receipt of Mate Printed/Typed Name	rials	Signatore				Month	Dale Dau Marci
	Haal Crupps 18. Transporter 2 Acknowledger by of Receipt of Mate Printed/Typed Name 19. Discrepancy Indication Space	rlais	Similar				Month	Dale Day Year
	Haal Crupps 18. Transporter 2 Acknowledger of Receipt of Mate Printed/Typed Name 19. Discrepancy Indication Space	rlais	Simatore				Month	Dale Day Year
	18. Transporter 2 Acknowledgerwyf of Receipt of Mate Printed/Typed Name 19. Discrepancy Indication Space 10. Facility Owner or Operator: Certilication of receipt of	riats	Signatore	as noted in item *0		,,, <u>,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,</u>	Month	Dalo Day Year

NUN-HAZAHDUUS WASTE



CERTIFICATE OF DISPOSAL/RECYCLE

GENERATOR:

FUGRO CONSULTANTS ONSHORE DRILLING SITES - NIKISKI KENAI, AK 99611

DISPOSAL FACILITY: NRC ALASKA LLC 44066 KENAI SPUR HIGHWAY KENAI, AK 99611

EPA ID NUMBER: EXEMPT MANIFEST/DOCUMENT #: 107464B DATE OF DISPOSAL/RECYCLE: SEP-26-2016

LINE	WASTE DESCRIPTION	<u>CONTAINERS</u>	TYPE	QUANTITY	UOM
1	CONTAMINATED WATER	5	DM	1600	P

I certify, on behalf of the above listed treatment facility, that to the best of my knowledge, the above described waste was managed in compliance with all applicable laws, regulations, permits and licenses on the date listed above.

an PREPARED BY: hany SIGNATURE: DATE:

425 Outer Springer Loop Road - Palmer, AK 99645 - (907) 258-1558 - Fax (907) 746-3651 - Toll Free (877) 375-5040



APPENDIX D DATA QUALITY ASSESSMENT

Report

LABORATORY DATA QUALITY ASSURANCE REVIEW

GROUNDWATER MONITORING EVENT A: AUGUST 2016

NIKISKI, ALASKA ALASKA LNG

November 2016

Prepared by: Jennifer McLean, and Jason Gray **Reviewed by:** Wendy Hansen

SLR International Corporation 2700 Gambell Street, Suite 200 Anchorage, AK 99503

SLR Project Number 105.00148.16001

ACRONYMS AND ABBREVIATIONS

%	percent
AAC	Alaska Administrative Code
AK	Alaska
ADEC	Alaska Department of Environmental Conservation
ALS	ALS Laboratory in Kelso, Washington
°C	degrees Celsius
CCV	continuing calibration verification
CVC	closing calibration Verification
COC	chain of custody
DL	detection limit
	diesel range organics
FDDs	electronic data deliverable
	Environmental Protection Agency
LI A 4	foot/foot
	Field Sampling Dian
GRU	gasoline range organics
	lower control limit
	laboratory control sample
	laboratory control sample duplicate
LODS	limit of detection(s)
LOQ	limit of quantitation
mg/Kg	milligrams per kilogram
mg/L	milligrams per liter
MB	Method Blank
MS	matrix spike
MSD	matrix spike duplicate
NA	Not applicable
	Nephelometric Turbidity Units
NELAP	National Environmental Laboratory Accreditation Program
PAH	polycyclic aromatic hydrocarbons
PCBs	polychlorinated biphenyls
QA	quality assurance
QAR	quality assurance review
QC	quality control
RPD	relative percent difference
RRO	residual range organics
SDG	sample delivery group
SIM	selective ion monitoring
SLR	SLR International Corporation
SGS	SGS North America, Inc.
SM	Standard Methods
SVOCs	semi-volatile organic compounds
TDS	total dissolved solids
TKN	total kieldahl nitrogen
тос	total organic carbon
TSS	total suspended solids
	unner control limit
	volatile organic compounds
003	volatile organie compounds

Introduction

This report summarizes a review of analytical data for groundwater samples collected between August 10, 2016 and August 12, 2016 at Nikiski, Alaska. Samples were collected by Fugro Geoservices Inc. (Fugro) with laboratory management and oversight by SLR International Corporation (SLR). SGS North America, Inc. (SGS) provided analytical services for the project, utilizing their Anchorage, Alaska laboratory. SGS maintains a current Alaska Department of Environmental Conservation (ADEC) Contaminated Sites approval number (UST-005) for analytical methods of interest, as applicable. Chlorophyll-a sample aliquots were transferred by SGS for subcontract analysis to ALS laboratory in Kelso, Washington (ALS). ALS is accredited by the National Environmental Laboratory Accreditation Program (NELAP) for this analysis. Table 1 provides a summary of work orders, sample receipt information, analytical methods, and analytes.

SDG	Date Received by Lab	Temp Blank	Analytical Methods	Analytes	Matrix
		3.7 °C	200.8 Low Level	27 Metals	
1164639		1.2 °C	AK101 AK102 AK103	GRO DRO RRO	
		5.3 °C	EPA 300.0	Chloride, Fluoride Sulfate Nitrate/Nitrite	
	8/11/16	0.3 °C	EPA 410.4 EPA 1631 E	COD Mercury	
		1.2 °C	SM21 2130B SM21 2320B SM21 2340B SM21 2540B SM21 2540C SM21 2540D	Turbidity Alkalinity Hardness Total Solids TDS TSS	Groundwater
1164672	8/11/16		SM21 4500P-B,E SM21 4500NH3-G	Ortho Phosphorous Total Phosphorous Ammonia	
		8/11/16 4.2 °C	SM21 4500-N-D SM21 4500-H B SM 5310B	TKN by Phenate pH DOC TOC	
			SM21 10200 H SW8082A SW8260B SW8270D SW8270D	Chlorophyll-a PCBs VOCs SVOCs SIM Pesticides	
1164707	8/12/16	Chilled ^A	SM21 9222D	Fecal Coliform	1

Table 1 Summary of Work Orders, Sample Receipt, and Analytical Methods

Notes:

A – No temperature blank was included in the cooler with Fecal Coliform samples of SDG 1164707, see sample receipt discussion.

Acronyms and Abbreviations (Table 1): AK - Alaska °C – degrees Celsius COD - chemical oxygen demand DOC – dissolved organic carbon DRO – diesel range organics EPA – Environmental Protection Agency GRO – gasoline range organics PCBs - polychlorinated biphenyls RRO – residual range organics SIM – selective ion monitoring SDG – sample delivery group SVOCs - semi-volatile organic compounds TDS - total dissolved solids TKN - total kjeldahl nitrogen TOC - total organic carbon TSS - total suspended solids VOCs - volatile organic compounds

Laboratory final reports were provided as Level II deliverables, and included documentation of each delivery group chain-of-custody (COC) and sample receipt condition. Microsoft Access electronic data deliverables (EDDs) for each report were also provided. The PDF laboratory reports and the EDDs are provided electronically in Appendix E.

Quality Assurance Program

A quality assurance (QA) program was followed for this project that addressed project administration, sampling, quality control, and data review. Fugro and SLR adhered to required and established sampling and COC protocols, with exceptions noted in this QAR. SGS laboratory maintains an internal quality assurance program and standard operating procedures.

The analytical data was reviewed for consistency with any project specific requirements (Method Statement, April 2016), *ADEC Technical Memorandum, Environmental Laboratory Data and Quality Assurance* (ADEC 2009a) requirements, analytical method criteria and laboratory criteria. An ADEC Laboratory Data Review Checklist was completed for each SDG, and is included as Attachment 1 of this QAR. A review for any anomalies to the project requirements for precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS) are noted in this QAR, and any data qualifications discussed.

The data review included the following, as applicable:

- Reviewing COC records for completeness including signatures, and dates;
- Identifying any sample receipt or preservation anomalies that could impact data quality;
- Verifying that quality control (QC) blanks [e.g., field blanks (equipment blanks; trip blanks; etc.); equipment blanks; etc.] were properly prepared, identified, and analyzed;
- Evaluating whether laboratory reporting limits met project sensitivity goals. To complete this evaluation, undetected sample result limits of detection (LODs) were compared to applicable cleanup levels from 18 AAC 75.345, Table C, groundwater cleanup levels (ADEC, May 8, 2016);

- Reviewing calibration verification recoveries, including confirming that the laboratory did not identify any Calibration Verification (CCV) recoveries or other calibration related criteria outside applicable acceptance limits;
- Reviewing case narratives for any discussion of any internal standard recoveries outside of acceptance limits. Internal standard performance was not otherwise presented in the laboratory report or in the electronic data deliverable and was reviewed only from the case narratives.
- Verifying that surrogate compound recoveries were within acceptance limits;
- Verifying that Laboratory Control Samples (LCS), Laboratory Control Sample Duplicates (LCSD), Matrix Spike (MS), and Matrix Spike Duplicate (MSD) recoveries were within acceptance limits;
- Evaluating the result relative percent difference (RPD) between primary and duplicate field samples, LCS/LCSD, MS/MSD, and laboratory duplicates; and
- Providing an overall assessment of laboratory data quality and qualifying sample results as determined necessary.

Data Qualifications

As part of the quality assurance review, qualifiers (i.e. flags) were applied to data as determined necessary based on specified criteria, or professional judgement. In all cases, the basis for qualification and the applied data flag are discussed in this QAR. Table 2 provides a list of potential qualifiers. These data flags are appended to the data as appropriate.

Qualifier (Flag)	Definition
Q	One or more laboratory quality control criteria (e.g., laboratory control sample (LCS) recovery, surrogate spike recovery) failed. Where applicable, an "H", "L", or "N" was appended to indicate positive, negative, or unknown bias, respectively.
J	The analyte was positively identified but the result was outside the calibration range, between the limit of quantitation (LOQ) and the detection limit (DL); the quantitation was an estimate.
М	The concentration was an estimate due to a sample matrix quality control failure. Where applicable, an "H", "L", or "N" was appended to indicate positive, negative, or unknown bias, respectively.
В	Blank contamination: The analyte was positively identified in the blank (e.g., trip blank; method blank; equipment blank; etc., associated with the sample and the concentration reported for the sample was less than five times that of the blank (ten times for metals and common laboratory contaminants methylene chloride and acetone).
Р	Sample preservation requirements were not satisfied.

A discussion of the project data quality relative to PARCCS goals and summary of any anomalies or failures requiring data qualifiers follows.

Data Validation

Data Packages

The data packages were checked for transcription errors, omissions, or other anomalies. No issues were noted with regards to the data packages, except as noted below.

Work order 1164672

- For TSS by Method SM21 2540D, the case narrative noted that the laboratory duplicate field sample (parent sample from another project) was received and analyzed past the seven day method allowed hold time. LCS/LCSD RPD exceeded allowable limits. The RPD was within acceptable limits. Sample data for this project was not impacted.
- For SW8260B, the case narrative noted the LCS/LCSD RPD for acetone exceeded the RPD limit. The case narrative batch comments address all batch samples (including non-project samples). Acetone was not a requested or reported target analyte for this project. Therefore, the project's sample data and data quality objectives were not impacted. This QAR discusses the exceedance as a matter of prudence to show that the case narrative exceedance was reviewed and evaluated for significance.
- For SW8270D, the case narrative did not note the LCS/LCSD RPD exceedance of 24.8% for benzoic acid, slightly above the RPD control limit of 20%. For this work order, only sample TPW-5-0816 was associated with this LCS/LCSD and analyte benzoic acid was not detected in this sample. Therefore, data was not impacted. Refer to Table 7 of this QAR for further discussion.

Sample Receipt

The sample receipt documentation was checked for anomalies. The following issues were noted with regards to the receipt of the samples.

Work orders 1164639 and 1164672

ADEC specifies a temperature preservation range of 4±2 degrees Celsius (°C). Temperatures above the required range have the potential to degrade the sample and introduce bias to the reported sample results. In no instances for this project were coolers received at the lab with a temperature blank measurement above the required range.

Cooler temperatures below 2°C could result in freezing of the sample with the potential for damage to the integrity of the sample container. However, there is no concern that unfrozen samples would otherwise be impacted if received below 2°C. In cases where the cooler receipt temperatures were below 2°C, the lab inspected sample containers and made note of any ice present in the samples or other indication of compromised containers. Provided no concerns were identified, samples received slightly below the 2°C temperature limit were considered acceptable and analyzed with no qualification of the results applied due to receipt temperature. Cooler temperatures and any anomalous sample conditions were documented in the SGS data package (sample receipt form).

Three of the project coolers were received at the laboratory slightly below the 2°C criteria due to the inherent imprecision of achieving stable cooler temperatures within a narrow temperature range using frozen gel ice for cooling. No ice or evidence of freezing was noted for any of the

samples within these coolers. Therefore, reported sample data are considered acceptable without qualification.

Work orders 1164639

- One COC for the delivery was provided as four pages covering the contents of five samples coolers without indication from the sampler or SGS laboratory to document which samples were associated with a given cooler. However, data was not impacted. There were no instances where receipt temperatures above the required preservation range occurred which might have compromised the sample data and required association of the containers to a specific cooler. Volatile trip blank samples were always packed and shipped together in the same cooler with associated volatile field samples..
- For subsequent sample events, the project adhered to preparing a single COC specific to the contents of each cooler and identified the cooler ID on the COC, so there was no possibility of confusion as to which cooler samples were shipped in.

Work orders 1164639 and 1164672

Samples OW-2, OW-4, and TPW-5 chlorophyll-a samples were subcontracted to ALS laboratory in Kelso, Washington. The ALS sample receipt forms noted that COCs were not included in the coolers with the samples. The samples were transferred by SGS at the Anchorage airport from cargo shipper Ravn Air directly to Alaska Airlines for subsequent shipment to ALS within a limited timeframe due to a short method hold time and shipping logistics. ALS was aware of the samples due to e-mail notification by SGS which included the emailed COCs. These samples were received at ALS with no noted discrepancies. Data was not impacted.

Work order 1164672

- The original COC included in the cooler with the samples was amended by Fugro via email correspondence prior to receipt of the samples at SGS. On the amended COC, sample "TPW-5" was changed to "TPW-5-0816". The correction was not initialed and dated. Both the original COC and the amended COC are clearly identified in SGS's report. Therefore, although it is best practice to date and initial changes, there was no impact to data quality or usability.
- The sample identified on the original COC as TPW-5 was subcontracted by SGS to ALS laboratory in Kelso, Washington for chlorophyll-a analysis. The ALS sample receipt form noted that for sample TPW-5, the bottle was labeled "W5-0816" instead of "TPW-5" as listed on the COC provided by SGS via e-mail. Because this was the only sample in this shipment, the ID of the sample was established from the COC rather than the container label. No direction was provided by SGS to SLR with sample ID as TPW-5. Data was not impacted.

Work order 1164707

• A temperature blank was not included in the cooler with the samples. It is assumed that the sampler inadvertently left the temperature blank container out of the cooler during sample packing. The samples were received at SGS within 8 hours of sampling, and

listed as "Chilled" on the cooler receipt form. However, the temperature of the cooler was not measured. Based on professional judgement and the short duration following sampling, the sample data were not considered impacted.

Holding Times and Preservation

Samples were appropriately preserved and were submitted to SGS. Field pH analysis was performed, and should be considered the primary data for pH. The laboratory was also requested to perform and report a pH analysis within three days of sample collection as a potential QA check. However, the laboratory pH analysis was conducted beyond the method holding time (recommended to be immediately after collection). All other analyses were completed within hold time, except as noted below. No issues were noted in regard to sample preservation.

Work order 1164639

• For SW8270D SIM Pesticides, samples OW-2-0816 and OW-4-0816 were initially extracted within method hold time. However, the samples were subsequently reextracted past the method allowed hold time due to low sample surrogate recovery for the initial extraction. The re-extracted results (beyond holding time) were used to confirm the initial sample results. However, only the initial sample results within holding time were reported. Refer to the Surrogate Recovery section for further discussion.

Work orders 1164639 and 1164672

- For Total Solids (aka Total Volatile Solids) by Method SM21 2540B, samples OW-2-0816, OW-4-0816, and TPW-5-0816 were analyzed past the method holding time of seven days. Samples OW-2-0816 and OW-4-0816 were analyzed two days past hold time and TPW-5-0816 was analyzed one day past hold time. Due to an oversight at the laboratory, these samples were not logged into the SGS system for total solids at the time of receipt. As soon as the log-in error was identified, the samples were promptly analyzed. Total solids results for these samples were qualified with a, "QN," and should be considered estimated with unknown bias. It is unlikely that this hold time exceedance caused significant impact to the percent solids. Therefore, the affected results are considered usable as qualified.
- For SW8270D SIM Pesticides, samples OW-2-0816, OW-4-0816, and TPW-5-0816 were initially extracted and analyzed within method holding time. These samples were then re-extracted past hold time due to low recovery for Endosulfan I of 61% and 52 %, slightly below the lower control limit of 62% recovery in the LCS and LCSD. Results from the re-extracted analysis (performed beyond holding time) were used to confirm the initial results. Only the initial extraction results within holding time were reported by the laboratory. The sample data were qualified as noted in Table 9. All affected results were at least 1,000 fold below the applicable cleanup level; therefore, data usability was not impacted.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the appropriate frequencies. Analytes were not detected in any method blanks at or above the Limit of Detection (LOD), except as noted in Table 3. Associated results that were less than, or equal to, five times the blank detection (ten times for common laboratory contaminants and metals) were considered affected, and were qualified as shown in Table 3. Results were considered unaffected and were not qualified or

shown on Table 3, when associated sample results were greater than five times the blank detection or non-detect. In all cases, affected results were well below applicable project cleanup levels. It is not uncommon to observe several low level detections in the method blanks. Data usability was not affected.

Work Order	Sample ID	Lab ID	Method	Analyte	Result (mg/L)	Flag	Project Limits (mg/L)
	MB	1347406	AK102	ספס	0.324	J	1.5
1164620	OW-4-0816	1164639001	ARTUZ	DRO	0.395	J, B	
1104039	MB	1347406	AK102	PPO	0.264	J	
	OW-4-0816	1164639001	AK105	KKO	0.476	J, B	1 1
116/672	MB	1347540	AK103	RRO	0.386	J	1.1
1104072	TPW-5-0816	1164672001	AK105	KKO	0.326	J, B	
1164639	MB	1345981	SM 5310B	TOC	0.331	J	ΝΔ2
1164672	MB	1347699	SIN 3310D	100	0.304	J	
1164639,	MB	1345436	SM21 /500P-B E	Total	0.0061	J	NA ²
1164672	MD	10-0-00	01012 T 40001 -D,L	Phosphorus			
1164639	MB	1344400	SM21 2130B	Turbidity ¹	0.1	J	ΝΔ2
1164672	MB	1344520	51VIZ 1 2 1 50D	Turbluity	0.1	J	
1164639, 1164672	MB	1345941		Zinc, Total and Dissolved	0.00165	J	
	OW-1	1164639016			0.00283	J, B	5
	OW-2-0816	1164639007			0.00139	J, B	
	OW-3	1164639015		Dissolved Zinc	0.00301	J, B	
	OW-4-0816	1164639006	200.8 Low Level		0.0016	J, B	
1164639	EBF-Lot H1558	1164639010			0.00142	J, B	
	OW-1	1164639009			0.0158	В	
	OW-2-0816	1164639002		Total Zina	0.012	В	
	OW-3-0816	1164639008		Total Zinc	0.00761	=, B	
	EBT-0816	1164639011			0.00147	J, B	

Table 3Method Blank Detections

Notes:

1 – Turbidity results were reported in units of NTU.

2- No applicable limit present for this analyte in 18 AAC 75.345, Table C, groundwater cleanup levels.

Acronyms and Abbreviations;

NA – Not Applicable

NTU - Nephelometric Turbidity Units

Trip Blanks

Trip blanks were included in each cooler containing VOCs and low level mercury samples and analyzed at appropriate frequencies. Analytes were not detected in the trip blanks at or above the LOD.

Equipment Blanks

Equipment Blanks were analyzed at appropriate frequencies for total and dissolved metals by EPA Method 200.8. Equipment blank detections are presented in Table 4.

Sample data <10X the level of the associated equipment blank detections were qualified as "B" to indicate potential for similar contamination in the samples as shown in Table 5. All equipment blank contamination observed was <100X below the applicable regulatory limits; therefore, the impact on usability of the associated sample data was considered negligible.

	Screening Criteria	Sample Identification							
Compound in milligrams		Filter BI (Dissolved	ank Metals)	Sample Tube Blank (Total Metals)					
per Liter (mg/L)	Groundwater Cleanup Level	EBF-Lot # 10-Aug 1164639	H1558 -16 010	EBT-0816 10-Aug-16 1164639011					
		Conc.	Flag	Conc.	Flag				
200.8 Metal, Dissolved									
Aluminum		0.00203	=	0.00307	=				
Barium	2	0.000055	J	0.0000559	J				
Boron	Boron		=	0.00809	=				
Chromium	0.1	0.000239	J						
Iron		0.00633	J	0.00951	J				
Manganese		0.0000925	J	0.0000714	J				
Nickel	0.1	0.000123	J	0.0000819	J				
Silicon		0.0664	J						
Vanadium	0.26			0.000883	J				
Zinc ¹	5	0.00142	J	0.00147	J				

Table 4 Equipment Blank Detections

Notes:

1- The equipment blank detection for zinc was below the associated method blank detection for this analyte, sample data was previously qualified for zinc method blank contamination in table 3, no additional qualification to zinc sample results was made due to the equipment blank contamination.

Table 5Equipment Blank Sample Qualifications

Sample ID	Analyte	Result (mg/L)	Flag
EBF-Lot H1558	Aluminum, Dissolved	0.00203	
OW-1	Aluminum, Dissolved	0.00123	В
OW-3	Aluminum, Dissolved	0.00253	В
OW-4-0816	Aluminum, Dissolved	0.0161	В
TPW-5-0816	Aluminum, Dissolved	0.00484	В
EBT-0816	Boron, Total	0.00809	
OW-1-0816	Boron, Total	0.00565	В
OW-3-0816	Boron, Total	0.00449	В
OW-4-0816	Boron, Total	0.0301	В
TPW-5-0816	Boron, Total	0.00622	В
OW-1	Boron, Total	0.00423	В
EBF-Lot H1558	Boron, Dissolved	0.00816	
OW-3	Boron, Dissolved	0.00426	В
OW-4-0816	Boron, Dissolved	0.0278	В
TPW-5-0816	Boron, Dissolved	0.0063	В
EBF-Lot H1558	Nickel, Dissolved	0.000123	
TPW-5-0816	Nickel, Dissolved	0.000579	В
EBT-0816	Vanadium, Total	0.000883	
OW-1-0816	Vanadium, Total	0.00587	В
OW-3-0816	Vanadium, Total	0.00256	В

Reporting Limits

For non-detect results LODs were compared to applicable cleanup levels for the site. For groundwater samples, LODs were compared to 18 AAC 75.345, Table C, groundwater cleanup levels (ADEC, May 8, 2016). All results of non-detected analytes had LODs at or below the

applicable cleanup levels, except for those analytes noted in Table 6 which shows non-detected analytes with LODs above the applicable groundwater cleanup levels. All affected analytes were either PCBs by SW8082, VOCs by SW8260B, or SVOCs by SW8270D. For all analytes presented in Table 6, except for PCBs, typical laboratory technological methodology limitations resulted in a LOD which did not meet project goals. The PCB result detection limit for Aroclor-1221 was at most 4% above the cleanup level, due to the slightly reduced volume of matrix analyzed for this sample type. The analytical data for these samples and analytes is valid but the data usability is compromised for the purpose of determining with complete certainty whether the analytes were present in the affected samples below the LOD but above the regulatory levels.

For the September sampling (Event 2), alternative analysis options were evaluated and utilized to reduce the number of analytes with reporting limits above the screening criteria.

Compound Scrooning											
in milligrams per Liter (mg/L)	Criteria: 18 AAC 75 Table C ¹	ow-	1	OW-2		OW-3		OW-4-0816		TPW-5-0816	
SW8082A		Conc. F	lag	Conc. F	Flag	Conc. Flag		Conc. Flag		Conc. Flag	
Aroclor-1221	0.0005			[0.00052]	ND			Acceptable	ND	[0.000505]	ND
SW8260B											
1,2,3-Trichloropropane	0.00012	[0.0005]	ND	[0.0005]	ND	[0.0005]	ND	[0.0005]	ND	[0.0005]	ND
1,2-Dibromoethane	0.00005	[0.0005]	ND	[0.0005]	ND	[0.0005]	ND	[0.0005]	ND	[0.0005]	ND
SW8270D											
2,4-Dinitrotoluene	0.0013	[0.0052]	ND	[0.0051]	ND	[0.00505]	ND	[0.00515]	ND	[0.00505]	ND
2,6-Dinitrotoluene	0.0013	[0.0052]	ND	[0.0051]	ND	[0.00505]	ND	[0.00515]	ND	[0.00505]	ND
3,3-Dichlorobenzidine	0.0019	[0.0052]	ND	[0.0051]	ND	[0.00505]	ND	[0.00515]	ND	[0.00505]	ND
Benzo(a)Anthracene	0.0012	[0.0052]	ND	[0.0051]	ND	[0.00505]	ND	[0.00515]	ND	[0.00505]	ND
Benzo[a]pyrene	0.0002	[0.0052]	ND	[0.0051]	ND	[0.00505]	ND	[0.00515]	ND	[0.00505]	ND
Benzo[b]Fluoranthene	0.0012	[0.0052]	ND	[0.0051]	ND	[0.00505]	ND	[0.00515]	ND	[0.00505]	ND
Bis(2-Chloroethyl)ether	0.00077	[0.0052]	ND	[0.0051]	ND	[0.00505]	ND	[0.00515]	ND	[0.00505]	ND
Dibenzo[a,h]anthracene	0.00012	[0.0052]	ND	[0.0051]	ND	[0.00505]	ND	[0.00515]	ND	[0.00505]	ND
Hexachlorobenzene	0.001	[0.0052]	ND	[0.0051]	ND	[0.00505]	ND	[0.00515]	ND	[0.00505]	ND
Hexachloroethane	0.04	[0.0052]	ND	[0.0051]	ND	[0.00505]	ND	[0.00515]	ND	[0.00505]	ND
Indeno[1,2,3-c,d] pyrene	0.0012	[0.0052]	ND	[0.0051]	ND	[0.00505]	ND	[0.00515]	ND	[0.00505]	ND
N-Nitrosodimethylamine	0.000017	[0.0052]	ND	[0.0051]	ND	[0.00505]	ND	[0.00515]	ND	[0.00505]	ND
N-Nitroso-di-n-propylamine	0.00012	[0.0052]	ND	[0.0051]	ND	[0.00505]	ND	[0.00515]	ND	[0.00505]	ND
Pentachlorophenol	0.001	[0.0261]	ND	[0.0255]	ND	[0.0253]	ND	[0.0257]	ND	[0.0253]	ND

Table 6 LODs for Undetected Sample Results Exceeding Cleanup Limits

Notes:

1 - This screening level corresponds to ADEC groundwater cleanup levels of 18 AAC 75.345 Table C (May 2016).

Continuous Calibration Verifications (CCVs)

CCVs were analyzed at the appropriate frequencies. CCV data was included only in the EDDs All CCV recoveries were within acceptable limits, as reviewed in the EDDs, except as noted in Table 7 below.

Data were qualified as shown in the Table 7. In all cases, LCS and MS/MSD recoveries and RPDs were within acceptable limits. Because all other QC criteria were within acceptable limits,

the data was considered minimally impacted. For 4,4-DDD, a high bias was indicated and all associated results were non-detect. Therefore, data was not qualified and is not considered impacted. For 4,4-DDT, all affected results were at least 100-fold below the applicable cleanup level of 0.0025 mg/L listed in 18 AAC 75, Table C. All data is usable as qualified.

Work Order	Sample ID	Batch	Method	Analyte	Recovery (%)	LCL (%)	UCL (%)	Flag						
	CVC ¹ 1347020				169	50	150	NA						
			8270D	8270D SIM		Resu	ult (mg/L)							
1164639	OW-2-0816	XMS9554	XMS9554		SIM (PEST)	SIM (PEST)	4,4'-DDD	ND [0	.0000155	5]	NA			
1164639	OW-4-0816			(PE			(PEST)	(PEST)	(PEST)	(PEST)	(PEST)	(PEST)		ND [0.0000153]
1164672	TPW-5-0816						ND [0	.0000153]	NA				
	CVC1 1347020		8270D 4 SIM (PEST)		38.7	50	150	NA						
				8270D SIM		Resu	ult (mg/L))						
1164639	OW-4-0816	XMS9554			SIM	SIM	SIM	SIM	SIM	4,4'-DDT	ND [0	.0000153]	QL
1164639	OW-2-0816	(PEST			ND [0	.0000155	5]	QL						
1164672	TPW-5-0816				ND [0	.0000153]	QL						

 Table 7
 CCV Failures and Affected Data

Notes

1 – All three opening CCVs were within acceptable limits. Only the CVC shown exceeded limits.

Acronyms:

CVC – closing continuing calibration verification LCL – lower control limit UCL – upper control limit

Internal Standard Results

No internal standards were noted in the case narratives as outside of acceptance limits. Internal standard performance criteria were considered met.

Surrogate Recovery Results

Surrogate analysis was performed at the required frequencies. All surrogate recoveries were within analytical method and SGS percent recovery acceptance limits, except as noted in Table 8.

Note that for work order 1164639, samples OW-2-0816 and OW-4-0816 for pesticides via SW8270D SIM were initially extracted within the method allowed (seven day) hold time with low surrogate recovery results as shown in Table 8. The samples were then re-extracted beyond the method holding time for confirmation. The re-extraction analysis for sample OW-4-0816 had acceptable surrogate recovery, while OW-2-0816 re-extraction analysis confirmed low surrogate recovery. For both samples, the re-extract analysis confirmed the initial target analyte results reported as non-detect for all pesticide analytes. Only the data from the initial extraction performed within holding time was reported. Data were qualified as shown in Table 8. The data for the associated pesticide analytes are considered potentially bias low.

Work Order	Sample ID	Lab ID	Method Analyte	Surrogate	Sur. Rec. (%)	LCL- UCL (%)	Result	Flag				
1164639	OW-2- 0816	OW-2-	OW-2-	OW-2-	OW-2-	1164630002		Terphenyl-d14	47.1	58- 132	ND	ō
		1104039002	8270D SIM (PEST) various	2-Fluorobiphenyl	41.9	53- 106	ND	QL				
	OW-2- 0816 re-extract	OW-2-		Terphenyl-d14	44.4 ²	58- 132	ND ²					
		re-extract	1104039002		2-Fluorobiphenyl	47.1 ²	53- 106	ND ²				
	OW-4- 0816	1164639001	8270D SIM (PEST)	Terphenyl-d14 ¹	51.9	58- 132	ND	QL				

Table 8 Surrogate Recovery Exceedances and Affected Data

Notes

1 – Analytes associated with this surrogate, thus qualified, were dieldrin, endrin, endosulfan II, DDD, endrin aldehyde, DDT, endosulfan sulfate, methoxychlor, and endrin ketone.

2 – Results of re-extracted confirmation samples discussed in case narrative but are not reported, original extraction result is the reported result.

Laboratory Control Samples and Laboratory Control Duplicate Samples

LCS and LCSDs were analyzed at the appropriate frequencies. All LCS and LCSD recoveries and RPDs were within acceptable limits except as presented and qualified in Table 9. Results of non-detected analytes were not qualified based on RPD exceedances, as it was considered inappropriate to qualify non-detect values as estimated with unknown bias. All affected results were well below applicable cleanup limits (18 AAC 75, Table C). Data usability was not affected.

Note that for work orders 1164639 and 1164672, SW8270D SIM Pesticides analysis, samples OW-2-0816, OW-4-0816, and TPW-5-0816 were initially extracted within the method holding time but had LCS and LCSD recovery for Endosulfan I of 61% and 52% that were was slightly below the lower control limit of 62% as shown in Table 9 The samples were subsequently re-extracted for confirmation purposes beyond the method hold time, producing an acceptable associated LCS/LCSD recovery. The associated non-detectable sample data for Endosulfan 1 were qualified as noted in Table 9 with "QL" to indicate a potential for a similar low bias to the reporting limit as observed in the original LCS/LCSD samples. All affected sample detection limits for these non-detected sample results were at least 1,000 fold below the applicable cleanup level. Therefore, data usability was not impacted for the purpose of assessing compliance with the cleanup level.
Table 9	LCS/LCSD Recovery and Precision Qualifications
---------	--

Work Order	Sample ID	Batch	Method Analyte	LCS Recovery (%)	LCSD Recovery (%)	LCS LCL- UCL (%)	LCS RPD (%)	RPD Limit	Flag
116463, 1164672	LCS/LCSD		SW8270D	61.3	52.2	62-126	16	20	
1164620	OW-2-0816	XXX36071	SIM Pesticides Endosulfan I		ND [0.0000155]			QL
1104039	OW-4-0816				ND [0.0000153]			QL
1164672	TPW-5-0816				ND [0.0000153]			QL
	LCSD	VXX29390	SW8260B	110	122 ¹	77-121	9.9	20	
OW-2-0816 1,2-dib		1,2-dibromoethane	ND [0.0005]					1	
1104039	OW-30816			ND [0.0005]					1
	OW-4-0816			ND [0.0005]				1	
116463, 1164672	LCS/LCSD			46.7	59.9	21-107	24.8	² 20	
	OW-1-0816				NE	0.0261]			2
1164620	OW-2-0816	XXX36072	SW8270D Benzoic Acid		NE	0.0255]			2
1104039	OW-3-0816			ND [0.0253]					 ²
	OW-4-0816			ND [0.0257]				2	
1164672	TPW-5-0816			ND [0.0253]			 ²		
1164672	LCS/LCSD	VXX29367	SW8260B	92.6	115	56-143	21.4	² 20	
	TPW-5-0816		2-butanone ((MEK)		N	D [0.005]			2
	TB-1-1405			ND [0.005]				2	

Notes

1 - Since a high bias was indicated, and all associated sample results were non-detect; data was considered not impacted, and not flagged.

2 – Data were not qualified, as it was not considered appropriate to qualify non-detect results as having unknown bias (due to RPD exceedance).

Matrix Spike and Matrix Spike Duplicate Samples

LCS/LCSD and MS/MSD pairs were analyzed at the appropriate frequencies. All MS/MSD percent recoveries for samples analyzed at dilutions of five-fold or less were within acceptable limits, except as listed in Table 10

Note that for work orders 1164639 and 1164672, Method 200.8 Low Level Metals (dissolved), iron and zinc recovered outside acceptable recovery limits in the MS/MSD for parent sample TPW-5-0816. As per the methodology, a post-digestion spike was analyzed and produced recovery within acceptance criteria, indicating that matrix interferences likely caused these exceedances. Since the post digestion spike was successful, batch data (which included all samples from work order 1164639) was not affected. Only parent sample TPW-5-0816 was considered affected. All data was usable without qualification (refer to Table 10, footnote 1).

Work Order	Parent Sample Lab ID (MS/MSD)	Method Analyte	Initial Conc. (mg/L)	Amount Spiked (mg/L)	Per. Rec. MS (%)	Per. Rec. MSD (%)	LCL (%)	UCL (%)
1164639,	TPW-5-0816 (MS/MSD) ¹	200.8 Dissolved Iron	3.88	0.5	50 ¹	95.9	70	130
1164672		200.8 Dissolved Zinc	0.483	0.05	107	138 ¹	70	130

Table 10MS/MSD Recovery Exceedances

Notes

1 - Data were not qualified where the spike amount was less than one-half the parent concentration as it was considered not possible to accurately determine recoveries in these instances.

Field Duplicates

No field duplicates were collected in association with Sampling Event A. Per *July 2016 APT Groundwater Sampling Event Guidelines,* a blind field duplicate was planned to be collected for an APT well during Event 2 (which was scheduled for sampling at approximately the same time as Event A). The APT wells were postponed due to drilling delays until September. Because a blind field duplicate was planned and later collected for the associated September Event 2, the overall field duplicate frequency was considered acceptable.

Laboratory Duplicate Samples

Laboratory duplicates were analyzed at appropriate frequencies. All duplicate RPDs were within acceptable limits, except as noted below.

Note that for work orders 1164639 and 1164672, the Total Solids (a.k.a. Total Volatile Solids by Method SM21 2540B) of the laboratory duplicate sample associated with batch STS5157 had an RPD exceeding allowable limits. Associated samples were OW-2-0816, OW-4-0816, and parent sample TPW-5-0816. For these samples, there was no measure of batch precision. Therefore, total solids results for these samples were qualified with a, "QN", and were considered estimated with unknown bias. Inadequate sample volume remained for re-analysis. These samples were also analyzed past hold time (see the Holding Times section for discussion). Total solids is not regulated by 18 AAC 75, Table C. Data usability was not affected.

Summary of Data Quality Assessment

- **Precision:** Overall project precision goals were met, except as noted for several isolated analyte results as previously noted in the sections discussing LCS/LCSD (2 analytes), and Laboratory Duplicates sections (1 analyte).
- Accuracy: Overall project accuracy goals were met, except for several isolated instances as previously discussed on the sections addressing Data Packages, Sample Receipt, Hold Times, CCV, Surrogate Recovery, LCS/LCSD, and MS/MSD.
- **Representativeness**: Representativeness goals were met. The samples were collected from planned locations in accordance with the April 2016 Method Statement, July APT Sampling Guidelines, and applicable requirements and guidance documents.
- **Comparability**: Comparability goals were met. SGS laboratory provided analytical support for all methods, except Chlorophyll-a analysis which was transferred to ALS laboratory. Approved methods were used for the analysis of all samples.

- **Completeness**: Completeness goals were met. The data were 100% complete with respect to the requested analyses. No data was rejected.
- **Sensitivity:** Sensitivity goals were met overall, except for the results of 19 undetected analytes as discussed in the Reporting Limits section. For the subsequent September sampling (Event 2), alternative analytical methods with greater sensitivity were utilized and the wells were re-sampled in order to substantially reduce the number of project analyte reporting limits above the screening criteria (8 AAC 75 Table C1).

This data were considered of overall good quality and acceptable for use with the noted limitations and qualifications in this QAR. No data were rejected.

References

- Alaska Department of Environmental Conservation (ADEC), 18 AAC 75, Oil and Other Hazardous Substances Pollution Control (May 8, 2016).
- ADEC, Technical Memorandum 06-002, Environmental Laboratory Data and Quality Assurance Requirements (ADEC, March 2009).
- Alaska LNG (AKLNG), FUGRO, Method Statement, Revision 1 (April 2016).
- USEPA Document 530/SW-846, Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, fourth edition (USEPA, November 1991).
- SLR, July 2016 APT Groundwater Sampling Event Guidelines, (SLR, July 2016).
- Standard Methods for the Examination of Water and Wastewater, 21st Edition, (2005).

Attachments

Attachment 1 – ADEC Data Review Checklists

Attachment 1

ADEC Data Review Checklists

Laboratory Data Review Checklist

Completed by:	Jennifer McLean		
Title:	Project Scientist	Date: O	ctober 14, 2016
CS Report Name	Event A Sampling Kenai Wells Groundwater	Report Date:	September 2, 2016
Consultant Firm:	SLR International Corporation		
Laboratory Name	SGS North America, Inc.	Laboratory Report Numb	per: 1164639
ADEC File Numl	ber: NA	ADEC RecKey Number:	NA
1. <u>Laboratory</u> a. Did ar	ADEC CS approved laboratory rec Yes No NA	ceive and <u>perform</u> all of the su (Please explain.)	bmitted sample analyses? Comments:
b. If the labora	samples were transferred to another tory, was the laboratory performing Yes No NA (whyll-a analysis was transferred to A	"network" laboratory or sub-o the analyses ADEC CS appro (Please explain.)	contracted to an alternate oved? Comments: ington (ALS). ALS is
2. <u>Chain of Cust</u> a. COC	tody (COC) information completed, signed, and Yes No NA	dated (including released/rece (Please explain.)	ived by)? Comments:
Samples Washing samples. timefram notificat issues. D	S OW-2 and OW-4 chlorophyll-a sar gton. The ALS sample receipt form in The samples were transferred from the due to a short method hold time. If ion by SGS, including the emailed C Data was not impacted.	mples were subcontracted to A noted that COC was not includ Ravn Air to Alaska Airlines v ALS was aware of the samples COC. These samples were rece	ALS laboratory in Kelso, led in the cooler with the via SGS within a limited s due to email eived at ALS with no
b. Correc	ct analyses requested?] Yes INO INA	(Please explain.)	Comments:

3 Laboratory Samp	le Receint Document	LNG Facilities Groundwater Qua	Confidential ality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
a Sample/co	oler temperature doc	umented and within range at re	ceint $(1^\circ + 2^\circ \mathbf{C})^2$
	\sim S No	NA (Please explain.)	Comments:
A total of th criteria due t temperature of cooler tem	ree of the project coo the inherent imprec range using frozen ge perature acceptabilit	lers were received at the laboration of achieving stable cooler l ice for cooling. See QAR san y.	atory slightly below the 2°C r temperatures within a narrow aple receipt section for discussion
b. Sample pr Volatile C ∑ Ye	reservation acceptable Chlorinated Solvents, e s	e – acidified waters, Methanol petc.)?	oreserved VOC soil (GRO, BTEX, Comments:
c. Sample co	ondition documented - es INo	- broken, leaking (Methanol), z ⊠ NA (Please explain.)	zero headspace (VOC vials)? Comments:
No issues we	ere noted.		
d. If there we containers samples, e	ere any discrepancies, /preservation, sample etc.?	were they documented? For east temperature outside of accepta	xample, incorrect sample able range, insufficient or missing
🖂 Ye	s No	NA (Please explain.)	Comments:
Temperature	e was noted.		
e. Data quali	ity or usability affecte	d? (Please explain.) Comm	nents:
Regarding te considered ne	emperature, the sampl ot impacted.	e receipt form did not note any	v evidence of freezing. Data were
 <u>Case Narrative</u> a. Present an ∑ Ye 	nd understandable? s	NA (Please explain.)	Comments:
b. Discrepan	cies, errors or QC fail s X No	lures identified by the lab?	Comments:
The tempera the case narr	ature exceedances were ative.	re noted on the sample receipt	form, but was not documented in

c. Were all corrective actions documented?

No

X Yes

NA (Please explain.)

Comments:

For SW8270D SIM Pesticides, samples OW-2-0816 and OW-4-0816 were initially extracted within hold time, then were re-extracted for confirmation past the method allowed hold time due to low surrogate recovery.

For Total Solids (aka Total Volatile Solids) by Method SM21 2540B, samples OW-2-0816 and OW-4-0816 were analyzed two days past hold time. Upon receipt at the laboratory these samples were mistakenly not logged in for this analysis. Once the error was noticed, samples were analyzed promptly.

For SW8270D SIM Pesticides, for endosulfan I, samples OW-2-0816 and OW-4-0816 were reextracted for confirmation past hold time due to LCS/LCSD exceedances. Results of non-detect confirmed. Data were qualified as noted in Table 8 of the QAR.

d. What is the effect on data quality/usability according to the case narrative? Comments:

For SW8270D SIM Pesticides surrogate recovery, samples OW-2-0816 and OW-4-0816 were qualified, "QL," as noted in Table 7 of the QAR.

For Total Solids, results for these samples were qualified with a, "QN," and should be considered estimated with unknown bias. It is unlikely that this hold time exceedance caused any major impact to results.

For endosulfan I, all affected results were at least 1,000 fold below the applicable cleanup level. In all cases, data usability was not impacted.

5. Samples Results

a.	Correct analyse	s performed/1	reported as requested on COC?
	🔀 Yes	No No	NA (Please explain.)

Comments:

The ALS sample receipt forms noted that COCs were not included in the coolers with the samples. The COCs were emailed to ALS. Data was not impacted.

b. All applicable holding times met?

No No

Yes

NA (Please explain.)

Comments:

For SW8270D SIM Pesticides, samples OW-2-0816 and OW-4-0816 were initially extracted within hold time, then were re-extracted past the method allowed hold time due to low surrogate recovery.

For Total Solids (aka Total Volatile Solids) by Method SM21 2540B, samples OW-2-0816 and OW-4-0816 were analyzed two days past hold time. Upon receipt at the laboratory these samples were mistakenly not logged in for this analysis. Once the error was noticed, samples were analyzed promptly.

For SW8270D SIM Pesticides, for endosulfan I, samples OW-2-0816 and OW-4-0816 were reextracted past hold time due to LCS/LCSD exceedances. Results of non-detect confirmed. Data were qualified as noted in Table 8 of the QAR.

c.	All soils repor	ted on a dry w	eight basis?	
	Yes	No No	NA (Please explain.)	Comments:
_				

Only water samples were included in this work order.

			LNG Facilities Groundwater Qualit ا	Confidential y Sampling and Testing Report - Event 2 JSAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
d	. Are the reported project?	PQLs less th	an the Cleanup Level or the minin	num required detection level for the
	Yes	🖂 No	NA (Please explain.)	Comments:
, , , ,	LODs were compa 2016). All results o noted in Table 5 of Table 5 shows resu were PCBs by SW8	red to 18 AA f non-detect the QAR. lts of non-de 8082A, VOC	AC 75.345, Table C, groundwater c had LODs at or below the applicat tect with LODs not meeting projec s by SW8260B or SVOCs by SW8	eleanup levels (ADEC, May 8, ble cleanup levels, except as et limits. All affected analytes 3270D.
e.	. Data quality or u	sability affeo	cted?	
Г			Comme	ents:
1 ;;]]	Regarding LODs, of technological metho analytical data for t purpose of determine below the LOD but	except for PC odology limi hese samples ning with cer above the re	CBs, for all analytes presented in T itations resulted the LOD which did s and analytes is valid but the data rtainty whether the analytes were p egulatory levels.	able 5, typical laboratory l not meet project goals. The usability is compromised for the resent in the affected samples
~ c	amples			
<u>د ر</u> a.	. Method Blank			
	i. One meth	od blank rep	ported per matrix, analysis and 20 s	amples?
	🔀 Yes	∐ No	∐ NA (Please explain.)	Comments:
	ii. All metho	od blank rest	ults less than PQL?	Comments:
	Analytes were not as noted in Table 3	detected in a of the QAR.	any method blanks at or above the l	Limit of Detection (LOD), except
	iii If above l	DOI what s	amplas are affected?	
			Comme	ents:
1 t •	Associated results metals and common for qualification. Re associated sample r	that were les n laboratory esults were c esults were §	ss than or equal to five times the bla contaminants) were considered affection considered unaffected, and were no greater than five times the blank de	ank detection (ten times for ected, and were recommended t presented in Table 3, when tection or non-detect.
	iv. Do the af	fected sampl	le(s) have data flags and if so, are t	he data flags clearly defined? Comments:
	Data were qualified	d as noted in	Table 3 of the QAR.	
	v. Data qua	lity or usabil	ity affected? (Please explain.) Comme	ents:
Γ	All affected results	were well b	elow applicable project cleanup le	vels. Data usability was not
	affected.			

6.

b. Laboratory Control Sample/Duplicate (LCS/LCSD)

	\square	required Yes	per AK methon \Box No	\Box Das, LCS required per SW846) \Box NA (Please explain)	Comments:
		105			Comments.
	ii.	Metals/I samples	norganics – or ?	ne LCS and one sample duplicate re	eported per matrix, analysis and 2
		Yes	🔀 No	NA (Please explain.)	Comments:
An I	CS	and an M	S/MSD were	analyzed with each batch.	
		Accurac And pro AK102 Yes	y – All percen ject specified 75%-125%, A ⊠ No	t recoveries (%R) reported and wit DQOs, if applicable. (AK Petroleur K103 60%-120%; all other analyse NA (Please explain.)	hin method or laboratory limits? m methods: AK101 60%-120%, es see the laboratory QC pages) Comments:
Table	e 7 o	of the QA	R presents CC	V recovery exceedances and assoc	iated data.
Table	e 9 o e 10	of the QA	R presents LC	S/LCSD recovery exceedances and S/MSD recovery exceedances and	associated data.
				-	
	iv.	Precision laborator LCS/LC other and	n – All relative ry limits? And SD, MS/MSD alyses see the	e percent differences (RPD) reported project specified DQOs, if applicate, and or sample/sample duplicate. (laboratory QC pages)	ed and less than method or able. RPD reported from (AK Petroleum methods 20%; all
		Yes	🔀 No	NA (Please explain.)	Comments:
Tabl	e 9 d	of the QA	R presents LC	CS/LCSD RPD exceedances and as	sociated data.
	v.	If %R or	RPD is outsid	de of acceptable limits, what sampl Commer	les are affected? nts:
Affe	cted	data wer	e presented in	Tables 7, 9, and 10 of the QAR.	
	vi.	Do the a Yes	ffected sample	e(s) have data flags? If so, are the d	lata flags clearly defined? Comments:
Data	wei	re qualifie	ed as indicated	l in Tables 7, 9, and 10 of the QAR	
	vii.	. Data qua	ulity or usabili	ty affected? (Use comment box to	explain.)
All a	ffec	ted result	s were well be	elow applicable cleanup limits (18	AAC 75, Table C). Data
ucahi	lity	was not a	ffected		

			LNG Facilities Groundwater Qualit	Confidential y Sampling and Testing Report - Event 2 JSAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
c. S	Surrogates – O	rganics Only		
	i. Are sur Xes	rogate recoveri	es reported for organic analyses – NA (Please explain.)	field, QC and laboratory samples? Comments:
	ii. Accura And pro analyse	cy – All percen oject specified l	t recoveries (%R) reported and wi DQOs, if applicable. (AK Petroleu tory report pages)	thin method or laboratory limits? Im methods 50-150 %R; all other
	Yes	No	\square NA (Please explain.)	Comments:
Та	ble 8 of the Q	AR presents su	rrogate recovery exceedances and	associated data.
	iii. Do the flags cl	sample results vertex early defined?	with failed surrogate recoveries ha	we data flags? If so, are the data
	Xes Yes	No No	NA (Please explain.)	Comments:
Da	ta were qualif	ied as indicated	in Table 8 of the QAR.	
	iv. Data qu	ality or usabilit	ty affected? (Use the comment bo Comme	x to explain.) ents:
Da leve	ta were qualif els. All data is	ied as shown in usable as quali	the table. All affected results wer fied.	e well below applicable cleanup
d. 1 <u>S</u>	Frip blank – V Soil	olatile analyses	only (GRO, BTEX, Volatile Chlo	prinated Solvents, etc.): Water and
	i. One trij (If not,	p blank reported enter explanation	d per matrix, analysis and for each on below.)	cooler containing volatile samples?
	Yes Xes	No No	NA (Please explain.)	Comments:
	ii. Is the c (If not,	ooler used to tra a comment exp	ansport the trip blank and VOA sa blaining why must be entered belo	imples clearly indicated on the COC? w)
	Yes	No	NA (Please explain.)	Comments:
	iii. All rest ⊠ Yes	ults less than P(QL?	Comments:

	f abova DC) what com	L	NG Facilities Ground	lwater Quality Samp USAL-F	bling and Testing Rep G-GRZZZ-00-002010	Confidential ort - Event 2 6-004 Rev. 0 16-Dec-16
10. 1	I above PQ	ⁱ L, what sam	ples are	affected?	Comments:		
Not applic	able.						
v. I	Data quality	y or usability	affected	1? (Please expl	ain.) Comments:		
No impact							
e. Field Du	ıplicate						
i. C X	Dne field du Zes	uplicate subm	nitted pe	er matrix, analy A (Please expla	rsis and 10 proj in.)	ject samples? Comments:	
No field duplic Groundwater Sa well during Eve The APT wells collected for the	cates were umpling Ev int B (whic were postp September	collected in ent Guideline ch was sched oned due to o r Event B, the	n assoc es, a blin uled for drilling e overal	ciation with S nd field duplica r sampling at a delays until Se l field duplicat	ampling Ever ate was planned approximately ptember. Since e frequency wa	nt A. Per <i>July</i> d to be collected the same time e a blind field d as considered ac	2016 APT d for an APT as Event A). uplicate was ceptable.
ii. S D Y	ubmitted t es [lind to lab?	N/	A (Please expla	in.)	Comments:	
See 6 e i.							
iii. F (Precision – Recommer	All relative p nded: 30% wa	ercent o ater, 509	differences (RF % soil)	PD) less than sp	pecified DQOs?	
ł	RPD (%) =	Absolute val	ue of:	$\frac{(R_1-R_2)}{((R_1+R_2)/2)}x$	100		
Y	Where Zes [$R_1 = Sample$ $R_2 = Field Du$ No	Concen aplicate	ntration Concentration A (Please expla	in.)	Comments:	
iv. I	Data quality	y or usability	affected	1? (Use the con	nment box to e	explain why or v	why not.)

Comments:

Not applicable.

			LNG Facilities Groundwater Quality	Confidential Sampling and Testing Report - Event 2 SAL-FG-GRZZZ-00-002016-004 Rev. 0				
f.	f. Decontamination or Equipment Blank (If not used explain why).							
	Xes Yes	🗌 No	NA (Please explain.)	Comments:				
	i. All resul	ts less than PC	QL?					
	Yes	🔀 No	NA (Please explain.)	Comments:				
	Table 4 of the QA	R presents Eq	uipment Blank detections.					
_	ii. If above PQL, what samples are affected?							
			Commer	nts:				
	All samples assoc	iated with this	August 2016 Kenai Wells project	were affected.				
	iii. Data qua	ality or usabili	ty affected? (Please explain.)					
	Comments:							
1	Total zinc was also present in the associated method blank. Except for zinc, all affected sample results were below applicable project cleanup levels. For Zinc, the one result above the cleanup level was greater than ten times the equipment or method blank detection; therefore, the result was considered unaffected. Data were not qualified based on equipment blank detections. Data usability was not affected.							
7. <u>Other</u> a.	<u>Data Flags/Quali</u> Defined and app ∑ Yes	fiers (ACOE, . propriate?	AFCEE, Lab Specific, etc.)	Comments:				

Laboratory Data Review Checklist

Completed by:	Jennifer McLean			
Title:	Project Scientist		Date:	October 14, 2016
CS Report Name	Event A Sampling Kenai Wells Groundwater		Report Date:	September 2, 2016
Consultant Firm:	SLR International Corporation			
Laboratory Name	e: SGS North America, Inc.	Labora	ntory Report Nur	mber: 1164672
ADEC File Num	ber: NA	ADEC Re	cKey Number:	NA
a. Did an	n ADEC CS approved laboratory rec] Yes	eive and <u>pe</u> Please expl	<u>rform</u> all of the ain.)	submitted sample analyses? Comments:
b. If the labora	samples were transferred to another atory, was the laboratory performing Yes No NA ("network" the analyse (Please expl	laboratory or sub s ADEC CS app ain.)	o-contracted to an alternate proved? Comments:
Chlorop NELAP	ohyll-a analysis was transferred to Al accredited for this analysis.	LS laborato	ry in Kelso, Was	shington (ALS). ALS is
2. <u>Chain of Cus</u> a. COC	$\frac{\text{tody} (\text{COC})}{\text{information completed, signed, and }}$	dated (inclu Please expl	ding released/rea	ceived by)? Comments:
The CO field crew sample r 5." Data Samples Washing sample." timefran notificat issues. The AL 0816" in SGS in t Results	C included in the cooler with the sar w to SGS via email prior to receipt of name was changed to TPW-5. Prior to was not impacted. s TPW-5-0816 chlorophyll-a sample gton. The ALS sample receipt form n The sample was transferred from Ra ne due to a short method hold time. A ion by SGS, including the emailed C S sample receipt form also noted that astead of the corrected TPW-5. A cor he "Remarks" section of the revised were reported via SGS to SLR with t	mples was n of samples a co this edit, t es were subc noted that C ivn Air to A ALS was aw COC. These at for sample mment of ez COC. The the correct t	ot used. A revise t the laboratory. the first COC an contracted to AL OC was not incl laska Airlines vi vare of the sampl samples were re e TPW-5, the bo cplanation had b revised COC wa name (TPW-5). I	ed COC was sent by the On the revised COC, the d sample labels were, "W- S laboratory in Kelso, uded in the cooler with the ia SGS within a limited les due to email ceived at ALS with no ttle was labeled "W5- een provided by SLR to as not provided to ALS. Data was not impacted.

			10	LNG Facilities Groundwater Qualit	Confidential y Sampling and Testing Report - Event 2 JSAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
	b.	Correct analyses Xes	requested?	NA (Please explain.)	Comments:
3.	<u>Labor</u> a.	atory Sample Rece Sample/cooler te ∑ Yes	eipt Documenta mperature docu	tion Imented and within range at reco NA (Please explain.)	eipt $(4^\circ \pm 2^\circ C)$? Comments:
	b.	Sample preservat Volatile Chlorina X Yes	tion acceptable ated Solvents, e	 acidified waters, Methanol pr acidified waters, Methanol pr acidified waters, Methanol pr acidified waters, Methanol pr bc <	eserved VOC soil (GRO, BTEX, Comments:
	c.	Sample condition	n documented -	- broken, leaking (Methanol), ze 🛛 NA (Please explain.)	ro headspace (VOC vials)? Comments:
	N	lo issues were note	ed.		
	d.	If there were any containers/preser samples, etc.?	discrepancies, vation, sample	were they documented? For exa temperature outside of acceptab	ample, incorrect sample ole range, insufficient or missing
		Yes	No No	NA (Please explain.)	Comments:
	1	None were noted.			
	e.	Data quality or u	sability affected	d? (Please explain.) Comme	ents:
	1	No impact.			
4.	Case 1 a.	Narrative Present and unde ⊠ Yes	erstandable?	NA (Please explain.)	Comments:

			LNG Facilities Groundwater Qualit	Confidential y Sampling and Testing Report - Event 2 JSAL-FG-GRZZZ-00-002016-004 Rev. 0 16 Dec 16
	b. Discrepancies, er	rors or QC fa No	ilures identified by the lab?	Comments:
	For total suspended laboratory duplicate LCS/LCSD RPD ex sample was not from For SW8270D, the For this work order, 9 of the QAR. For SW8260B, the allowed RPD limit.	l solids (TSS) e was received acceeded allow n this project case narrativ , only sample case narrativ Acetone was	by Method SM21 2540D, the car d and analyzed past the seven day vable limits. The RPD was within . Data was not impacted. e did not note the LCS/LCSD RP TPW-5-0816 was associated with e noted that for acetone, the LCS/ not a reported analyte. Data was	se narrative noted that the method allowed hold time. acceptable limits. And the parent D exceedance for benzoic acid. h this LCS/LCSD. Refer to Table LCSD RPD exceeded the not impacted
	c. Were all correctiv	ve actions doo	cumented?	Comments:
	For total solids (aka analyzed one day pa logged in for this ar For SW8270D SIM confirmation past he the original results f noted in Table 9 of	a total volatile ast hold time. alysis. Once I Pesticides, f old time due t for samples ex the QAR.	e solids) by Method SM21 2540B Upon receipt at the laboratory the the error was noticed, samples we for endosulfan I, sample TPW-5-0 to LCS/LCSD exceedances. Resu xtracted within holding time were	8, sample TPW-5-0816 was ese samples were mistakenly not ere analyzed promptly. 0816 was re-extracted for lts of non-detect confirmed, only reported. Data were qualified as
	d. What is the effec	t on data qual	ity/usability according to the case Comme	e narrative? ents:
	For total solids, res estimated with unkr to results. For endosulfan I ar the LCS/LCSD sect In all cases, data w	ults for this s nown bias. It i nd benzoic act tion of the QA as either not i	ample was qualified with a, "QN, is unlikely that this hold time exce id, data were qualified as noted in AR for further discussion. Impacted or was usable as qualifie	" and should be considered eedance caused any major impact Table 9 of the QAR. Refer to ed.
5. <u>S</u> a	amples Results a. Correct analyses X Yes	performed/re	ported as requested on COC?	Comments:
	The ALS sample re The COC was emai	eceipt form no led to ALS. E	oted that a COC was not included Data was not impacted.	in the cooler with the sample.

U. All applicable noruling times met	b.	All	applicable	holding	times	met?
--------------------------------------	----	-----	------------	---------	-------	------

Yes \boxtimes No \square NA (Please explain.)Comments:
For total solids (aka total volatile solids) by Method SM21 2540B, sample TPW-5-0816 was
analyzed two days past hold time. Upon receipt at the laboratory these samples were mistakenly
not logged in for this analysis. Once the error was noticed, samples were analyzed promptly. Total
solids results for this sample was qualified with a, "QN," and should be considered estimated with
unknown bias. It is unlikely that this hold time exceedance caused any major impact to results;
therefore, the affected result is considered usable as qualified
For SW8270D SIM Pesticides, for endosulfan I, sample TPW-5-0816 was re-extracted for
confirmation past hold time due to LCS/LCSD exceedances. Results of non-detect confirmed, only
the original results performed within holding time were reported. Data were qualified as noted in
Table 9 of the QAR. All affected results were at least 1,000 fold below the applicable cleanup
level; therefore, data usability was not impacted.
All soils reported on a dry weight basis?

<u>Yes</u>	∐ No	🖄 NA (Please explain.)	Comments:

Only water samples were included in this work order.

d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?

Yes	🖂 No

NA (Please explain.)

Comments:

LODs were compared to 18 AAC 75.345, Table C, groundwater cleanup levels (ADEC, May 8, 2016). All results of non-detect had LODs at or below the applicable cleanup levels, except as noted in Table 6 of the QAR.

Table 5 of the QAR shows results of non-detect with LODs not meeting project limits. All affected analytes were PCBs by SW8082A, VOCs by SW8260B or SVOCs by SW8270D.

e. Data quality or usability affected?

Comments:

Regarding hold times, refer to 4d.

Regarding LODs, except for PCBs, for all analytes presented in Table 5, typical laboratory technological methodology limitations resulted the LOD which did not meet project goals. The analytical data for these samples and analytes is valid but the data usability is compromised for the purpose of determining with certainty whether the analytes were present in the affected samples below the LOD but above the regulatory levels.

6. <u>QC Samples</u>

c.

a. Method Blank

i. One me	ethod blank rep	ported per matrix, analysis and 20 s	amples?
🖂 Yes	No I	NA (Please explain.)	Comments:

ii. All method blank results less than PQL?

Analytes were not detected in any method blanks at or above the Limit of Detection (LOD), except as noted in Table 3 of the QAR.

			LNG Facilities Groundwater Qu	ality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0
Y	<i>Yes</i>	🖂 No	NA (Please explain.)	Comments: 16-Dec-16
iii. I	f above I	QL, what sar	nples are affected?	
			Com	ments:
Associated metals and for qualific associated	l results t commor ation. Re sample re	hat were less laboratory co esults were co esults were gr	than or equal to five times the ontaminants) were considered a nsidered unaffected, and were reater than five times the blank	blank detection (ten times for affected, and were recommended not presented in Table 3, when detection or non-detect.
iv. I X Y	Do the aff Tes	ected sample	(s) have data flags and if so, ar NA (Please explain.)	e the data flags clearly defined? Comments:
Data were	qualified	l as noted in 7	Table 3 of the QAR.	
v. I	Data qual	ity or usability	y affected? (Please explain.) Com	ments:
All affecte affected.	d results	were well be	low applicable project cleanup	levels. Data usability was not
i. (r X	Organics equired p 'es	– One LCS/L per AK metho	CSD reported per matrix, analy ds, LCS required per SW846)	ysis and 20 samples? (LCS/LCSD Comments:
ii. M s □ Y	/letals/In amples? 'es	organics – on No	e LCS and one sample duplica	te reported per matrix, analysis and 2 Comments:
An LCS a	nd an MS	MSD were a	analyzed with each batch.	
iii. A A Y Table 7 of Table 9 of	Accuracy And proje AK102 7: Yes the QAR the QAR	- All percent cct specified D 5%-125%, Ak No presents CCV presents LCS	recoveries (%R) reported and DQOs, if applicable. (AK Petro X103 60%-120%; all other anal NA (Please explain.) V recovery exceedances and as S/LCSD recovery exceedances	within method or laboratory limits? leum methods: AK101 60%-120%, lyses see the laboratory QC pages) Comments: sociated data. and associated data.
Table 10 of	f the QA	R presents MS	S/MSD recovery exceedances a	and associated data.
iv. F	Precision	– All relative	percent differences (RPD) rep	orted and less than method or

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 Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)

Table 9 of the QAR presents LCS/LCSD RPD exceedances and associated data.

			LNG Facilities Groundwater Quality S	Confidential Sampling and Testing Report - Event 2 AL-FG-GRZZZ-00-002016-004 Rev. 0			
	Yes	No No	NA (Please explain.)	Comments: 16-Dec-16			
	v. If %R or	RPD is outside	e of acceptable limits, what sample Commen	es are affected? ts:			
Affe	ected data were	e presented in '	Tables 7, 8, and 10 of the QAR.				
	vi. Do the af	fected samples	(s) have data flags? If so, are the da	ata flags clearly defined? Comments:			
Data	a were qualifie	d as indicated	in Tables 7, 8, and 10 of the QAR				
	vii. Data qua	lity or usability	y affected? (Use comment box to e	xplain.)			
All usab	affected results ility was not af	were well bel ffected.	low applicable cleanup limits (18 A	AAC 75, Table C). Data			
c. Sı	urrogates – Org	ganics Only					
	i. Are surro	ogate recoverie	es reported for organic analyses – fi NA (Please explain.)	ield, QC and laboratory samples? Comments:			
	 ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limit And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all oth analyses see the laboratory report pages) 						
	i es		INA (Please explain.)	Comments:			
	iii. Do the sa flags clea	mple results w arly_defined?	vith failed surrogate recoveries hav	e data flags? If so, are the data			
	Yes	No No	🔀 NA (Please explain.)	Comments:			
	iv. Data qua	lity or usability	y affected? (Use the comment box Commen	to explain.) ts:			
No	impact.						

1 7		LNG Facilities Groundwater Quality U	Confidential Sampling and Testing Report - Event 2 SAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
d. 1 <u>S</u>	Trip blank – Volatile analyses o Soil	only (GRO, BTEX, Volatile Chlo	rinated Solvents, etc.): <u>Water and</u>
	i. One trip blank reported (If not, enter explanation	per matrix, analysis and for each 1 below.)	cooler containing volatile samples?
	Yes No	NA (Please explain.)	Comments:
L	ii. Is the cooler used to tran (If not, a comment expla	asport the trip blank and VOA sat aining why must be entered below	mples clearly indicated on the COC?
	Yes No	NA (Please explain.)	Comments:
	iii. All results less than PQI ⊠ Yes □ No	_? NA (Please explain.)	Comments:
	iv. If above PQL, what sam	ples are affected? Commen	nts:
No	ot applicable.		
	v. Data quality or usability	affected? (Please explain.) Commen	nts:
No) impact.		
e. F	Field Duplicate		
	i. One field duplicate subr ∑Yes ☐ No	nitted per matrix, analysis and 10	project samples? Comments:
No Gro APT Eve dup	field duplicates were collected bundwater Sampling Event Guid Γ well during Event B (which nt A). The APT wells were pos- licate was collected for the S	ed in association with Sampling delines, a blind field duplicate was was scheduled for sampling at stponed due to drilling delays unt September Event B, the overall	g Event A. Per <i>July 2016 APT</i> as planned to be collected for an approximately the same time as il September. Since a blind field field duplicate frequency was

considered acceptable.

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			LNG Facilities Groundwat	er Quality Samplir USAL-FG	GRZZZ-00-00201	6-004 Rev. 0
ii. Sı	ubmitted b	lind to lab?				16-Dec-16
	es [🕅 NA (Please explain.)	Comments:	
				, 		
See 6 e i.						
iii. Pr (R	recision – A Recommend	All relative p ded: 30% wa	ercent differences (RPD) ter, 50% soil)	less than spe	cified DQOs?	
R	PD (%) = A	Absolute valu	ue of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \ge 100$)		
	Whoma I	D Comple	$((\mathbf{R}_1 + \mathbf{R}_2)/2)$			
	where F	$c_1 = \text{Sample}$	unlicate Concentration			
	es [$\frac{12}{10}$ No	\square NA (Please explain.)	Comments:	
				/		
iv. D	ata quality	or usability	affected? (Use the comm	ent box to exp	plain why or v	why not.)
	1 5	5	` C	1 1 1 1 1	. ,	5 /
			L L	omments:		
Not applica	ble.					
	• ,•	F • (1		1 \		
t. Decontan	ination or	Equipment	Blank (If not used explain	n why).		
$\boxtimes Ye$	ès 🗌] No	NA (Please explain.)	Comments:	
i. A	ll results le	ss than PQL	?			
	es D	⊲ No	□ NA (Please explain.))	Comments:	
)	connicitto.	
Table 4 of t	he QAR pr	esents Equip	ment Blank detections.			
ii. If	above PQI	L, what samp	bles are affected?			
			C	Comments:		
All samples	associated	d with this A	ugust 2016 Kenai Wells	project were a	affected.	
r				i -j		
iii. D	ata quality	or usability a	affected? (Please explain	.)		
			C	Comments:		
Total ring -		agant in the	accounted method blank			
Fxcept for	vas aiso pr zinc all aff	esent in the a	issociated method diank.	licable project	t cleanun leve	ls For Zinc
the one resu	lt above th	e cleanup lev	el was greater than ten ti	imes the equi	pment or met	nod blank
detection; th	erefore, th	e result was	considered unaffected.			
Data were r	not qualifie	d based on e	quipment blank detection	ns. Data usabi	lity was not a	ffected.

		LNG Facilities Groundwater Qu	ality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0
7.	Other Data Flags/Qualifiers (ACOE,	AFCEE, Lab Specific, etc.)	16-Dec-16
	a. Defined and appropriate?		
	Yes No	NA (Please explain.)	Comments:

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Laboratory Data Review Checklist

Completed by:	Jennifer McLean
Title:	Project Scientist Date: October 14, 2016
CS Report Name: Consultant	Event A Sampling Kenai Wells GroundwaterReport Date:August 16, 2016
Firm:	SLR International Corporation
Laboratory Name	SGS North America, Inc. Laboratory Report Number: 1164707
ADEC File Numb	Der: NA ADEC RecKey Number: NA
1. <u>Laboratory</u> a. Did ar	ADEC CS approved laboratory receive and <u>perform</u> all of the submitted sample analyses? Yes No NA (Please explain.) Comments:
b. If the s labora	samples were transferred to another "network" laboratory or sub-contracted to an alternate tory, was the laboratory performing the analyses ADEC CS approved? Yes No NA (Please explain.) Comments:
2. <u>Chain of Cust</u> a. COC i	ody (COC) nformation completed, signed, and dated (including released/received by)? Yes No NA (Please explain.) Comments:
b. Correc	et analyses requested? Yes No NA (Please explain.) Comments:
3. <u>Laboratory Sa</u> a. Sampl	Imple Receipt Documentation e/cooler temperature documented and within range at receipt $(4^\circ \pm 2^\circ C)$? Yes No NA (Please explain.)
and with	berature blank was included in the cooler with samples. Samples were received "chilled" in 8 hours of sampling which is considered compliant by SGS per the sample receipt form.

_			LNG Facilities Groundwater Qualit	Confidential y Sampling and Testing Report - Event 2 JSAL-FG-GRZZZ-00-002016-004 Rev. 0		
b.	Sample preservative Volatile Chlorina	tion acceptable ated Solvents, o	= – acidified waters, Methanol preserved VOC soil (GRO, BTEX, etc.)?			
	Yes Yes	🗌 No	NA (Please explain.)	Comments:		
c.	Sample condition	n documented -	- broken, leaking (Methanol), zer NA (Please explain.)	ro headspace (VOC vials)? Comments:		
N	lo issues were note	ed.				
d.	If there were any containers/preser samples, etc.?	discrepancies vation, sample	, were they documented? For exa e temperature outside of acceptab	mple, incorrect sample le range, insufficient or missing		
	Yes	🗌 No	NA (Please explain.)	Comments:		
1	None were noted.					
e.	Data quality or u	sability affecte	ed? (Please explain.) Comme	nts:		
Ι	Data was not impac	cted.				
Case N	Narrative Procent and under	retendeble?				
a.	Yes		NA (Please explain.)	Comments:		
b.	Discrepancies, en	rrors or QC fai	lures identified by the lab? ⊠ NA (Please explain.)	Comments:		
1	None were noted.					
c.	Were all correcti	ve actions doc	umented? NA (Please explain.)	Comments:		
ľ	None were taken.					
d.	What is the effec	t on data quali	ty/usability according to the case Comme	narrative? nts:		
1	No impact.					
<u>Sampl</u> a.	es Results Correct analyses	performed/rep	orted as requested on COC?			
_	Yes	∐ No	∐ NA (Please explain.)	Comments:		

4.

5.

	h	All applicable k	olding times .	LNG Facilities Groundwater Quality U	Confidential Sampling and Testing Report - Event 2 SAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16			
	D.		\boxtimes No	\square NA (Please explain.)	Comments:			
	c.	All soils reporte	ed on a dry we	ight basis? ⊠ NA (Please explain.)	Comments:			
	(Only water samp	les were includ	ded in this work order.				
	d.	Are the reported	d PQLs less th	an the Cleanup Level or the minim	um required detection level for the			
		Yes	🗌 No	NA (Please explain.)	Comments:			
	e.	Data quality or	usability affec	cted?	nts			
	1	No impost		Comme				
		INO Impact.						
6.	a.	imples Method Blank i. One me X Yes	thod blank rep	oorted per matrix, analysis and 20 so NA (Please explain.)	amples? Comments:			
		ii. All metl ⊠ Yes	hod blank resu	Its less than PQL?	Comments:			
		iii. If above	PQL, what sa	imples are affected? Comme	nts:			
	1	Not applicable.						
		iv. Do the a	affected sampl	e(s) have data flags and if so, are th NA (Please explain.)	ne data flags clearly defined? Comments:			
		v. Data qu	ality or usabili	ity affected? (Please explain.) Comme	nts:			
	1	No impact.						

			LNG Facilities Groundwater Qualit	y Sampling and Testing Report - Event 2 JSAL-FG-GRZZZ-00-002016-004 Rev. 0
b. Lab	oratory Contr	ol Sample/Du	plicate (LCS/LCSD)	16-Dec-16
i	i. Organics	– One LCS/L	CSD reported per matrix, analysis	s and 20 samples? (LCS/LCSD
[Yes		\square NA (Please explain.)	Comments:
Only f	fecal coliform	ı analysis was	included in this work order. App	propriate QC was analyzed.
i	ii. Metals/In	organics – on	e LCS and one sample duplicate r	reported per matrix, analysis and 2
[Yes	🗌 No	X NA (Please explain.)	Comments:
No inc	organics were	e associated w	vith this work order.	
i [iii. Accuracy And proje AK102 75 ⊠ Yes	– All percent ect specified I 5%-125%, AF	recoveries (%R) reported and wi DQOs, if applicable. (AK Petroleu K103 60%-120%; all other analys NA (Please explain.)	thin method or laboratory limits? Im methods: AK101 60%-120%, es see the laboratory QC pages) Comments:
i	iv. Precision laboratory LCS/LCS	– All relative / limits? And D. MS/MSD.	percent differences (RPD) report project specified DQOs, if applic and or sample/sample duplicate.	ed and less than method or able. RPD reported from (AK Petroleum methods 20%: all
[other anal Yes	yses see the l	aboratory QC pages)	Comments:
<u> </u>	v. If %R or]	RPD is outsid	e of acceptable limits, what samp Comme	les are affected?
Not ap	oplicable.			
	vi. Do the aff	fected sample	(s) have data flags? If so, are the ∑ NA (Please explain.)	data flags clearly defined? Comments:
	vii. Data qual	ity or usabilit	y affected? (Use comment box to	explain.)
No im	ipact.			
c. Surr	rogates – Orga	anics Only		
i [i. Are surrog	gate recoverie	es reported for organic analyses – 🔀 NA (Please explain.)	field, QC and laboratory samples? Comments:
Surrog	gate is not and	alyzed for fec	al coliform by SM21 9222D.	

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ii.	Accuracy – All percent recoveries (%R) reported and within method or laboratory limits?
	And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other
	analyses see the laboratory report pages)

Yes	No	MA (Please explain.)	Comments:
iii. Do th flags □ Yes	ne sample results clearly defined?	with failed surrogate recoveries ha	ve data flags? If so, are the data Comments:
iv. Data	quality or usabili	ty affected? (Use the comment box Comme	x to explain.) nts:
No impact.			
. Trip blank – <u>Soil</u>	Volatile analyses	s only (GRO, BTEX, Volatile Chlo	prinated Solvents, etc.): Water and
i. One	trip blank reporte	d per matrix, analysis and for each	cooler containing volatile samples
(If no Ves	ot, enter explanati	on below.) MA (Please explain.)	Comments:
Trip blanks are	e not required for	fecal coliform by SM21 9222D.	
ii. Is the (If no □ Yes	e cooler used to tr ot, a comment exp No	ansport the trip blank and VOA sat blaining why must be entered below NA (Please explain.)	mples clearly indicated on the CO w) Comments:
iii. All r □ Yes	esults less than PO	QL? NA (Please explain.)	Comments:
iv. If ab	ove PQL, what sa	mples are affected?	

Comments:

Not applicable.

v. Data quality or usability affected? (Please explain.)

Comments:

No impact.

				LNG Facilities Gr	oundwater Quality Sampl USAL-F0	Confidential ling and Testing Report - Event 2 G-GRZZZ-00-002016-004 Rev. 0
e. Fie	eld D	uplicate				16-Dec-16
	i.	One field Yes	duplicate subm	iitted per matrix, ar	alysis and 10 proj plain.)	ect samples? Comments:
No fi Groun APT Event duplic consid	eld o <i>idwa</i> well A). cate	duplicates <i>ater Sampli</i> during Ev The APT v was collect l acceptabl	were collected ing Event Guid ent B (which wells were pos cted for the S e.	d in association w <i>lelines</i> , a blind field was scheduled for tponed due to drilli eptember Event B	rith Sampling Even d duplicate was pla sampling at appro- ng delays until Sep s, the overall field	ent A. Per <i>July 2016 APT</i> anned to be collected for an eximately the same time as ptember. Since a blind field d duplicate frequency was
	ii.	Submitted Yes	blind to lab?	🔀 NA (Please ex	xplain.)	Comments:
See 6	5 e i.					
	iii.	Precision - (Recomme	– All relative p ended: 30% wa	ercent differences (ater, 50% soil)	(RPD) less than sp	ecified DQOs?
		RPD (%) =	= Absolute val	ue of: (R_1-R_2) $((R_1+R_2)/2)$	x 100	
		Where	$R_1 = $ Sample	Concentration	•	
		Yes	$R_2 = Field Dt$ \square No	NA (Please ex	ion (plain.)	Comments:
	iv.	Data quali	ty or usability	affected? (Use the	comment box to ex	xplain why or why not.)

Comments:

Not applicable.

			LNG Facilities Groundwater Quality San USAL-	Confidential npling and Testing Report - Event 2 FG-GRZZZ-00-002016-004 Rev. 0		
f. Dec	ontamination	or Equipment	Blank (If not used explain why).	10-Dec-10		
[Yes	🗌 No	NA (Please explain.)	Comments:		
Equipn	nent blanks ar	e not required	for fecal coliform by SM21 9222D.			
i	i. All results less than PQL?					
[Yes	🗌 No	NA (Please explain.)	Comments:		
i	ii. If above PQL, what samples are affected?					
	Comments:					
Not ap	oplicable.					
i	ii. Data quali	ity or usability	affected? (Please explain.)			
			Comments:			
No im	pact.					
<u>Other Data</u> a. Defi	Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.) a. Defined and appropriate?					
[X Yes	No No	NA (Please explain.)	Comments:		

7.

Report

LABORATORY DATA QUALITY ASSURANCE REVIEW

GROUNDWATER MONITORING EVENT 2: SEPTEMBER 2016

NIKISKI, ALASKA ALASKA LNG

November 2016

Prepared by: Jennifer McLean and Jason Gray **Reviewed by:** Wendy Hansen

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SLR Project Number 105.00148.16001

ACRONYMS AND ABBREVIATIONS

%	percent
AAC	Alaska Administrative Code
AK	Alaska
ADEC	Alaska Department of Environmental Conservation
ALS	ALS Laboratory in Kelso, Washington
°C	degrees Celsius
CCV	continuing calibration verification
COC	chain of custody
COD	chemical oxygen demand
DL	detection limit
DOC	dissolved organic carbon
DRO	diesel range organics
EDDs	electronic data deliverable
EPA	Environmental Protection Agency
GRO	gasoline range organics
LCL	lower control limit
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LOD	limit of detection
LOQ	limit of quantitation
mg/L	milligrams per liter
MŠ	matrix spike
MSD	matrix spike duplicate
ND	
INK	not reported
NELAP	Not reported National Environmental Laboratory Accreditation Program
NELAP PARCCS	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and
NELAP PARCCS	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity
NELAP PARCCS PCB	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl
NR NELAP PARCCS PCB QA	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance
NR NELAP PARCCS PCB QA QAR	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review
NR NELAP PARCCS PCB QA QAR QC	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control
NR NELAP PARCCS PCB QA QAR QC QCS	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control
NR NELAP PARCCS PCB QA QAR QC QCS RPD	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control sample relative percent difference
NR NELAP PARCCS PCB QA QAR QC QCS RPD RRO	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control sample relative percent difference residual range organics
NR NELAP PARCCS PCB QA QAR QC QCS RPD RRO SDG	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control sample relative percent difference residual range organics sample delivery group
NR NELAP PARCCS PCB QA QAR QC QCS RPD RRO SDG SIM	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control sample relative percent difference residual range organics sample delivery group selective ion monitoring
NR NELAP PARCCS PCB QA QAR QC QCS RPD RRO SDG SIM SLR	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control sample relative percent difference residual range organics sample delivery group selective ion monitoring SLR International Corporation
NR NELAP PARCCS PCB QA QAR QC QCS RPD RRO SDG SIM SLR SGS	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control sample relative percent difference residual range organics sample delivery group selective ion monitoring SLR International Corporation SGS North America, Inc.
NK NELAP PARCCS PCB QA QAR QC QCS RPD RRO SDG SIM SLR SGS SM	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control sample relative percent difference residual range organics sample delivery group selective ion monitoring SLR International Corporation SGS North America, Inc. Standard Methods
NR NELAP PARCCS PCB QA QAR QC QCS RPD RRO SDG SIM SLR SGS SM SVOCS	not reported National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control sample relative percent difference residual range organics sample delivery group selective ion monitoring SLR International Corporation SGS North America, Inc. Standard Methods semi-volatile organic compounds
NK NELAP PARCCS PCB QA QAR QC QCS RPD RRO SDG SIM SLR SGS SM SVOCS TDS	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control sample relative percent difference residual range organics sample delivery group selective ion monitoring SLR International Corporation SGS North America, Inc. Standard Methods semi-volatile organic compounds total dissolved solids
NK NELAP PARCCS PCB QA QAR QC QCS RPD RRO SDG SIM SLR SGS SM SVOCS TDS TKN	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control sample relative percent difference residual range organics sample delivery group selective ion monitoring SLR International Corporation SGS North America, Inc. Standard Methods semi-volatile organic compounds total dissolved solids total kjeldahl nitrogen
NK NELAP PARCCS PCB QA QAR QC QCS RPD RRO SDG SIM SLR SGS SM SVOCS TDS TKN TOC	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control sample relative percent difference residual range organics sample delivery group selective ion monitoring SLR International Corporation SGS North America, Inc. Standard Methods semi-volatile organic compounds total dissolved solids total kjeldahl nitrogen total organic carbon
NK NELAP PARCCS PCB QA QAR QC QCS RPD RRO SDG SIM SLR SGS SM SVOCS TDS TKN TOC TSS	Not reported National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control sample relative percent difference residual range organics sample delivery group selective ion monitoring SLR International Corporation SGS North America, Inc. Standard Methods semi-volatile organic compounds total dissolved solids total kjeldahl nitrogen total organic carbon total suspended solids
NK NELAP PARCCS PCB QA QAR QC QCS RPD RRO SDG SIM SLR SGS SM SVOCS TDS TKN TOC TSS UCL	National Environmental Laboratory Accreditation Program precision, accuracy, representativeness, comparability, completeness, and sensitivity polychlorinated biphenyl quality assurance quality assurance review quality control quality control sample relative percent difference residual range organics sample delivery group selective ion monitoring SLR International Corporation SGS North America, Inc. Standard Methods semi-volatile organic compounds total dissolved solids total kjeldahl nitrogen total organic carbon total suspended solids upper control limit

Introduction

This report summarizes a review of analytical data for groundwater samples collected between September 16, 2016 and September 23, 2016 at Nikiski, Alaska. Samples were collected by SLR International Corporation (SLR). SGS North America, Inc (SGS) provided analytical support to the project. SGS maintains a current Alaska Department of Environmental Conservation (ADEC) Contaminated Sites approval number (UST-005) for analytical methods of interest, as applicable. Chlorophyll-a analysis was transferred to ALS laboratory in Kelso, Washington (ALS). ALS is National Environmental Laboratory Accreditation Program (NELAP) accredited for this analysis. Table 1 provides a sample receipt summary, by sample delivery groups (SDG). Table 2 provides a summary of methods, analytes, and SDGs.

SDG	Date Received by SGS	Temperature Blank	Date Received by ALS	Temperature Blank
		1.0 °C	(1)	(1)
1165399	9/13/2016	2.6 °C	(1)	(1)
		3.4 °C	(1)	(1)
1165536	0/18/2016	6.0 °C	(1)	(1)
1100000	3/10/2010	5.9 °C	(1)	(1)
		12.6 °C	(1)	(1)
1165550	9/19/2016	1.9 °C	(1)	(1)
		3.6°C	(1)	(1)
1165574	9/20/2016	3.9 °C	(1)	(1)
1165595	9/20/2016	5.1 °C	(1)	(1)
	9/21/2016	3.5 °C	9/23/2016	-1.3°C
1165600		1.7 °C		
1103022		2.2 °C		
		4.7 °C		
1165638	9/22/2016	1.6 °C	9/23/2016	-1.3°C
1165651	0/22/2016	2.3 °C	(1)	(1)
1165651	9/22/2010	2.1 °C	(1)	(1)
1165672	0/22/2016	2.4 °C	(1)	(1)
1103072	9/23/2010	1.4 °C	(1)	(1)
1165682	9/23/2016	1.9 °C	(1)	(1)

 Table 1
 Sample Receipt Summary

Notes:

1 – Only chlorophyll-a samples were shipped to ALS. Refer to Table 2.

Acronyms:

°C – degrees Celsius

SDG – sample delivery group

Analytical Method	Analyte	SDG	Matrix
EPA 200.8 Low Level	26 Metals (Total)	1165399 1165536 1165550 1165574 1165622 1165651 1165672	
EPA 200.8 Low Level	27 Metals (Dissolved)		
AK101	GRO		
AK102	DRO		
AK103	RRO		
EPA 300.0	Chloride,		
EPA 300.0	Fluoride		
EPA 300.0	Sulfate		
SM21 2130B	Turbidity		
SM21 2320B	Alkalinity		
SM21 2340B	Hardness		
SM21 2540C	TDS		
SM21 2540D	TSS		
SM21 4500-H B	pH		
		1165399	
SM21 4500-NO3-F		1165550	Groundwater
	Nitroto /Nitrito	1165574	
	Nitrate/Nitrite	1165622	
		1165651	
		1165672	
EPA 300.0	Nitrate/Nitrite	1165536	
		1165672	
EPA 1631 E	Mercury Total	1165399	
ELIXIOULE	Mereary rotar	1165550	
EPA 1631 E	Mercury Dissolved	1165672	
SM21 9222D	Fecal Coliform	1165595	
		1165638	
		1165682	
SM21 10200 H	Chlorophyll-a	1165622	
		1165638	
EPA 410.4	COD		
SM21 2540B	Total Solids		
SM21 4500P-B,E	Ortho Phosphorous		
SM21 4500P-B,E	Total Phosphorous		
SM21 4500-N-D	TKN by Phenate	1165622	
SM21 4500-NH3-G	Ammonia	1165651	
SM 5310B	DOC		
SM 5310B	TOC		
SW8082A	PCBs		
SW8270D	SIM Pesticides		

Table 2Method, Analyte, and SDG Association

Acronyms:

AK – Alaska

- COD chemical oxygen demand
- DOC dissolved organic carbon DRO – diesel range organics
- EPA Environmental Protection Agency
- GRO gasoline range organics
- PCBs polychlorinated biphenyls
- RRO residual range organics
- SIM selective ion monitoring
- SDG sample delivery group
- SM Standard Methods
- SVOCs semi-volatile organic compounds
- TDS total dissolved solids
- TKN total kjeldahl nitrogen

TOC – total organic carbon

TSS - total suspended solids

Laboratory final reports were provided as Level II deliverables, and included documentation of each delivery group chain-of-custody (COC) and sample receipt condition. Microsoft Access compatible electronic data deliverables (EDDs) for each report were also provided. The PDF laboratory reports and the EDDs are provided electronically in Appendix E.

Quality Assurance Program

A quality assurance (QA) program was followed for this project that addressed project administration, sampling, quality control, and data review. SLR adhered to required and established sampling and COC protocols. The select laboratory maintains an internal quality assurance program and standard operating procedures.

The analytical data was reviewed for consistency with any project specific requirements (Method Statement, April 2016), *ADEC Technical Memorandum, Environmental Laboratory Data and Quality Assurance* (ADEC 2009a) requirements, analytical method criteria and laboratory criteria. An ADEC Laboratory Data Review Checklist was completed for each SDG, and is included as Attachment 1 to this Quality Assurance Review (QAR). A review for any anomalies to the project requirements for precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS) are noted in this QAR, and any data qualifications discussed.

The data review included the following, as applicable:

- Reviewing COC records for completeness, signatures, and dates;
- Identifying any sample receipt or preservation anomalies that could impact data quality;
- Verifying that quality control (QC) blanks [e.g,. field blanks (equipment blanks; trip blanks; etc.); equipment blanks; etc.] were properly prepared, identified, and analyzed;
- Evaluating whether laboratory reporting limits met project goals;
- Reviewing calibration verification recoveries, to include confirming that the laboratory did not identify that any Continuing Calibration Verification (CCV) recoveries or other calibration related criteria as being outside applicable acceptance limits;
- Reviewing case narratives for any discussion of any internal standard recoveries outside of acceptance limits. Internal standard performance was not otherwise presented in the report or in the electronic data deliverable and was reviewed only from the case narratives
- Verifying that surrogate analyses were within recovery acceptance limits;
- Verifying that Laboratory Control Samples (LCS), Laboratory Control Sample Duplicates (LCSD), Matrix Spike (MS), and Matrix Spike Duplicate (MSD) recoveries were within acceptance limits;
- Evaluating the result relative percent difference (RPD) between primary and duplicate field samples, LCS/LCSD, MS/MSD, and laboratory duplicates; and

Providing an overall assessment of laboratory data quality and qualifying sample results as necessary.

Data Qualifications

As part of the quality assurance review, qualifiers (i.e. flags) were applied to datum as determined necessary based on specified criteria, or professional judgement. In all cases, the basis for qualification and the applied data flag are discussed in this QAR. Table 3 provides a list of potential qualifiers (i.e., flags). These data flags were appended to the data as appropriate.

Qualifier	Definition
Q	One or more laboratory quality control criteria (e.g., LCS recovery, surrogate spike recovery) failed. Where applicable, an "H", "L", or "N" was appended to indicate positive, negative, or unknown bias, respectively.
J	The analyte was positively identified but the result was outside the calibration range, between the limit of quantitation (LOQ) and the detection limit (DL); the quantitation was an estimate.
М	The concentration was an estimate due to a sample matrix quality control failure. Where applicable, an "H", "L", or "N" was appended to indicate positive, negative, or unknown bias, respectively.
В	Blank contamination: The analyte was positively identified in the blank (e.g., trip blank, method blank, equipment blank, etc.) associated with the sample and the concentration reported for the sample was less than five times that of the blank (ten times for metals and common laboratory contaminants methylene chloride and acetone).
Р	Sample preservation requirements were not satisfied.

Table 3Data Qualifiers

A discussion of the project data quality relative to PARCCS goals and summary of any anomalies or failures requiring data qualifiers follows.

Data Validation

Data Packages

The data packages were checked for transcription errors, omissions, or other anomalies. No issues were noted with regards to the data packages.

Sample Receipt

The sample receipt documentation was checked for anomalies. The following issues were noted with regards to the receipt of the samples.

Work order 1165550

• Only two pages of the three page COC were signed as, "Relinquished By", by SLR personnel. Samples were in SLR custody with the exception of shipping, from the time of collection until delivery to the laboratory. And all samples were analyzed for the methods and analytes intended and requested. Data quality or usability was not impacted.

Preservation (Chemical and Temperature)

Samples were appropriately preserved, upon receipt by SGS laboratory, except as noted below.
Work order 1165550

• One of three coolers (identified as cooler 8) was received at the laboratory with a temperature blank at 12.6°C. Only mercury samples by EPA Method 1631 were included in this cooler. EPA Method 1631 does not have a temperature requirement. Data was not impacted.

Work orders 1165399, 1165550, 1165622, 1165638, 1165672, and 1165682

As noted in Table 1, one cooler associated with each of these SDGs (six coolers) were • received at a temperature below 2.0 degrees Celcius (°C). This was considered due to the inherent imprecision of achieving stable cooler temperatures within a narrow temperature range using frozen gel ice for cooling. The ADEC specifies a temperature preservation requirement of 4±2°C. Cooler temperatures below 2°C could result in freezing of the sample with the potential for damage to the integrity of the sample container but there is no concern that unfrozen samples would otherwise be impacted if received below 2°C. Cooler temperatures and any anomalous sample conditions were documented in the SGS data package (sample receipt form). In cases where the cooler receipt temperatures were below 2°C, the laboratory inspected sample containers and made note of any ice present in the samples or other indication of compromised containers. Provided no concerns were identified, samples were analyzed and reported with no qualification due to temperature. No ice or evidence of freezing was noted for any of the samples within these coolers. Therefore, reported sample data are considered acceptable without qualification.

Holding Times

Analytical holding times were satisfied for all sample results, except as noted below.

<u>General</u>

Analysis of pH was conducted both in the field and at the laboratory. The field pH measurement was taken immediately, during sample collection, and should be considered the primary data. The laboratory analysis was requested to be performed within three days of sample collection as a potential QA check. However, the laboratory pH results are beyond the method holding time of 15 minutes because it is not practical to analyze the samples within that time frame. No data were qualified. The field result was considered the primary value.

Work order 1165638

• For Fecal Coliform by method SM21 9222D, samples MW-13B-0916 and APT-2-0916 were received past the method allowed eight hour hold time. Theses samples were recollected and the replacement samples were analyzed within hold time as work order 1165682. The fecal coliform results from this work order were not reported.

Work order 1165550

• For SM21 4500-NO3-F nitrate and nitrite, samples MW-50A-0916 and MW-50B-0916 were initially analyzed within the method specified holding time of 48 hours. However, a

laboratory Quality Control Sample (QCS) recovered below the lower control limit of 90%, at 45% and 29% respectively for nitrate and nitrite. Samples were re-analyzed. The re-analysis for MW-50B-0916 occurred five hours outside of the holding time and, therefore, nitrate and nitrite results for MW-50B-0916 were qualified with a "QL" to indicate a potential low bias. The data were considered usable as qualified. Impact was considered minimal because the re-analysis occurred shortly past the method holding time.

Work order 1165651

For nitrate/nitrite by method SM21 4500-NO3-F, samples for APT-2-0916 and MW-138B-0916 were initially analyzed within the method specified (48 hour) hold time; however, inadvertently, no method required closing CCV was analyzed by the laboratory as required by the method. The samples were re-analyzed by the laboratory approximately 72 hours (3 days) outside of the method holding time, for comparison. For all samples, the re-analysis confirmed the initial target analyte results. Only the data from the initial analysis performed within holding time was reported by SGS. The data were considered estimated and flagged "QN". Refer to the CCV section for further discussion. The data were considered usable, as qualified. The impact to the reported result is likely minimal.

Laboratory Method Blanks

Laboratory method blanks were analyzed at the appropriate frequencies. Analytes were not detected in any method blanks at or above the Limit of Detection (LOD), except as noted in Table 4. Associated results that were less than, or equal to, five times the blank detection (ten times for common laboratory contaminants and metals) were considered affected, and were qualified as shown in Table 4. In cases where sample results were greater than five times the blank detection or non-detect, data were considered unaffected and were not qualified. This data are not shown in Table 4.

In all cases, affected results were well below applicable project cleanup levels. It is not uncommon method performance to observe several low level detections in the method blanks. Data usability was not affected.

Work Order	Sample ID	Lab ID	Method	Analyte	Result (mg/L)	Flag	Cleanup Level (mg/L)
	MB	1353650	EPA 1631 E	Total and Dissolved Mercury	0.00000893	J	
	PQ-W1-0916	1165399006	EPA 1631 E	Total Mercury	0.0000153	В	0.002
1165399	TPW-1-0916	1165399002	EPA 1631 E	Total Mercury	0.00000648	J, B	
	TPW-2-0916	1165399001	EPA 1631 E	Total Mercury	0.00000636	J, B	
	TPW-2-0916	1165399010	EPA 1631 E	Dissolved Mercury	0.00000577	J, B	(1)
	TPW-9-0916	1165399005	EPA 1631 E	Total Mercury	0.000000669	J, B	0.002

Table 4	Method Blank Detections and Sample Qualifications
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						16-D	ec-16
Work Order	Sample ID	Lab ID	Method	Analyte	Result (mg/L)	Flag	Cleanup Level (mg/L)
	MB	1354713	AK102	DRO	0.299	J	
	MW82A-0916	1165536001	AK102	DRO	0.314	J, B	
	MW82B-0916	1165536002	AK102	DRO	0.362	J, B	1.5
1165536	MW27B-0916	1165536003	AK102	DRO	0.282	J, B	
	MW74A-0916	1165536004	AK102	DRO	0.287	J. B	
	MW74B-0916	1165536005	AK102	DRO	0.278	J. B	
1165536, 1165550	MB	1353297	200.8 Low Level	Total and Dissolved Zinc	0.00111	J	5
	MW82B-0916	1165536002	200.8 Low Level	Total Zinc	0.0101	В	5
	MW27B-0916	1165536003	200.8 Low Level	Total Zinc	0.00709	В	_
	MW74A-0916	1165536004	200.8 Low Level	Total Zinc	0.0103	В	
	MW74B-0916	1165536005	200.8 Low Level	Total Zinc	0.00432	В	
1165536	MW82A-0916	1165536006	200.8 Low Level	Dissolved Zinc	0.000551	J, B	
	MW82B-0916	1165536007	200.8 Low Level	Dissolved Zinc	0.00835	В	
	MW27B-0916	1165536008	200.8 Low Level	Dissolved Zinc	0.00387	В	(1)
	MW74A-0916	1165536009	200.8 Low Level	Dissolved Zinc	0.000941	J, B	
	MW74B-0916	1165536010	200.8 Low Level	Dissolved Zinc	0.00237	J, B	
	MW-50A-0916	1165550006	200.8 Low Level	Total Zinc	0.00638	B	
	MW-50B-0916	1165550007	200.8 Low Level	Total Zinc	0.00216	J. B	
1165550	MW-87Z-0916	1165550008	200.8 Low Level	Total Zinc	0.00709	B	
	MW-87B-0916	1165550009	200.8 Low Level	Total Zinc	0.00614	В	5
	EB-H1558- 0916	1165550010	200.8 Low Level	Total Zinc	0.00464	В	
	EB1-0916	1165550011	200.8 Low Level	Total Zinc	0.005	В	
	MW-50A-0916	1165550019	200.8 Low Level	Dissolved Zinc	0.00436	В	
	MW-50B-0916	1165550020	200.8 Low Level	Dissolved Zinc	0.00532	В	
	MW-87Z-0916	1165550021	200.8 Low Level	Dissolved Zinc	0.00562	В	(1)
	MW-87B-0917	1165550022	200.8 Low Level	Dissolved Zinc	0.00509	В	
1165550, 1165574, 1165622,	MB	1354959	AK102	DRO	0.38	J	
	MW-50A-0916	1165550006	AK102	DRO	0.447	J, B	
1165550	MW-50B-0916	1165550007	AK102	DRO	0.447	J, B	
1105550	MW-87Z-0916	1165550008	AK102	DRO	0.389	J, B	1.5
	MW-87B-0916	1165550009	AK102	DRO	0.354	J, B	
	MW-39A-0916	1165574001	AK102	DRO	0.383	J, B	
1165574	MW-39B-0916	1165574002	AK102	DRO	0.361	J, B	
	MW-62A-0916	1165574003	AK102	DRO	0.437	J, B	
1165622	APT-1-0916	1165622001	AK102	DRO	0.486	J, B	
	MB	1353280	SM21 4500NO3-F	Nitrite-N	0.0522	J	
1165550	MW-50A-0916	1165550006	SM21 4500NO3-F	Nitrite-N	0.0476	J, B	(1)
	MW-50B-0916	1165550007	SM21 4500NO3-F	Nitrite-N	0.0512	J, B	
1165574, 1165651	MB	1357605	EPA 300.0	Chloride	0.101	J	
	MB	1353303	200.8 Low Level	Total and Dissolved Zinc	0.000942	J	5
1165574	MW-39A-0916	1165574001	200.8 Low Level	Total Zinc	0.00541	В	
	MW-39A-0916	1165574004	200.8 Low Level	Dissolved Zinc	0.00461	В	(1)
	MW-62A-0916	1165574006	200.8 Low Level	Dissolved Zinc	0.0054	В	(1)

						- 16-D	ec-16
Work Order	Sample ID	Lab ID	Method	Analyte	Result (mg/L)	Flag	Cleanup Level (mg/L)
	MB	1355983	AK102	DRO	0.366	J	
1165622	APT-9-0916	1165622004	AK102	DRO	0.427	J, B	1.5
1100022	APT-3-0916	1165622005	AK102	DRO	0.518	J, B	
	MB	1357610	EPA 300.0	Chloride	0.104	J	(1)
1165622, 1165651	MB	1358671	SM21 4500P-B,E	Total Phosphorus	0.0081	J	(1)
1165622, 1165651, 1165672	MB	1355979	200.8 Low Level	Total and Dissolved Zinc	0.000531	J	5
1165672	MW-91A-0916	1165672018	200.8 Low Level	Dissolved Zinc	0.00212	J, B	(1)
	MB	1355205	SM 5310B	TOC	0.37	J, B	(1)
1165622	APT-1-0916	1165622001	SM 5310B	TOC	1.82	В	
	APT-9-0916	1165622004	SM 5310B	TOC	1.63	В	(1)
1165651	APT-2-0916	1165651001	SM 5310B	TOC	1.69	В	
1165622, 1165651	MB	1357605	EPA 300.0	Fluoride	0.082	J	(1)
1165600	APT-1-0916	1165622001	EPA 300.0	Fluoride	0.137	J, B	
1100022	APT-9-0916	1165622004	EPA 300.0	Fluoride	0.139	J, B	1
	APT-2-0916	1165651001	EPA 300.0	Fluoride	0.15	J, B	1
1105051	MW-138B- 0916	1165651002	EPA 300.0	Fluoride	0.119	J, B	
100001	MB	1355417	SM21 4500P-B,E	Ortho Phosphate-P	0.0086	J	
	MW-138B- 0916	1165651002	SM21 4500P-B,E	Ortho Phosphate-P	0.0303	В	(1)

Notes: 1 – Values shown are *Groundwater Cleanup Levels* (ADEC, 18 Alaska Administrative Code (AAC) 75, Table C). In cases where no value is shown ["(1)"], there was no cleanup level listed in the regulation. **Abbreviations:** mg/L – milligrams per liter

Trip Blanks

Trip blanks were included in each cooler containing volatile organic compounds (VOCs) and low level mercury samples and analyzed at appropriate frequencies. Analytes were not detected in the trip blanks at or above the LOD.

Equipment Blanks

Equipment Blanks were analyzed at appropriate frequencies for total and dissolved metals by EPA Method 200.8. Equipment blank detections are presented in Table 5.

Sample data less than 10 times the level of the associated equipment blank detections are shown in Table 6. These results were qualified as "B" to indicate potential for similar contamination in the samples as that of the equipment blanks. All equipment blank contamination observed was less than 100 times below ADEC 18 AAC 75 Table C cleanup levels; therefore, the impact on usability of the associated sample data was considered negligible.

It is not uncommon to observe low level detections in equipment blanks for the metals shown in Table 5.

		Screenin	g Criteria		Sample Identification				
Compound in milligrams	Permit AKG003000		ADE	ADEC Table C Groundwater Cleanup Level		lank Metals)	Sample Tube Blank (Total Metals)		
per Liter (mg/L)	Table	Table 3 Limits				EB-H1558-0916 16-Sep-16 11665550010		EBT-0816 16-Sep-16 1165550011	
	Total	Dissolved	Total Dissolved		Conc.	Flag	Conc.	Flag	
200.8 Metals									
Aluminum	0.087				0.00139	J	0.00341	=	
Barium	2		2				0.000162	J	
Calcium					0.0193	J	0.025	J	
Cobalt	0.05						0.000013	J	
Copper	0.0031	HD	1		0.000215	J			
Iron	1						0.00843	J	
Magnesium							0.00944	J	
Manganese	0.05				0.0000788	J	0.000122	=	
Nickel	0.0082	HD	0.1		0.000106	J	0.000115	J	
Zinc	0.081	HD	5		0.00464	B ¹	0.005	B ¹	

Table 5 Equipment Blank Detections

Notes: 1 – The equipment blank detection for zinc was associated with a method blank detection for this analyte. Sample data was previously qualified for zinc method blank contamination in Table 4.

Table 6 Equipment Blank Sample Qualifications

Sample ID	Analyte	Result (mg/L)	Flag
EB-H1558-0916	Aluminum, Dissolved	0.00139	J
APT-2-0916	Aluminum, Dissolved	0.00387	В
MW27B-0916	Aluminum, Dissolved	0.00946	В
MW-39A-0916	Aluminum, Dissolved	0.0105	В
MW-39B-0916	Aluminum, Dissolved	0.012	В
MW-50A-0916	Aluminum, Dissolved	0.00338	В
MW-50B-0916	Aluminum, Dissolved	0.00158	J, B
MW-62A-0916	Aluminum, Dissolved	0.00981	В
MW82A-0916	Aluminum, Dissolved	0.00212	В
MW82B-0916	Aluminum, Dissolved	0.00845	В
MW-87B-0917	Aluminum, Dissolved	0.0137	В
MW-87Z-0916	Aluminum, Dissolved	0.0125	В
MW-91A-0916	Aluminum, Dissolved	0.00194	J, B
EB-H1558-0916	Copper, Dissolved	0.000215	J
APT-1-0916	Copper, Dissolved	0.000202	J, B
APT-2-0916	Copper, Dissolved	0.00025	J, B
APT-9-0916	Copper, Dissolved	0.000216	J, B
MW-138B-0916	Copper, Dissolved	0.00143	В
MW27B-0916	Copper, Dissolved	0.000237	J, B
MW-39A-0916	Copper, Dissolved	0.000339	J, B
MW-39B-0916	Copper, Dissolved	0.000484	J, B
MW-50A-0916	Copper, Dissolved	0.000238	J, B
MW-50B-0916	Copper, Dissolved	0.000262	J, B
MW-62A-0916	Copper, Dissolved	0.000251	J, B
MW74A-0916	Copper, Dissolved	0.000267	J, B
MW82B-0916	Copper, Dissolved	0.000403	J, B
MW-87B-0917	Copper, Dissolved	0.000232	J, B
MW-87Z-0916	Copper, Dissolved	0.00022	J, B
MW-91A-0916	Copper, Dissolved	0.000389	J.B

Sample ID	Analyte	Result (mg/L)	Flag
EB-H1558-0916	Nickel, Dissolved	0.000106	J
APT-1-0916	Nickel, Dissolved	0.000823	В
APT-9-0916	Nickel, Dissolved	0.000806	В
MW-39A-0916	Nickel, Dissolved	0.000589	J, B
MW-50A-0916	Nickel, Dissolved	0.000585	J, B
MW74A-0916	Nickel, Dissolved	0.000364	J, B
MW82A-0916	Nickel, Dissolved	0.000426	J, B
EB-H1558-0916	Zinc, Dissolved	0.00464	B ¹
APT-1-0916	Zinc, Dissolved	0.0366	В
APT-9-0916	Zinc, Dissolved	0.034	В
MW-138B-0916	Zinc, Dissolved	0.02	В
MW27B-0916	Zinc, Dissolved	0.00387	В
MW-39A-0916	Zinc, Dissolved	0.00461	В
MW-39B-0916	Zinc, Dissolved	0.0243	В
MW-50A-0916	Zinc, Dissolved	0.00436	В
MW-50B-0916	Zinc, Dissolved	0.00532	В
MW-62A-0916	Zinc, Dissolved	0.0054	В
MW74A-0916	Zinc, Dissolved	0.000941	J, B
MW74B-0916	Zinc, Dissolved	0.00237	J, B
MW82A-0916	Zinc, Dissolved	0.000551	J, B
MW82B-0916	Zinc, Dissolved	0.00835	В
MW-87B-0917	Zinc, Dissolved	0.00509	В
MW-87Z-0916	Zinc, Dissolved	0.00562	В
MW-91A-0916	Zinc, Dissolved	0.00212	J, B
EB1-0916	Zinc, Total	0.005	B ¹
MW27B-0916	Zinc, Total	0.00709	В
MW-39A-0916	Zinc, Total	0.00541	В
MW-50A-0916	Zinc, Total	0.00638	В
MW-50B-0916	Zinc, Total	0.00216	J, B
MW-62A-0916	Zinc, Total	0.0157	В
MW74A-0916	Zinc, Total	0.0103	В
MW74B-0916	Zinc, Total	0.00432	В
MW82B-0916	Zinc, Total	0.0101	В
MW-87B-0916	Zinc, Total	0.00614	В
MW-87Z-0916	Zinc, Total	0.00709	В
MW-91A-0916	Zinc, Total	0.00925	В

Reporting Limits

For non-detect results, LODs were compared to applicable cleanup levels for the site. For groundwater samples, LODs were compared to 18 AAC 75.345, Table C, Groundwater Cleanup Levels (ADEC, May 8, 2016). All results of non-detected analytes had LODs at or below the applicable cleanup levels, except for those analytes noted in Table 7 which shows non-detected analytes with LODs above the applicable groundwater cleanup level. All affected analytes were polychlorinated biphenyls (PCBs) by SW8082. The PCB LOD for Aroclor-1221 was at most 8 percent above the cleanup level, due to the slightly reduced volume of matrix analyzed for this sample. In all cases, where the LOD was above the cleanup level, the detection limit (DL) was below the applicable cleanup level. The DL was considered usable for the purpose of determining that Aroclor-1221 was not present in the samples above regulatory levels. Therefore, data usability was not compromised.

	Metho	bd		PCBs
	Compound in milligra	ms per liter (r	ng/L)	Aroclor-1221
Screening Criteria	ADEC Table C	Groundwater	Cleanup Level	0.0005
		00/20/2016	Result	ND
	APT-1-0916	10.20	[LOD]	[0.00051]
		10.52	[DL]	[0.000316]
		09/21/2016	Result	ND
	APT-2-0916		[LOD]	[0.000515]
		14.00	[DL]	[0.00032]
Sample		09/20/2016	Result	ND
Identification	APT-3-0916		[LOD]	[0.000515]
Identification		10.52	[DL]	[0.00032]
	APT-9-0916	00/20/2016	Result	ND
	(Blind Duplicate of	10.22	[LOD]	[0.00054]
	APT-1)	10.32	[DL]	[0.000333]
		09/21/2016	Result	ND
	MW-138B-0916	10:25	[LOD]	[0.00052]
		10.20	[DL]	[0.000323]

Table 7 LODs and DLs for Undetected Sample Results Exceeding Cleanup Levels

Abbreviations:

DL – detection limit LOD – limit of detection

ND – non-detect

Continuous Calibration Verifications (CCVs)

CCVs were analyzed at the appropriate frequencies. CCV data was included only in the EDDs, but not in the case narratives. All CCV recoveries were within acceptable limits, as reviewed in the EDDs, except as noted in the Table 8. Associated data were qualified as shown in the Table 8, and were considered potentially bias high or low based on CCV recovery. Because the CCV recovery was only slightly outside of control limits and LCS recovery was within limits, the impact on usability of the associated sample data was considered minimal. Data was considered usable, as qualified.

Work order 1165651

 For nitrate/nitrite by method SM21 4500-NO3-F, samples for APT-2-0916 and MW-138B-0916 were initially analyzed within the method specified (48 hours) hold time; however, no method required closing CCV was analyzed. The samples were reanalyzed by the laboratory approximately 72 hours (3 days) outside of the method holding time, for comparison. For all samples, the re-analysis confirmed the initial target analyte results. Only the data from the initial analysis performed within holding time was reported by SGS. The data were considered estimated and flagged QN, as previously noted in the holding time section.

Internal Standards

No internal standards were noted in the case narratives as outside of acceptance limits. Internal standard performance criteria were considered met.

Work Order	Sample ID	Batch	Method	Analyte	Recovery (%)	LCL (%)	UCL (%)	Flag		
1165536, 1165550, 1165574	CCV 1354019				120	85	115			
					Resu					
1165536	MW27B-0916				1	QH				
1165536	MW74A-0916				1	QH				
1165536	MW74B-0916				1	QH				
1165536	MW82A-0916		000.0		1	15.1				
1165536	MW82B-0916	MMS9544	200.8	Silicon	14			QH		
1165550	EB-H1558-0916		LOW Level		ND (0.050)			(1)		
1165550	MW-50A-0916				14.5			QH		
1165550	MW-50B-0916				15.8 16.6			QH		
1165550	MW-87B-0917							QH		
1165550	MW-87Z-0916						17.2			QH
1165574	MW-39A-0916				14.3			QH		
1165574	MW-39B-0916				1	4.4		QH		
1165574	MW-62A-0916				1	5.3		QH		
					Recovery (%)	LCL (%)	UCL (%)			
4405000	CCV 1357571				82.8	85	115			
1165622,	CCV 1357572				81.1	85	115			
1165672	CCV 1357569		200.9		84.1	85	115			
1103072	CCV 1357571	MMS9568		Silicon	82.8	85	115			
			LOW Level		Result (mg/L)					
1165622	APT-3-0916				5	5.85		QL		
1105022	APT-9-0916				1	1.4		QL		

Table 8 CCV Failures and Affected Data

Notes:

1 – The CCV recovery was high, indicating a high bias; therefore, this nondetect value was not qualified. **Abbreviations:**

LCL - lower control limit

UCL – upper control limit

Surrogate Recovery Results

Surrogate analysis was performed at the required frequencies. All surrogate recoveries were within analytical method and SGS percent recovery acceptance limits, except as noted in Table 9.

Work order 1165622

 Samples APT-1-0916, APT-3-0916, and APT-1-0916 MSD for pesticides via SW8270D SIM were initially extracted within the method allowed (seven day) hold time with low surrogate recovery results as shown in Table 9. The samples were then re-extracted six days beyond the method holding time. The re-extraction analysis for all samples had acceptable surrogate recovery, 75.0% for APT-1-0916, 66.6% for APT-3-0916, and 71.6% for APT-1-0916 MSD. For all samples, the re-extract analysis confirmed the initial target analyte results reported as non-detect for all pesticide analytes. Only the data

from the initial extraction performed within holding time was reported. Data^{16-Dec-16} qualified as shown in Table 9. The data for the associated pesticide analytes in the referenced samples are considered estimated with a potentially low bias. Both a low surrogate recovery and a missed holding time would result in potential low bias. The data were considered usable, with consideration for the qualification.

Table 9	Surrogate Recovery Exceedances and Affected Data	
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Work Order	Sample ID	Lab ID	Method Analyte	Surrogate	Sur. Rec. (%)	LCL- UCL (%)	Result (mg/L)	Flag
	APT-1-0916	1165622001	8270D SIM	2-Fluorobiphenyl	51.7	53-106	ND	QL ¹
1165622	APT-3-0916	1165622005	8270D SIM	2-Fluorobiphenyl	47.3	53-106		QL ¹
	APT-3-0916	1165622005	PEST	Terphenyl-d14	20.2	58-132	ND	QL ²
1165622, 1165651	APT-1-0916 MSD ³	1165622003	8270D SIM PEST	2-Fluorobiphenyl	51.7	53-106	(3)	(3)
	APT-1-0916 MS	1165622002	AK102	5a Androstane	121	50-150	(4)	(4)
1165622	LCS	1355984	AK102	5a Androstane	122	60-120	(4)	(4)
	LCSD	1355985	AK102	5a Androstane	122	60-120	(4)	(4)

Notes:

1 – Analytes alpha BHC, beta BHC, gamma BHC, delta BHC, heptachlor, Aldrin, heptachlor epoxide, gamma chlordane, alpha chlordane, endosulfan I, and DDE were associated with this surrogate and were, therefore, qualified.

2 – Analytes dieldrin, endrin, endosulfan II, DDD, endrin aldehyde, DDT, endosulfan sulfate, methoxychlor, and endrin ketone were associated with this surrogate and were, therefore, qualified.

3 – For pesticides, the surrogate recovery was within limits in all associated project samples. Analyte recovery was within limits in all quality control samples, except for endosulfan I as indicated in Table 10. Endosulfan I data were qualified as indicated in Table 10.

4 – For DRO, the surrogate recovery was within limits in all associated project samples. In addition, the DRO analyte recovery was acceptable in all quality control samples (eg. LCS, LCSD, MS, MSD,...etc.). Therefore, not data were qualified.

Abbreviations:

NA – not applicable

LCL – lower control limit

SDG – sample delivery group

UCL – upper control limit

Laboratory Control Samples and Laboratory Control Duplicate Samples

LCS and LCSDs were analyzed at the appropriate frequencies. All LCS and LCSD recoveries and RPDs were within acceptable limits.

Work orders 1165622 and 1165651

Samples APT-1-0916, APT-2-0916, APT-3-0916, APT-9-0916, MW-13B-0916, APT-1-0916 MS/MSD, for pesticides via SW8270D SIM were initially extracted within the method allowed (seven day) hold time with low endosulfan I recovery in the associated LCS/LCSD, as shown in Table 10. The samples were re-extracted five to six days beyond the method holding time. The re-extraction analysis had acceptable LCS/LCSD recovery for endosulfan I (68.4% and 67.3%, respectively). For all samples, the re-extract analysis confirmed the initial target analyte results reported as non-detect for endosulfan I. Only the data from the initial extraction performed within holding time was reported. Data were qualified as shown in Table 10. The data for the associated pesticide analytes are considered potentially bias low. Both a low surrogate recovery and a missed holding time would result in potential low bias. The data were considered usable, with consideration for the qualification.

Work Order	Sample ID	Lab ID	Batch	Method Analyte	LCS LCSD Recovery (%) (%)		Flag	
1165622,		1354416/			50.2	56.2		
1165651	LU3/LU3D	1354417	VVV26285				(Rec. Limit	
	APT-1-0916	1165622001			ND [0.0000155]		QL	
1165622 APT-9-0916	APT-9-0916	1165622004	XXX30385	6270D SIM FEST	ND [0.0000158]		QL	
	APT-3-0916	1165622005	Endosulari	Enuosuilan	ND [0.0	000153]	QL	
1165651	APT-2-0916	1165651001			ND [0.0	000153]	QL	
1100001	MW-138B-0916	1165651002			ND [0.0	000155]	QL	
1165622	1165622 I CS/I CSD 1355984/		XXX36436	AK102 5a Androstane	122	122	(1)	
		1355985	/00.00100	(surr)	(Rec. Limit	s 60-120%)	(.)	

Table 10 LCS/LCSD Recovery and Precision Qualifications

Notes:

1 – Target analyte (DRO) concentrations were within acceptable limits in the LCS/LCSD, and all associated project samples had acceptable surrogate recovery. No data were qualified.

Matrix Spike and Matrix Spike Duplicate Samples

LCS/LCSD and MS/MSD pairs were analyzed at the appropriate frequencies. All MS/MSD percent recoveries and RPDs for samples analyzed at dilutions of five-fold or less were within acceptable limits, except as listed in Table 11. MS/MSD recoveries were not evaluated, or listed, when the parent sample concentrations were greater than four times that of the spike amount, or when the MS/MSD were analyzed at a dilution of five-fold or greater due to matrix or high analyte concentration. In these cases, it was not considered possible to accurately determine recoveries. In cases where the LCS was within acceptable limits and the MS and/or MSD exceeded QC limits only the parent sample results were considered affected and qualified. In these cases, when the parent sample was not from a project work order, data were not presented in Table 11. In cases where a high bias was indicated, only detected results are recommended for qualification.

Work Order	Parent Sample Parent Lab ID	Method	Analyte	Initial conc. (mg/L)	Amount Spiked (mg/L)	Rec. MS (%)	Rec. MSD (%)	LCL (%)	UCL (%)	Flag
1165536, 1165550	MW82A-0916 1165536001	200.8 Low Level	Total Barium	0.0212	0.025	139	139	70	130	(1)
1165550	MW-87B-0916 1165550009	SM21 4500NO3-F	Nitrate	ND [0.05]	5	49	50	90	110	QL
1165550	MW-87B-0916	SM21	Nitrate	ND [0.05]	2.5	48	50	00	110	QL
1105550	1165550009	4500NO3-F	Nitrite	ND [0.05]	2.5	51	51	90	110	QL
1165622	APT-1-0916	EPA 300.0	Chloride	19.7	5	83	82	90	110	QL
1165574	MW-39A-0916 1165574001	200.8 Low Level	Total Aluminum	0.088	0.05	211	199	70	130	(1)
1165622, 1165651	APT-1-0916 1165622010	200.8 Low Level	Dissolved Aluminum	0.0188	0.05	136	130	70	130	(1)
1165651	APT-1-0916 1165622001	8270D SIM (PEST)	Endosulfan I	ND [0.0000153]	0.00025 5	62.7	57	62	126	QL

Table 11 MS/MSD Recovery Exceedances

Notes: 1 – The post digestion spike was successful; therefore, data were not qualified.

Field Duplicates

The field duplicate sample frequency is presented in Table 12. Parent Sample and Field Duplicate pairs are presented in Table 13. Field Duplicate RPD exceedances are presented in Table 14. For the purposes of field duplicate frequency, Event A samples collected in August were combined with this September sampling event. Due to unavoidable drilling delays the samples were collected approximately one month apart. The frequency satisfied the requirement of one per 10 samples or less per matrix and analyte. Field duplicates were submitted blind to the laboratory.

All results qualified due to parent sample/field duplicate RPD exceedances were well below the 18 AAC Table C cleanup levels. The impact of the field duplicate precision exceedances was considered negligible. The data were considered usable. The higher value is recommended for comparison to cleanup levels.

Analytical Method	Analyte	Number of Primary Samples	Number of Field Duplicates	Number of Primary Samples	Number of Field Duplicates	Total Number of Primary Samples	Total Number of Field Duplicates
200.9 and and	25 Motolo Totol	Event A				24	2
200.8 Low Level	25 Metals Total	5	0	19	<u> </u>	24	<u> </u>
200.6 LOW Level	Arsenic Total	5	0	24	3	29	3
200.8 Low Level	Dissolved	5	0	19	3	24	3
AK101	GRO	5	0	19	3	24	3
AK102	DRO	5	0	19	3	24	3
AK103	RRO	5	0	19	3	24	3
EPA 300.0	Chloride,	5	0	19	3	24	3
EPA 300.0	Fluoride	5	0	19	3	24	3
EPA 300.0	Sulfate	5	0	19	3	24	3
SM21 2130B	Turbidity	5	0	19	3	24	3
SM21 2320B	Alkalinity	5	0	19	3	24	3
SM21 2340B	Hardness	5	0	19	3	24	3
SM21 2540B	Total Solids	5	0	4	1	9	1
SM21 2540C	TDS	5	0	19	3	24	3
SM21 2540D	TSS	5	0	19	3	24	3
SM21 4500-H B	pН	5	0	19	3	24	3
SM21 4500- NO3-F	Nitrate	0	0	10	2	10	2
SM21 4500- NO3-F	Nitrite	0	0	10	2	10	2
EPA 300.0	Nitrate	5	0	5	1	10	1
EPA 300.0	Nitrite	4	0	5	1	9	1
EPA 1631 E	Mercury Total	5	0	19	3	24	3
EPA 1631 E	Mercury Dissolved	5	0	19	3	24	3
SM21 9222D	Fecal Coliform	3	0	4	1	7	1
SM21 10200 H	Chlorophyll-a	3	0	4	1	7	1
EPA 410.4	COD	3	0	4	1	7	1
SM21 4500P-B,E	Ortho Phosphate	3	0	4	1	7	1
SM21 4500P-B,E	Total Phosphorous	3	0	4	1	7	1
SM21 4500-N-D	TKN by Phenate	3	0	4	1	7	1

Table 12	Field Dupl	licate Fred	uencv. Metł	nods. and Analves

					00/12 / 0 0/12	00 00_0.0	16 Dog 16
Analytical Method	Analyte	Number of Primary Samples	Number of Field Duplicates	Number of Primary Samples	Number of Field Duplicates	Total Number of Primary Samples	Total Number of Field Duplicates
		Event A	(August)	Event 2 (September)		
SM21 4500- NH3-G	Ammonia	3	0	4	1	7	1
SM 5310B	DOC	3	0	4	1	7	1
SM 5310B	TOC	3	0	4	1	7	1
SW8082A	PCBs	3	0	4	1	7	1
SW8270D	SIM Pesticides	3	0	4	1	7	1
SW8270D	SVOC	5	0	24 ¹	3 ¹	29	3 ¹
SW8260	VOC	5	0	24 ¹	3 ¹	29	3 ¹

Notes:

1 - This analysis was performed by TestAmerica Inc.

 Table 13
 Field Duplicate Identification

SDG	Parent Sample ID	Duplicate Sample ID	All RPDs acceptable (Y/N)
1165622	APT-1-0916	APT-9-0916	N
1165550	MW-87B-0916	MW-87Z-0916	N
1165399	TPW-1-0916	TPW-9-0916	N

Table 14Field Duplicate Precision Exceedances

		ADEC Table C	Sa	ample lo	lentification			
Method	Analyte	Groundwater Cleanup Level	APT-1-0	916	APT-9-09	916	RPD (%)	Flag
		••••••••••••••••••••••••••••••••••••••	Conc.	Flag	Conc.	Flag		
EPA 200.8 Metals	Lead, Total	0.015	0.000204	=	0.000355	=	54	MN
			MW-87B-	0916	MW-87Z-0	0916	RPD	Flog
			Conc.	Flag	Conc.	Flag	(%)	гіаў
EPA 200.8 Metals	Lead, Total	0.015	0.000469	=	0.000296	=	45	MN
			TPW-1-0	916	TPW-9-0	916	RPD	Flog
			Conc.	Flag	Conc.	Flag	(%)	гау
	Aluminum, Total		0.02	=	0.00967	=	70	MN
	Antimony, Total	0.006	0.000254	=	0.000166	=	42	MN
EDA 200 9 Matala	Cobalt, Total		0.000177	=	0.000118	=	40	MN
EPA 200.6 Wetais	Copper, Total	1	0.00657	=	0.00372	=	55	MN
	Iron, Total		6.26	=	3.71	=	51	MN
	Nickel, Total	0.1	0.000771	=	0.000561	J	32	MN
SM21 2130B	Turbidity (NTU)		18	=	13	=	32	MN
SM21 2540D	Total Suspended Solids		9.6	=	19.2	=	67	MN

1 – Reporting units in this table are in mg/L unless otherwise specified in parentheses.

Laboratory Duplicate Samples

Laboratory duplicates were analyzed at appropriate frequencies. All duplicate RPDs were within acceptable limits, except as noted below.

Work order 1165399

 For Total Suspended Solids (TSS) by Method SM21 2540D, both of the two laboratory duplicates associated with batch STS5201 RPDs exceeding allowable limits. Associated samples were TPW-2-0916, TPW-9-0916, and parent sample TPW-1-0916. The batch duplicate (with a non-project parent sample) was likely non-homogeneous, as reanalysis within hold time yielded similar data. The LCS/LCSD recoveries and associated RPD were within acceptable limits; therefore, only the parent samples were considered impacted. The result for parent sample TPW-1-0916 was qualified "MN" to indicate it is an estimated value with unknown bias. The data were considered usable, as qualified.

Work order 1165672

 For Total Suspended Solids by Method SM21 2540D, the laboratory duplicate associated with batch STS5226 had an RPD exceeding allowable limits. The only associated sample was MW-91A-0916. Because the LCS/LCSD established batch precision, only the parent sample, not associated with this project was affected. All data was usable without qualification.

Overall Assessment

Precision, Accuracy, Representativeness, Comparability, Completeness, and Sensitivity Summary

- Precision: Overall project precision goals were met. There were a few cases where analyte results were qualified based on field duplicate RPD (Table 14). There was one qualification based on laboratory duplicate RPD.
- Accuracy: Overall project accuracy goals were met, except for several isolated instances as previously noted in the Hold Times, Method Blank, Equipment Blank, CCV, Surrogate Recovery, LCS/LCSD, and MS/MSD sections.
- Representativeness: Representativeness goals were met. The samples were collected from planned locations in accordance with the April 2016 Method Statement, July APT Sampling Guidelines, and applicable requirements and guidance documents.
- Comparability: Comparability goals were considered acceptable. SGS laboratory provided analytical support for all methods, except Chlorophyll-a. This analysis was performed by ALS, for all samples. Approved methods were used for the analysis of all samples. It should be noted that SGS used two different methods for nitrate/nitrite analysis. Methods used were EPA 300.0 and SM21 4500-NOS-F. The data were considered usable.
- Completeness: Completeness goals were met. The data were 100% complete with respect to analysis because no data were rejected.
- Sensitivity: Sensitivity goals were considered met. There were some typical low level detections for a few analytes in method blanks and for metals in equipment blanks that resulted in qualified data.

This data were considered of overall good quality and acceptable for use with the noted limitations and qualifications in this QAR. No data were rejected.

References

- Alaska Department of Environmental Conservation (ADEC), 18 AAC 75, Oil and Other Hazardous Substances Pollution Control (May 8, 2016).
- ADEC, Technical Memorandum 06-002, Environmental Laboratory Data and Quality Assurance Requirements (ADEC, March 2009).
- Alaska LNG (AKLNG), FUGRO, Method Statement, Revision 1 (April 2016).
- USEPA Document 530/SW-846, Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, fourth edition (USEPA, November 1991).
- SLR, July 2016 APT Groundwater Sampling Event Guidelines, (SLR, July 2016).
- Standard Methods for the Examination of Water and Wastewater, 21st Edition, (2005).

Attachments

Attachment 1 – ADEC Data Review Checklists

Attachment 1

ADEC Data Review Checklists

Laboratory Data Review Checklist

Completed by:	Jennifer McLean
Title:	Project Scientist Date: November 2, 2016
CS Report Name:	Event 2 Sampling Kenai WellsReport Date:September 30, 2016Groundwater
Firm:	SLR International Corporation
Laboratory Name:	SGS North America, Inc. Laboratory Report Number: 1165399
ADEC File Numb	er: NA ADEC RecKey Number: NA
1. <u>Laboratory</u> a. Did an	ADEC CS approved laboratory receive and <u>perform</u> all of the submitted sample analyses? Yes No NA (Please explain.) Comments:
b. If the selection laborate	amples were transferred to another "network" laboratory or sub-contracted to an alternate ory, was the laboratory performing the analyses ADEC CS approved? Yes No NA (Please explain.) Comments:
2. <u>Chain of Custo</u> a. COC ir	ody (COC) iformation completed, signed, and dated (including released/received by)? Yes No NA (Please explain.)
b. Correct	t analyses requested? Yes INO INA (Please explain.) Comments:
3. <u>Laboratory San</u> a. Sample	mple Receipt Documentatione/cooler temperature documented and within range at receipt $(4^\circ \pm 2^\circ C)$?YesNoNA (Please explain.)Comments:
Table 1 c at the labo cooler ten evidence sample da	of the QAR provides a sample receipt summary. Six of the project coolers were received pratory slightly below the 2°C criteria due to the inherent imprecision of achieving stable nperatures within a narrow temperature range using frozen gel ice for cooling. No ice or of freezing was noted for any of the samples within these coolers. Therefore, reported ata are considered acceptable without qualification.

	Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0
b. 5	ample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?
	Yes No NA (Please explain.) Comments:
с.	ample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)? Yes No NA (Please explain.) Comments:
No	issues were noted.
d.]	f there were any discrepancies, were they documented? For example, incorrect sample ontainers/preservation, sample temperature outside of acceptable range, insufficient or missing amples, etc.?
	Yes No NA (Please explain.) Comments:
Te	nperature was noted.
e.]	Data quality or usability affected? (Please explain.) Comments:
Re con	garding temperature, the sample receipt form did not note any evidence of freezing. Data were sidered not impacted.
. <u>Case Na</u> a.]	rrative resent and understandable?
	Yes No NA (Please explain.) Comments:
b.]	Discrepancies, errors or QC failures identified by the lab? Yes No NA (Please explain.) Comments:
Th cas	e temperature exceedance was noted on the sample receipt form, but was not documented in the narrative.
с. У	Vere all corrective actions documented? Yes No NA (Please explain.) Comments:
A duj	non-project sample was re-analyzed for TSS within hold time to confirm that a laboratory licate RPD exceedance was due to sample heterogeneity.
d. Y	What is the effect on data quality/usability according to the case narrative? Comments:
Re	fer to the Laboratory Duplicates section of the QAR for discussion. All data was usable as lified.

		LNG Facilities Groundwater Quality Samplin USAL-FG-	Confidential g and Testing Report - Event 2 GRZZZ-00-002016-004 Rev. 0
5. <u>s</u>	Samples Results		16-Dec-16
	a. Correct analyses performed/reported	d as requested on COC?	
	\boxtimes Yes \square No \square] NA (Please explain.)	Comments:
	The ALS sample receipt forms noted The COCs were emailed to ALS. Data	that COCs were not included in the a was not impacted.	coolers with the samples.
	b. All applicable holding times met?] NA (Please explain.)	Comments:
	For this work order, yes.		
	c. All soils reported on a dry weight b	asis?	
	\Box Yes \Box No \boxtimes	NA (Please explain.)	Comments:
	Only water samples were included in	this work order.	
	d. Are the reported PQLs less than the project?	Cleanup Level or the minimum rec	quired detection level for the
	Yes \square No] NA (Please explain.)	Comments:
	For this work order, yes.		
	e. Data quality or usability affected?		
		Comments:	
	No impact.		
6. <u>(</u>	<u>QC Samples</u>		
	a. Method Blank		0
	\square Yes \square No \square] NA (Please explain.)	Comments:
	ii. All method blank results les	s than PQL?] NA (Please explain.)	Comments:
	Analytes were not detected in any me as noted in Table 4 of the QAR.	thod blanks at or above the Limit o	f Detection (LOD), except

iii. If above PQL, what samples are affected?

Comments:

	Commen	IS.
Associated results that were less t common laboratory contaminants shown in Table 4. Results were co when associated sample results we	han, or equal to, five times the bla and metals) were considered affect onsidered unaffected and not quali- ere greater than five times the blar	ank detection (ten times for cted, and were qualified as fied nor shown on Table 4, nk detection or non-detect.
iv. Do the affected sample(s \Box Yes \Box No	s) have data flags and if so, are the NA (Please explain.)	e data flags clearly defined? Comments:
Data were qualified as noted in Ta	able 4 of the QAR.	
v. Data quality or usability	affected? (Please explain.) Commen	its:
In all cases, affected results were method performance to observe se was not affected.	well below applicable project clea everal low level detections in the n	anup levels. It is not uncommon nethod blanks. Data usability
b. Laboratory Control Sample/Duj	plicate (LCS/LCSD)	
 i. Organics – One LCS/LC required per AK method ☑ Yes □ No 	CSD reported per matrix, analysis ls, LCS required per SW846) NA (Please explain.)	and 20 samples? (LCS/LCSD Comments:
ii. Metals/Inorganics – one samples? □ Yes □ No	LCS and one sample duplicate re	ported per matrix, analysis and 2 Comments:
An LCS and an MS/MSD were an	nalyzed with each batch.	
iii. Accuracy – All percent n And project specified D AK102 75%-125%, AK ∑ Yes ☐ No	recoveries (%R) reported and with QOs, if applicable. (AK Petroleun 103 60%-120%; all other analyses NA (Please explain.)	nin method or laboratory limits? n methods: AK101 60%-120%, s see the laboratory QC pages) Comments:
iv. Precision – All relative p laboratory limits? And p LCS/LCSD, MS/MSD, a other analyses see the la	percent differences (RPD) reported project specified DQOs, if applical and or sample/sample duplicate. (. boratory QC pages)	d and less than method or ble. RPD reported from AK Petroleum methods 20%; all Comments:
For Total Suspended Solids (TSS) associated with batch STS5201 RI) by Method SM21 2540D, both o PDs exceeding allowable limits.	of the two laboratory duplicates

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v. If %R or RPD is outside of acceptable limits, what samples are affected? Comments:
Associated samples were TPW-2-0916, TPW-9-0916, and parent sample TPW-1-0916.
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? Yes No NA (Please explain.) Comments:
The batch duplicate (with a non-project parent sample) was likely non-homogeneous, as re- analysis within hold time confirmed. Because the LCS/LCSD recoveries and RPD were within acceptable limits, only the parent samples were considered impacted. Parent sample TPW-1-0916 was qualified with an, "MN".
vii. Data quality or usability affected? (Use comment box to explain.)
TSS is not regulated by 18 AAC 75, Table C; therefore, data usability was not impacted.
c. Surrogates – Organics Only
i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples Yes No NA (Please explain.) Comments:
 ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages) ∑ Yes □ No □ NA (Please explain.) Comments:
 iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined? Yes No NA (Please explain.) Comments:
iv. Data quality or usability affected? (Use the comment box to explain.) Comments:
No impact.

d. Tr <u>Sc</u>	rip blank – <u>pil</u>	Volatile analyses	s only (GRO, BTEX, Volatile Chlo	sAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16 rinated Solvents, etc.): <u>Water and</u>
	i. One (If no	trip blank reporte ot, ente <u>r e</u> xplanati	d per matrix, analysis and for each on below.)	cooler containing volatile sampl
	Yes	∐ No	NA (Please explain.)	Comments:
	ii. Is the (If no	e cooler used to tr ot, a comment exp	ansport the trip blank and VOA sar blaining why must be entered below	nples clearly indicated on the Co
	X Yes		∐ NA (Please explain.)	Comments:
	iii. All re ⊠ Yes	esults less than P	QL?	Comments:
	iv. If ab	ove PQL, what sa	mples are affected? Commen	nts:
Not	applicable			
	v. Data	quality or usabili	ty affected? (Please explain.) Commen	nts:
No i	impact.			
e. Fi	eld Duplic	ate		
	i. One Yes	field duplicate su	bmitted per matrix, analysis and 10	project samples? Comments:
field l dup pling	duplicate licate cou event. Thi	sample frequency nt, Event A sam s project satisfied	is presented below in Table 12 of hples collected in August were the required frequency of one pe	of the QAR. For the purposes of combined with this September 10 samples or less per matrix

		LNG Facilities Groundwater Quality	Confidential Sampling and Testing Report - Event 2
ii. Submit	ted blind to lab?		16-Dec-16
Yes	No	🔀 NA (Please explain.)	Comments:
Parent Sample ar	nd Field Duplicat	te pairs are presented in Table 13	of the QAR.
iii. Precisio (Recom	on – All relative j mended: 30% w	percent differences (RPD) less that atter, 50% soil)	an specified DQOs?
RPD (%	b) = Absolute va	lue of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \ge 100$	
W/b	D Comple	$((\mathbf{K}_1 + \mathbf{K}_2)/2)$	
Yes	$\mathbf{R}_1 = \mathbf{Sample}$ $\mathbf{R}_2 = \mathbf{Field} \mathbf{D}$ $\bigotimes \mathbf{No}$	uplicate Concentration	Comments:
Field Duplicate F	RPD exceedances	s are presented in Table 14 of the	QAR.
in Data au	1:4	Contral (Has the commont how	·
iv. Data qu	ality or usadimy	affected? (Use the comment box	to explain why or why not.)
	· · · ·		
All results qualified AAC Table C pro- considered neglig	ied due to parent ject limits. The i ible.	mpact of the field duplicate RPD exce	edances were well below the 18 sion exceedances were
f Decontaminatio	on or Equipment	Blank (If not used explain why).	
Yes		NA (Please explain.)	Comments:
i. All resu	ilts less than PQI	L?	
Yes	🖂 No	NA (Please explain.)	Comments:
Table 5 of the QA	AR presents equi	pment blank detections.	
ii. If above	POL what sam	uples are affected?	
	1 XL , <i>i</i> 1 1 1	Commen	its:
For this work ord	ler. no samples v	vere affected by equipment blank	detections.
iii. Data qu	ality or usability	affected? (Please explain.)	
		Commen	ıts:
No impact.			

	LNG Facilities Groundwater Quality Sampling and Testing Report USAL-FG-GRZZZ-00-002016-00	Event 2 4 Rev. 0
7.	Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)	j-Dec-16
	a. Defined and appropriate? Yes No NA (Please explain.) Comments:	

Confidential

Laboratory Data Review Checklist

Completed by:	Jennifer McLean	
Title:	Project Scientist Date: November 2, 2016	
CS Report Name	Event 2 Sampling Kenai Wells Groundwater Report Date: October 4, 2016	
Consultant Firm:	SLR International Corporation	
Laboratory Name	E: SGS North America, Inc. Laboratory Report Number: 1165536	
ADEC File Num	ber: NA ADEC RecKey Number: NA	
1. <u>Laboratory</u> a. Did ar	ADEC CS approved laboratory receive and <u>perform</u> all of the submitted sample analyses? Yes No NA (Please explain.) Comments:	
b. If the labora	samples were transferred to another "network" laboratory or sub-contracted to an alternate tory, was the laboratory performing the analyses ADEC CS approved?] Yes \square No \bigotimes NA (Please explain.) Comments:]
2. <u>Chain of Cust</u> a. COC	tody (COC) information completed, signed, and dated (including released/received by)?] Yes INO NA (Please explain.) Comments:	
b. Correc	ct analyses requested? Yes No NA (Please explain.) Comments:	
3. <u>Laboratory Sa</u> a. Sampl	ample Receipt Documentation le/cooler temperature documented and within range at receipt $(4^\circ \pm 2^\circ C)$? Yes No NA (Please explain.) Comments:	

			LNG Facilities Groundwater Qualit	Confidential y Sampling and Testing Report - Event 2 JSAL-FG-GRZZZ-00-002016-004 Rev. 0
b.	Sample preservat Volatile Chlorina	tion acceptable ted Solvents, e	e – acidified waters, Methanol pr etc.)?	eserved VOC soil (GRO, BTEX,
	Yes Xes	□ No	NA (Please explain.)	Comments:
c.	Sample condition	n documented -	- broken, leaking (Methanol), ze ⊠ NA (Please explain.)	ro headspace (VOC vials)? Comments:
N	o issues were note	ed.		
d.	If there were any containers/preser samples, etc.?	discrepancies, vation, sample	were they documented? For exa temperature outside of acceptat	ample, incorrect sample ole range, insufficient or missing
	Yes	🗌 No	NA (Please explain.)	Comments:
1	No issues were not	ed.		
e.	Data quality or u	sability affecte	d? (Please explain.) Comme	ents:
N	lo impact.			
Case N	<u>Varrative</u>			
a.	Present and unde	rstandable?	NA (Please explain.)	Comments:
b.	Discrepancies, er Yes	rors or QC fail	lures identified by the lab?	Comments:
c.	Were all correctiv	ve actions docu	umented? NA (Please explain.)	Comments:
1	None were taken.			
d.	What is the effec	t on data quali	ty/usability according to the case Comme	e narrative? ents:
1	No impact.			
Sampl	es Results			
a.	Correct analyses	performed/rep	orted as requested on COC?	Comments:

5.

4.

			LNG Facilities Groundwater Qualit	Confidential y Sampling and Testing Report - Event 2 JSAL-FG-GRZZZ-00-002016-004 Rev. 0
b.	All applicable h	olding times m	et?	16-Dec-16
	\bowtie Yes	No	NA (Please explain.)	Comments:
c.	All soils reporte	ed on a dry weig	ght basis?	
	Yes	No No	NA (Please explain.)	Comments:
(Only water sampl	es were include	ed in this work order.	
d.	Are the reported project?	l PQLs less tha	n the Cleanup Level or the minin	num required detection level for th
	Xes	🗌 No	NA (Please explain.)	Comments:
e.	Data quality or	usability affect	ed?	
			Comme	ents:
1	No impact.			
	Xes Yes	No	NA (Please explain.)	Comments:
	ii. All meth	od blank resul	ts less than PQL?	
	Yes	🖂 No	NA (Please explain.)	Comments:
a:	Analytes were not s noted in Table 4	t detected in an 4 of the QAR.	y method blanks at or above the l	Limit of Detection (LOD), except
	iii. If above	PQL, what sar	nples are affected?	an tou
			Comme	2011.5.
A C S S W	Associated results ommon laborator hown in Table 4. /hen associated sa	s that were less y contaminants Results were c ample results w	than, or equal to, five times the b and metals) were considered affe onsidered unaffected and not qua ere greater than five times the bla	lank detection (ten times for ected, and were qualified as lified nor shown on Table 4, ank detection or non-detect.
	iv. Do the a	ffected sample	(s) have data flags and if so, are t NA (Please explain.)	he data flags clearly defined? Comments:
Ι	Data were qualifie	ed as noted in 7	Table 4 of the QAR.	
·				

v.	Data quali	ity or usabilit	LNG Facilities Groundw y affected? (Please expla	ater Quality Samplin USAL-FG- in.) Comments:	Confidential g and Testing Report - Event 2 GRZZZ-00-002016-004 Rev. 0 16-Dec-16
In all ca method j was not a	ses, affected performance affected.	d results were e to observe s	e well below applicable pr everal low level detection	oject cleanup less in the method	evels. It is not uncommon d blanks. Data usability
b. Labor	atory Contr	ol Sample/Dı	plicate (LCS/LCSD)		
i.	Organics - required p	– One LCS/L er AK metho	CSD reported per matrix, ds, LCS required per SW	analysis and 20 846)	0 samples? (LCS/LCSD
	Yes	No No	NA (Please explain	1.)	Comments:
ii.	Metals/Inc	organics – on	e LCS and one sample du	plicate reported	d per matrix, analysis and 20
] Yes	🔀 No	NA (Please explain	n.)	Comments:
An LCS	and an MS	MSD were a	nalyzed with each batch.		
	Accuracy And proje AK102 75 Yes	 All percent ct specified I 5%-125%, AF ☑ No 	recoveries (%R) reported DQOs, if applicable. (AK X103 60%-120%; all other NA (Please explain	l and within me Petroleum metl r analyses see t 1.)	ethod or laboratory limits? hods: AK101 60%-120%, he laboratory QC pages) Comments:
Table 8 o Table 11	of the QAR of the QAI	presents CC R presents MS	✓ recovery exceedances a S/MSD recovery exceeda	nd associated d nces and associ	ata. ated data.
iv.	Precision laboratory LCS/LCS other anal Yes	– All relative / limits? And D, MS/MSD, yses see the l □ No	percent differences (RPD project specified DQOs, i and or sample/sample du aboratory QC pages))) reported and f applicable. R plicate. (AK Pe 1.)	less than method or RPD reported from etroleum methods 20%; all Comments:
v.	If %R or I	RPD is outsid	e of acceptable limits, wh	at samples are Comments:	affected?
Affected	l data were	presented in	Tables 8 and 11 of the QA	AR.	
vi.	Do the aff Yes re qualified	ected sample	(s) have data flags? If so, NA (Please explain in Tables 8 and 11 of the	are the data fla n.) QAR.	gs clearly defined? Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

	Surrog	gates – Or	ganics Only	· · · · · ·	
	i.	Are surr Yes	ogate recoveri No	es reported for organic analyses – NA (Please explain.)	field, QC and laboratory samples Comments:
	ii.	Accurac And pro analyses Yes	y – All percen ject specified I see the labora	t recoveries (%R) reported and wit DQOs, if applicable. (AK Petroleu tory report pages) NA (Please explain.)	thin method or laboratory limits? m methods 50-150 %R; all other Comments:
	iii.	Do the s flags cle Yes	ample results v arly defined?	with failed surrogate recoveries ha 🖂 NA (Please explain.)	ve data flags? If so, are the data Comments:
No	iv.	Data qua	ality or usabilit	y affected? (Use the comment box Comme	to explain.) nts:
ך <u>צ</u>	Trip b	lank – Vo	latile analyses	only (GRO, BTEX, Volatile Chlo	rinated Solvents, etc.): Water and
	i.	One trip	blank reported	l per matrix, analysis and for each	cooler containing volatile sample
		Yes	No	NA (Please explain.)	Comments:
	ii.	Is the co (If not, a	oler used to tra	ansport the trip blank and VOA sat laining why must be entered below	mples clearly indicated on the CC
		Yes	No	NA (Please explain.)	Comments:

iv. If above PQL, what samples are affected?

Comments:

Comments.
Not applicable.
v. Data quality or usability affected? (Please explain.) Comments:
No impact.
e. Field Duplicate
 i. One field duplicate submitted per matrix, analysis and 10 project samples? ☑ Yes □ No □ NA (Please explain.) Comments:
The field duplicate sample frequency is presented below in Table 12 of the QAR. For the purpose of field duplicate count, Event A samples collected in August were combined with this September sampling event. This project satisfied the required frequency of one per 10 samples or less per matrix and analyte. No field duplicates were associated with this work order.
ii. Submitted blind to lab?
Parent Sample and Field Duplicate Pairs are presented in Table 13 of the QAR.
iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)
RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \ge 100$
Where R_1 = Sample Concentration R_2 = Field Duplicate ConcentrationYesNoNoNA (Please explain.)
No field duplicates were associated with this work order. On a project wide basis, refer to Table 14 of the QAR.
iv. Data quality or usability affected? (Use the comment box to explain why or why not.)
Comments:

Not applicable to this work order.

f D			LNG Facilities Groundwater Quality S US	Confidential Sampling and Testing Report - Event 2 AL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
I. D		n or Equipme	ent Blank (If not used explain why). \Box NA (D	
	X Yes	No	NA (Please explain.)	Comments:
Equi Meth	pment Blanks od 200.8.	were analyze	d at appropriate frequencies for total	and dissolved metals by EPA
	i. All resul	lts less than P	QL?	
	Yes	🔀 No	NA (Please explain.)	Comments:
Equ	ipment blank	detections abo	ove the LOD are presented in Table 5	5 of the QAR.
	ii. If above	PQL, what sa	amples are affected? Commen	ts:
Aff	ected samples	are presented	in Table 6 of the QAR.	
	iii. Data qua	ality or usabil	ity affected? (Please explain.)	
			Commen	ts:
San Thes that appl sam	nple data <10X se results were of the equipm icable regulate ple data was c	K the level of e qualified as ' ent blanks. A ory limits (18 onsidered neg	the associated equipment blank deter "B" to indicate potential for similar of all equipment blank contamination of AAC Table C); therefore, the impac	ctions are shown in Table 6. contamination in the samples as oserved was <100X below the t on usability of the associated
<u>Other Da</u> a D	ta Flags/Quali	fiers (ACOE,	AFCEE, Lab Specific, etc.)	
u. D	Yes		NA (Please explain.)	Comments:

7.

Laboratory Data Review Checklist

Completed by:	Jennifer McLean	
Title:	Project Scientist	Date: November 2, 2016
CS Report Name:	Event 2 Sampling Kenai Wells Groundwater	Report Date: October 15, 2016
Consultant Firm:	SLR International Corporation	
Laboratory Name	SGS North America, Inc. Labora	atory Report Number: 1165550
ADEC File Numb	er: NA ADEC Re	ecKey Number: NA
1. <u>Laboratory</u> a. Did an	ADEC CS approved laboratory receive and <u>pe</u> Yes No NA (Please expl	erform all of the submitted sample analyses? lain.) Comments: laboratory or sub-contracted to an alternate
	ory, was the laboratory performing the analyse Yes No NA (Please expl	es ADEC CS approved? lain.) Comments:
2. <u>Chain of Cust</u> a. COC i	<u>ody (COC)</u> nformation completed, signed, and dated (inclu Yes ⊠ No □ NA (Please expl	uding released/received by)? lain.) Comments:
Only two Samples delivery t and reque	pages of the three page COC were signed as, were in SLR custody with the exception of ship to the laboratory. And all samples were analyze ested. Data was not compromised.	"Relinquished By", by SLR personnel. pping, from the time of collection until ed for the methods and analytes intended
b. Correc	t analyses requested? Yes No NA (Please expl	lain.) Comments:

2 Laboratory Sample Passint Decumentation	Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
a. Sample/cooler temperature documentation	ed and within range at receipt $(4^{\circ} \pm 2^{\circ} C)$? NA (Please explain.) Comments:
Table 1 provides a sample receipt summ laboratory slightly below the 2°C criteria temperatures within a narrow temperature evidence of freezing was noted for any of sample data are considered acceptable w One of three coolers (identified as cooler blank at 12.6°C. Only mercury by EPA	hary. Six of the project coolers were received at the a due to the inherent imprecision of achieving stable cooler be range using frozen gel ice for cooling. No ice or f the samples within these coolers. Therefore, reported ithout qualification. (* 8) was received at the laboratory with a temperature (631 samples were included in this cooler.
 b. Sample preservation acceptable – acid Volatile Chlorinated Solvents, etc.)? Yes No II 	ified waters, Methanol preserved VOC soil (GRO, BTEX, NA (Please explain.) Comments:
c. Sample condition documented – broke	en, leaking (Methanol), zero headspace (VOC vials)? NA (Please explain.) Comments:
No issues were noted.	
 d. If there were any discrepancies, were containers/preservation, sample tempe samples, etc.? Yes No II 	they documented? For example, incorrect sample erature outside of acceptable range, insufficient or missing NA (Please explain.) Comments:
Temperatures were noted.	
e. Data quality or usability affected? (Ple	ease explain.) Comments:
Regarding the temperature below 2°C, t freezing for samples below. Data were con- Regarding the temperature above 6°C, con- in this cooler. EPA Method 1631 does not	ne sample receipt form did not note any evidence of onsidered not impacted. nly mercury samples by EPA Method 1631 were included of have a temperature requirement. Data was not impacted.
 4. <u>Case Narrative</u> a. Present and understandable? ∑ Yes □ No □ I 	NA (Please explain.) Comments:
b. Discrepancies, errors or QC failures in Yes No	lentified by the lab? NA (Please explain.) Comments:
The temperature exceedance was noted case narrative.	on the sample receipt form, but was not documented in the

		LNG Facilities Groundwater Qual	Confidential lity Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0				
	c Were all corrective actions document	ed?	16-Dec-16				
	$\Box \operatorname{Yes} \Box \operatorname{No} \Box \Box$	NA (Please explain.)	Comments:				
	None were taken.						
	d. What is the effect on data quality/usal	bility according to the cas Comm	se narrative? ients:				
	No impact.						
5	Samples Results						
	a. Correct analyses performed/reported a	as requested on COC? NA (Please explain.)	Comments:				
	b. All applicable holding times met?	NA (Please explain.)	Comments:				
	For SM21 4500-NO3-F nitrate and nitri initially extracted within hold time, then to low QCS recovery.	ite, samples MW-50A-09	16 and MW-50B-0916 were the method allowed hold time due				
	c. All soils reported on a dry weight bas	.is? NA (Please explain.)	Comments:				
	Only water samples were included in th	nis work order.					
	d. Are the reported PQLs less than the C	Cleanup Level or the minin	mum required detection level for the				
	project?	NA (Please explain.)	Comments:				
	e. Data quality or usability affected?	Comm					
		Comments:					
	Nitrate and nitrite results for samples M "QL." All associated LCS and CCV reco is considered negligible.	IW-50A-0916 and MW-5 overies were within accep	0B-0916 were qualified with a, otable limits; therefore, the impact				
6.	OC Samples						
	a. Method Blank i. One method blank reported pe	er matrix, analysis and 20 NA (Please explain)	samples?				
		(i lease explain.)	Comments.				

		LNG Facilities Groundwater Q	Confidential Jality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0
ii. All methe	od blank resul	ts less than POL?	16-Dec-16
Yes	No	\square NA (Please explain.)	Comments:
Analytes were not of as noted in Table 4	detected in an of the QAR.	ny method blanks at or above th	ne Limit of Detection (LOD), except
iii. If above F	PQL, what same	mples are affected?	monto
		Com	ments.
Associated results t common laboratory shown in Table 4. R when associated sar	that were less contaminant con	s than, or equal to, five times th s and metals) were considered considered unaffected and not c vere greater than five times the	e blank detection (ten times for affected, and were qualified as ualified nor shown on Table 4, blank detection or non-detect.
iv. Do the aff \bigotimes Yes	fected sample	e(s) have data flags and if so, an NA (Please explain.)	e the data flags clearly defined? Comments:
Data were qualified	as noted in '	Table 4 of the QAR.	
In all cases, affecte method performance was not affected.	d results were e to observe s	Com e well below applicable project several low level detections in	ments: cleanup levels. It is not uncommon the method blanks. Data usability
b. Laboratory Contr	ol Sample/D	uplicate (LCS/LCSD)	
i. Organics required p ∑ Yes	– One LCS/L per AK metho No	CSD reported per matrix, analods, LCS required per SW846)	ysis and 20 samples? (LCS/LCSD Comments:
ii. Metals/In- samples?	organics – on	e LCS and one sample duplica	te reported per matrix, analysis and 20
Yes	🔀 No	NA (Please explain.)	Comments:
An LCS and an MS	S/MSD were	analyzed with each batch.	
iii. Accuracy And proje AK102 75	– All percent ect specified I 5%-125%, Al X No	t recoveries (%R) reported and DQOs, if applicable. (AK Petro K103 60%-120%; all other ana NA (Please explain.)	within method or laboratory limits? leum methods: AK101 60%-120%, lyses see the laboratory QC pages) Comments:
Table 8 of the QAR Table 11 of the QA	presents CC R presents M	V recovery exceedances and as S/MSD recovery exceedances	sociated data. and associated data.

iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from

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LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)
\bigvee Yes \square No \square NA (Please explain.) Comments:
v. If %R or RPD is outside of acceptable limits, what samples are affected? Comments:
Affected data were presented in Tables 8 and 11 of the QAR.
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? Yes No NA (Please explain.) Comments:
Data were quanned as indicated in Tables 8 and 11 of the QAR.
vii. Data quality or usability affected? (Use comment box to explain.)
All affected results were well below applicable cleanup limits or the affected analyte was not regulated by 18 AAC 75, Table C. Data usability was not affected.
c. Surrogates – Organics Only
i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples? Yes No NA (Please explain.) Comments:
 ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)
Yes No NA (Please explain.) Comments:
iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?
$\Box Yes \Box No \qquad \Box NA (Please explain.) \qquad Comments:$
iv. Data quality or usability affected? (Use the comment box to explain.) Comments:
No impact.
d.

u.
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e.
T C S

matrix and analyte.

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ii. Submitted blind t	o lab? 🖂 NA (Please explai	in.) Comments:	16-Dec-16		
Parent Sample and Field D	uplicate Pairs are presented in	Table 13 of the QAR.			
iii. Precision – All re (Recommended:	iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)				
RPD (%) = Abso	lute value of: (R_1-R_2)	100			
	$\frac{1}{((R_1+R_2)/2)}$ x 1	100			
Where $R_1 = S$ $R_2 = F$ \square Yes \square No	Sample Concentration Field Duplicate Concentration NA (Please explained)	in.) Comments:			
Field Duplicate RPD excee	edances are presented Table 14	4 of the QAR.			
iv. Data quality or us	sability affected? (Use the com	nment box to explain why or w	/hy not.)		
		Comments:			
All results qualified due to AAC Table C project limits considered negligible.	parent sample/field duplicate s. The impact of the field dupli	RPD exceedances were well b icate precision exceedances we	elow the 18 ere		
f. Decontamination or Equi	ipment Blank (If not used expl	lain why).			
\boxtimes Yes \square No	NA (Please explained)	in.) Comments:			
Equipment Blanks were ana Method 200.8.	lyzed at appropriate frequenci	es for total and dissolved meta	als by EPA		
i. All results less th	an PQL?				
Yes Xes	NA (Please explai	in.) Comments:			
Equipment blank detection	s above the LOD are presented	l in Table 5 of the QAR.			
ii. If above PQL, wh	nat samples are affected?				
		Comments:			
Affected samples are prese	nted in Table 6 of the QAR.				
iii. Data quality or us	sability affected? (Please expla	ain.)			
		Comments:			
Sample data <10X the leve These results were qualified that of the equipment blank applicable regulatory limits sample data was considered	l of the associated equipment l as "B" to indicate potential for s. All equipment blank contar (18 AAC Table C); therefore, l negligible.	blank detections are shown in or similar contamination in the mination observed was <100X , the impact on usability of the	Table 6. e samples as below the associated		

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7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a.	Defined and ap	propriate?	NA (Please explain.)	Comments:	

Completed by:	Jennifer McLean				
Title:	Project Scientist	Date: N	November 2, 2016		
CS Report Nam	e: Event 2 Sampling Kenai Wells Groundwater	Report Date:	October 10, 2016		
Consultant Firm:	SLR International Corporation	I			
Laboratory Nar	e: SGS North America, Inc.	Laboratory Report Num	aber: 1165574		
ADEC File Nu	nber: NA A	DEC RecKey Number:	NA		
1. <u>Laboratory</u> a. Did	 Laboratory Laboratory a. Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses? Yes No NA (Please explain.) 				
b. If th labo	e samples were transferred to another "n ratory, was the laboratory performing the Yes No NA (Ple	etwork" laboratory or sub- e analyses ADEC CS appr ease explain.)	-contracted to an alternate roved? Comments:		
2. <u>Chain of Cu</u> a. COO	stody (COC) t information completed, signed, and dat I Yes ☐ No ☐ NA (Pla	ed (including released/rec ease explain.)	eived by)? Comments:		
b. Com	ect analyses requested? ☑ Yes	ease explain.)	Comments:		
3. <u>Laboratory</u> a. Sam	Sample Receipt Documentation ole/cooler temperature documented and Yes No NA (Pla	within range at receipt (4° ease explain.)	± 2° C)? Comments:		

			LNG Facilities Groundwater Quality S	Confidential Sampling and Testing Report - Event 2 AL-FG-GRZZZ-00-002016-004 Rev. 0
b.	Sample preservat	tion acceptable	- acidified waters, Methanol pres	erved VOC soil (GRO, BTEX,
	Yolanic Chlorina Xes		NA (Please explain.)	Comments:
c.	Sample condition	n documented -	- broken, leaking (Methanol), zero	headspace (VOC vials)? Comments:
N	lo issues were note	ed.		
d.	If there were any containers/preser samples, etc.?	discrepancies, vation, sample	were they documented? For exan temperature outside of acceptable	nple, incorrect sample e range, insufficient or missing
	Yes	🗌 No	🔀 NA (Please explain.)	Comments:
1	None were noted.			
e.	Data quality or u	sability affecte	d? (Please explain.) Commen	ts:
Ν	No impact.			
Case N	<u>Narrative</u>			
a.	Present and unde	rstandable?	NA (Please explain.)	Comments:
b.	Discrepancies, er Xes	rors or QC fail	lures identified by the lab?	Comments:
c.	Were all correction	ve actions docu	umented? X NA (Please explain.)	Comments:
1	None were taken.			
d.	What is the effec	t on data qualit	ty/usability according to the case r Commen	narrative? ts:
I	No impact.			
Samul	es Results			
<u>sampi</u> a.	Correct analyses X Yes	performed/rep	orted as requested on COC?	Comments:

				LNG Faciliti	es Groundwater Qualit	y Sampling and Testing Re	Confidential port - Event 2
h	All applic	able ho	lding times m	et?	l	JSAL-FG-GRZZZ-00-0020	16-004 Rev. 0 16-Dec-16
U	Ye Xii applie	es		NA (Pleas	e explain.)	Comments:	
Γ							
L							
с	. All soils r	eported s	on a dry weig	ght basis? X NA (Pleas	e explain.)	Comments:	
	Only water	samples	s were include	ed in this work o	rder.		
d	Are the re	ported l	PQLs less that	n the Cleanup Le	evel or the minim	num required detecti	ion level for the
	Ye	s	🗌 No	NA (Pleas	e explain.)	Comments:	
Γ							
L							
e	. Data quali	ity or us	sability affected	ed?	Commo	unto.	
Г					Comme	ins.]
	No impact.						
a	. Method B i. Or ⊠ Ye	lank ne meth s	od blank repo	rted per matrix,	analysis and 20 s e explain.)	amples? Comments:	
	ii. Al Ye	l metho s	d blank result ⊠ No	ts less than PQL	e explain.)	Comments:	
	Analytes we as noted in T	ere not o Table 4 o	letected in any of the QAR.	y method blanks	at or above the I	Limit of Detection (LOD), except
	iii. If	above P	QL, what san	nples are affected	d? Comme	ents:	
Γ	Associated	results t	hat were less	than, or equal to	five times the b	lank detection (ten	times for
	common lab shown in Ta when associa	oratory ble 4. R ated san	contaminants esults were conple results w	and metals) wer onsidered unaffe ere greater than	re considered affor cted and not qua five times the bla	ected, and were qua lified nor shown on ank detection or non	alified as Table 4, a-detect.
	iv. Do Xe	o the aff s	fected sample	(s) have data flag	gs and if so, are the explain.)	he data flags clearly Comments:	defined?
Γ	Data were q	ualified	l as noted in T	Table 4 of the QA	AR.		

v.	Data quali	ity or usabilit	LNG Facilities Groundw y affected? (Please expla	ater Quality Samplin USAL-FG- in.) Comments:	Confidential g and Testing Report - Event 2 GRZZZ-00-002016-004 Rev. 0 16-Dec-16
In all ca method j was not a	ses, affected performance affected.	d results were e to observe s	e well below applicable pr everal low level detection	oject cleanup less in the method	evels. It is not uncommon d blanks. Data usability
b. Labor	atory Contr	ol Sample/Dı	plicate (LCS/LCSD)		
i.	Organics - required p	– One LCS/L er AK metho	CSD reported per matrix, ds, LCS required per SW	analysis and 20 846)	0 samples? (LCS/LCSD
	Yes	No No	NA (Please explain	1.)	Comments:
ii.	Metals/Inc	organics – on	e LCS and one sample du	plicate reported	d per matrix, analysis and 20
] Yes	🔀 No	NA (Please explain	n.)	Comments:
An LCS	and an MS	MSD were a	nalyzed with each batch.		
	Accuracy And proje AK102 75 Yes	– All percent ct specified I 5%-125%, AF ⊠ No	recoveries (%R) reported DQOs, if applicable. (AK X103 60%-120%; all other NA (Please explain	l and within me Petroleum metl r analyses see t 1.)	ethod or laboratory limits? hods: AK101 60%-120%, he laboratory QC pages) Comments:
Table 8 o Table 11	of the QAR of the QAI	presents CC R presents MS	✓ recovery exceedances a S/MSD recovery exceeda	nd associated d nces and associ	ata. ated data.
iv.	Precision laboratory LCS/LCS other anal Yes	– All relative / limits? And D, MS/MSD, yses see the l □ No	percent differences (RPD project specified DQOs, i and or sample/sample du aboratory QC pages))) reported and f applicable. R plicate. (AK Pe 1.)	less than method or RPD reported from etroleum methods 20%; all Comments:
v.	If %R or I	RPD is outsid	e of acceptable limits, wh	at samples are Comments:	affected?
Affected	l data were	presented in	Tables 8 and 11 of the QA	AR.	
vi.	Do the aff Yes re qualified	ected sample	(s) have data flags? If so, NA (Please explain in Tables 8 and 11 of the	are the data fla n.) QAR.	gs clearly defined? Comments:

vii. Data quality or usability affected? (Use comment box to explain.)

All regu	affected results v lated by 18 AAC	were well belo C 75, Table C.	w applicable cleanup limits or Data usability was not affected	the affected analyte was not l.
c. S	urrogates – Orga	nics Only		
	i. Are surrog	ate recoveries	reported for organic analyses -	- field, QC and laboratory samples? Comments:
	ii. Accuracy - And projec analyses se	- All percent r et specified D(ee the laborato	ecoveries (%R) reported and w QOs, if applicable. (AK Petrole ry report pages)	within method or laboratory limits? Soum methods 50-150 %R; all other
	Yes Yes	🗌 No	NA (Please explain.)	Comments:
	iii. Do the sam	ple results wi y defined?	th failed surrogate recoveries h	ave data flags? If so, are the data
	Yes	∐ No	NA (Please explain.)	Comments:
No	iv. Data qualit	y or usability	affected? (Use the comment be Comm	ox to explain.) ents:
l. T <u>S</u> e	rip blank – Volat <u>pil</u>	ile analyses of	nly (GRO, BTEX, Volatile Chl	orinated Solvents, etc.): Water and
	i. One trip bl (If not, ent	ank reported per explanation	per matrix, analysis and for eac	h cooler containing volatile samples
	X Yes	□ No	NA (Please explain.)	Comments:
	ii. Is the coole (If not, a co	er used to tran	sport the trip blank and VOA s ining why must be entered belo	amples clearly indicated on the COC
	Yes Yes	No	NA (Please explain.)	Comments:
	iii. All results ⊠ Yes	less than PQL	?	Comments:

iv. If above PQL, what samples are affected?

Comments:

Not applicable.
v. Data quality or usability affected? (Please explain.) Comments:
No impact.
e. Field Duplicate
 i. One field duplicate submitted per matrix, analysis and 10 project samples? ☑ Yes □ No □ NA (Please explain.) Comments:
The field duplicate sample frequency is presented below in Table 12 of the QAR. For the purpose of field duplicate count, Event A samples collected in August were combined with this Septembe sampling event. This project satisfied the required frequency of one per 10 samples or less per matrix and analyte. No field duplicates were included in this work order.
 ii. Submitted blind to lab? ☐ Yes ☐ No ☐ NA (Please explain.) Comments:
Parent Sample and Field Duplicate Pairs are presented in Table 13 of the QAR. No field duplicates were included in this work order.
iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)
RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \ge 100$
Where R_1 = Sample Concentration R_2 = Field Duplicate ConcentrationYesNoNoNA (Please explain.)
Field Duplicate RPD exceedances are presented Table 14 of the QAR. No field duplicates were included in this work order.
iv. Data quality or usability affected? (Use the comment box to explain why or why not.)
Comments:
No impact.
f. Decontamination or Equipment Blank (If not used explain why).
Yes No NA (Please explain.) Comments:
Equipment Blanks were analyzed at appropriate frequencies for total and dissolved metals by EPA Method 200.8.

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	i. All results less than PQL?
	YesNoNA (Please explain.)Comments:
	Equipment blank detections above the LOD are presented in Table 5 of the QAR.
	ii. If above PQL, what samples are affected?
	Comments:
	Affected samples are presented in Table 6 of the QAR.
	iii. Data quality or usability affected? (Please explain.)
	Comments:
	Sample data <10X the level of the associated equipment blank detections are shown in Table 6. These results were qualified as "B" to indicate potential for similar contamination in the samples as that of the equipment blanks. All equipment blank contamination observed was <100X below the applicable regulatory limits (18 AAC Table C); therefore, the impact on usability of the associated sample data was considered negligible.
7. <u>Oth</u>	a. Defined and appropriate? ∑ Yes ☐ No ☐ NA (Please explain.) Comments:

Completed by:	Jennifer McLean			
Title:	Project Scientist Date: November 2, 2016			
CS Report Name	Event 2 Sampling Kenai WellsReport Date:September 26, 2016GroundwaterSeptember 26, 2016			
Consultant Firm:	SLR International Corporation			
Laboratory Name	SGS North America, Inc. Laboratory Report Number: 1165595			
ADEC File Num	ber: NA ADEC RecKey Number: NA			
1. <u>Laboratory</u> a. Did an	 Laboratory Laboratory a. Did an ADEC CS approved laboratory receive and <u>perform</u> all of the submitted sample analyses? Yes No NA (Please explain.) 			
b. If the labora	samples were transferred to another "network" laboratory or sub-contracted to an alternate tory, was the laboratory performing the analyses ADEC CS approved? Yes No NA (Please explain.) Comments:			
2. <u>Chain of Cust</u> a. COC	ody (COC) nformation completed, signed, and dated (including released/received by)? Yes No NA (Please explain.) Comments:			
b. Correc	et analyses requested? Yes No NA (Please explain.) Comments:			
3. <u>Laboratory Sa</u> a. Samp	ample Receipt Documentation e/cooler temperature documented and within range at receipt $(4^\circ \pm 2^\circ C)$? Yes No NA (Please explain.) Comments:			

b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRÖ, BTEX Volatile Chlorinated Solvents, etc.)? Yes No NA (Please explain.) Comments: c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)? Yes No Yes No NA (Please explain.) Comments: No issues were noted. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.? Yes No NA (Please explain.) Comments: None were noted. In there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.? Yes No NA (Please explain.) Comments: None were noted. In the quality or usability affected? (Please explain.) Comments: No impact. Comments: No Mo NA (Please explain.) Comments: Image: No NA (Please explain.) Comments: Image: No NA (Please explain.) Comments: Image: No NA (Please explain.) Comments: <				LNG Facilities Groundwater Quality	Confidential / Sampling and Testing Report - Event 2 ISAL-FG-GRZZZ-00-002016-004 Rev. 0
Yes No NA (Please explain.) Comments: . . Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)? Yes No NA (Please explain.) Comments: No issues were noted. . . d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.? . Yes No NA (Please explain.) Comments: None were noted. . . e. Data quality or usability affected? (Please explain.) Comments: No impact. . Case Narrative a. Present and understandable? a. Present and understandable? . . . b. Discrepancies, errors or QC failures identified by the lab? <td>b.</td> <td>Sample preservat</td> <td>tion acceptable</td> <td>- acidified waters, Methanol pre-</td> <td>eserved VOC soil (GRO, BTEX,</td>	b.	Sample preservat	tion acceptable	- acidified waters, Methanol pre-	eserved VOC soil (GRO, BTEX,
c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)? □ Yes □ No ○ NA (Please explain.) Comments: No issues were noted. 0. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.? □ Yes □ No ○ NA (Please explain.) Comments: None were noted. 0. 0. NA (Please explain.) Comments: None were noted. 0. 0. NA (Please explain.) Comments: None were noted. 0. 0. NA (Please explain.) Comments: None were noted. 0. 0. Comments: No None were noted. 0. 0. Comments: No No impact. Comments: No No Methanol.) Comments: No □ Yes □ No □ NA (Please explain.) Comments: . □ . ○ NA (Please explain.) Comments: . □ Yes □ No □ NA (Please explain.) Comments: . . . No<		You Yes		NA (Please explain.)	Comments:
c. Sample condition documented – broken, leaking (Methanol), zero headspace (VOC vials)? ☐ Yes ☐ No No issues were noted. d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.? ☐ Yes ☐ No ☐ Yes ☐ No ☐ Na (Please explain.) Comments: None were noted.					
No issues were noted. d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.? Yes No NA (Please explain.) Comments: None were noted.	c.	Sample condition	n documented -	- broken, leaking (Methanol), zer NA (Please explain.)	ro headspace (VOC vials)? Comments:
d. If there were any discrepancies, were they documented? For example, incorrect sample containers/preservation, sample temperature outside of acceptable range, insufficient or missing samples, etc.?	N	lo issues were note	ed.		
Yes No NA (Please explain.) Comments: None were noted.	d.	If there were any containers/preser samples, etc.?	discrepancies, vation, sample	were they documented? For exa temperature outside of acceptab	mple, incorrect sample le range, insufficient or missing
None were noted. e. Data quality or usability affected? (Please explain.) Comments: No impact. Case Narrative a. Present and understandable? Main Yes No NA (Please explain.) Comments: b. Discrepancies, errors or QC failures identified by the lab? Main Yes No NA (Please explain.) Comments:		Yes	No	NA (Please explain.)	Comments:
e. Data quality or usability affected? (Please explain.) Comments: No impact. Case Narrative a. Present and understandable? Yes No NA (Please explain.) Comments: b. Discrepancies, errors or QC failures identified by the lab? Yes No NA (Please explain.) Comments: c. Were all corrective actions documented? Yes No NA (Please explain.) Comments: No NA (Please explain.) Comments: Comments: No No NA (Please explain.) Comments: No No NA (Please explain.) Comments: None were taken. d. What is the effect on data quality/usability according to the case narrative? Comments: No impact.	1	None were noted.			
No impact. Case Narrative a. Present and understandable? Yes No NA (Please explain.) Comments: . . b. Discrepancies, errors or QC failures identified by the lab? Yes No NA (Please explain.) Comments: . . c. Were all corrective actions documented? . Yes No NA (Please explain.) Comments: . None were taken. . d. What is the effect on data quality/usability according to the case narrative? Comments: . No impact. .	e.	Data quality or us	sability affecte	d? (Please explain.) Comme	nts:
Case Narrative a. Present and understandable? Yes No NA (Please explain.) Comments: . . b. Discrepancies, errors or QC failures identified by the lab? . Yes No NA (Please explain.) Comments: . . c. Were all corrective actions documented? . Yes No NA (Please explain.) Comments: . . .	Ν	No impact.			
a. Present and understandable? Yes No No NA (Please explain.) Comments: . b. Discrepancies, errors or QC failures identified by the lab? Yes No NA (Please explain.) Comments: . </td <td>Case N</td> <td>Narrative</td> <td></td> <td></td> <td></td>	Case N	Narrative			
b. Discrepancies, errors or QC failures identified by the lab?	a.	Present and unde	rstandable?	NA (Please explain.)	Comments:
b. Discrepancies, errors or QC failures identified by the lab?					
c. Were all corrective actions documented? Yes No NA (Please explain.) Comments: None were taken. d. What is the effect on data quality/usability according to the case narrative? Comments: No impact.	b.	Discrepancies, er Xes	rors or QC fail	ures identified by the lab?	Comments:
c. Were all corrective actions documented? Yes No NA (Please explain.) Comments: None were taken. d. What is the effect on data quality/usability according to the case narrative? Comments: No impact.					
None were taken. d. What is the effect on data quality/usability according to the case narrative? Comments: No impact.	c.	Were all correctiv	ve actions docu	umented? NA (Please explain.)	Comments:
 d. What is the effect on data quality/usability according to the case narrative? Comments: No impact. 	1	None were taken.			
No impact.	d.	What is the effec	t on data qualit	y/usability according to the case Comme	narrative? nts:
	1	No impact.			
Samples Results	Samul	es Results			
a. Correct analyses performed/reported as requested on COC? Yes No NA (Please explain.) Comments:	<u>sampi</u> a.	$\frac{\text{Correct analyses}}{\text{Ves}}$	performed/rep	orted as requested on COC?	Comments:

	h	All applicable bo	olding times me	LNG Facilities Groundwater C	Confidential uality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
	0.	\boxtimes Yes		NA (Please explain.)	Comments:
	c.	All soils reported	l on a dry weig	ht basis? X NA (Please explain.)	Comments:
		Only water sample	es were include	d in this work order.	
	d.	Are the reported	PQLs less than	the Cleanup Level or the mi	nimum required detection level for the
	_	\boxtimes Yes	🗌 No	NA (Please explain.)	Comments:
	e.	Data quality or u	sability affecte	d? Con	iments:
	Г	No impost			
6.	<u>QC S</u> a.	<u>amples</u> Method Blank i. One meth ⊠ Yes	nod blank repor	ted per matrix, analysis and NA (Please explain.)	20 samples? Comments:
	Г	ii. All metho	od blank results	s less than PQL?	Comments:
		iii. If above l	PQL, what sam	ples are affected?	aments:
		Not applicable			
	Г	iv. Do the af	fected sample(s) have data flags and if so, a NA (Please explain.)	re the data flags clearly defined? Comments:
	Ļ	v. Data qual	lity or usability	affected? (Please explain.) Con	nments:
		No impact.			

		LNG Facilities Groundwater Quality S	Confidential Sampling and Testing Report - Event 2
b. L	aboratory Control Sample/Dup	licate (LCS/LCSD)	16-Dec-16
	 i. Organics – One LCS/LCS required per AK methods ☑ Yes □ No 	SD reported per matrix, analysis s, LCS required per SW846) NA (Please explain.)	and 20 samples? (LCS/LCSD Comments:
	ii. Metals/Inorganics – one l samples?	LCS and one sample duplicate re	ported per matrix, analysis and 20
	Yes No	NA (Please explain.)	Comments:
No	inorganics were associated with	h this work order.	
	 iii. Accuracy – All percent re And project specified DQ AK102 75%-125%, AK1 ☑ Yes □ No 	ecoveries (%R) reported and with Os, if applicable. (AK Petroleum 03 60%-120%; all other analyses NA (Please explain.)	nin method or laboratory limits? n methods: AK101 60%-120%, s see the laboratory QC pages) Comments:
	 iv. Precision – All relative per laboratory limits? And pr LCS/LCSD, MS/MSD, and other analyses see the lab ☑ Yes □ No 	ercent differences (RPD) reported roject specified DQOs, if applical nd or sample/sample duplicate. (A poratory QC pages)	d and less than method or ole. RPD reported from AK Petroleum methods 20%; all Comments:
	v. If %R or RPD is outside	of acceptable limits, what sample Commen	es are affected? ts:
No	t applicable.		
	vi. Do the affected sample(s)) have data flags? If so, are the da	ata flags clearly defined? Comments:
L	vii. Data quality or usability a	affected? (Use comment box to e	xplain.)
No	impact.		
c. S	urrogates – Organics Only		
	i. Are surrogate recoveries	reported for organic analyses – fi 🔀 NA (Please explain.)	ield, QC and laboratory samples? Comments:
On	ly SM9222D was evaluated for	this work order.	
2.7		Page 4 of 7	1/

Confidentia LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16	

ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)

		Yes	No	NA (Please exp	plain.)	Comments:
		Do the sau flags cleau Yes	mple results w rly defined?	ith failed surrogate re ⊠ NA (Please exp	ecoveries have da plain.)	ta flags? If so, are the data Comments:
	iv.	Data qual	ity or usability	affected? (Use the c	omment box to ex Comments:	xplain.)
No i	impac	t.				
d. Tr <u>So</u>	ip bla <u>sil</u>	ınk – Vola	atile analyses o	only (GRO, BTEX, V	olatile Chlorinato	ed Solvents, etc.): <u>Water and</u>
	i.	One trip b (If not, en Yes	lank reported ter explanation	per matrix, analysis a n below.) NA (Please exp	and for each coole plain.)	er containing volatile samples? Comments:
	ii.	Is the coo (If not, a c Yes	ler used to tran comment expla No	nsport the trip blank a aining why must be e ⊠ NA (Please exp	and VOA samples intered below) plain.)	s clearly indicated on the COC Comments:
		All results Yes	s less than PQ	L? NA (Please exp	plain.)	Comments:
	iv.]	If above F	QL, what sam	ples are affected?	Comments:	
Not	appli	cable.				
	v.]	Data qual	ity or usability	affected? (Please ex	plain.) Comments:	
No i	impac	t.				

			LNG Facilities Groundwater Quality U	Confidential / Sampling and Testing Report - Event 2 SAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
e. Fie	eld Duplicate			
	i. One field	l duplicate sub No	mitted per matrix, analysis and 10) project samples? Comments:
The f of fie samp matri	ield duplicate ld duplicate c ling event. T x and analyte	sample freque ount, Event A his project sati	ncy is presented below in Table samples collected in August wer sfied the required frequency of	12 of the QAR. For the purposes re combined with this September one per 10 samples or less per
	ii. Submitte	ed blind to lab?	NA (Please explain.)	Comments:
Pare	nt Sample and	l Field Duplica	te Pairs are presented in Table 13	of the QAR.
	iii. Precision (Recomm	n – All relative nended: 30% w	percent differences (RPD) less th vater, 50% soil)	an specified DQOs?
	RPD (%)) = Absolute va	lue of: $(R_1 - R_2)$ x 100	
			$((R_1+R_2)/2)$	
	Whe	re $R_1 = $ Sample	e Concentration	
	Xes Yes	$R_2 = Field L$	\square NA (Please explain.)	Comments:
Field For t	l Duplicate R his work orde	PD exceedance er, yes.	s are presented Table 14 of the Q	AR.
	iv Dote que	lity or usability	u offected? (Use the comment here	y to explain why or why not)

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

No impact. f. Decontamination or Equipment Blank (If not used explain why). X NA (Please explain.) Yes No Comments: Not required for SM9222D, the only method included in this work order. i. All results less than PQL? \square NA (Please explain.) Yes No Comments: ii. If above PQL, what samples are affected? Comments: Not applicable.

iii. Data quality or usability affected? (Please explain.)

Comments:

		No impact.				
_						
7.	Other	<u>: Data Flags/Qual</u>	ifiers (ACOE,	AFCEE, Lab Specific, etc.)		
	a.	Defined and ap	propriate?			
		🖂 Yes	No	NA (Please explain.)	Comments:	
				`````_````		

Completed by:	Jennifer McLean		
Title:	Project Scientist	Date: Nove	mber 2, 2016
CS Report Name:	Event 2 Sampling Kenai Wells Groundwater	Report Date:	October 14, 2016
Consultant Firm:	SLR International Corporation		
Laboratory Name	SGS North America, Inc. Labor	atory Report Number:	1165622
ADEC File Numb	er: NA ADEC Re	ecKey Number: NA	A
1. <u>Laboratory</u> a. Did an	ADEC CS approved laboratory receive and performing the second sec	erform all of the subm lain.) Cor	itted sample analyses? nments:
b. If the s laborat	amples were transferred to another "network" fory, was the laboratory performing the analyse Yes No NA (Please exp	laboratory or sub-comes ADEC CS approved lain.)	tracted to an alternate 1? nments:
Chloropl NELAP a	nyll-a analysis was transferred to ALS laborate	ory in Kelso, Washing	ton (ALS). ALS is
2. <u>Chain of Custo</u> a. COC in	ody (COC) nformation completed, signed, and dated (inclu Yes INO NA (Please exp	uding released/receive lain.) Cor	d by)? nments:
b. Correc	t analyses requested? Yes No NA (Please exp	lain.) Cor	nments:

2. Laboratory Samula Dessint Dessure	LNG Facilities Groundwater Quali	Confidential ity Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
a. Sample/cooler temperature de Yes No	ocumented and within range at rec NA (Please explain.)	ceipt $(4^\circ \pm 2^\circ C)$ ? Comments:
Table 1 of the QAR provides a at the laboratory slightly below cooler temperatures within a na evidence of freezing was noted sample data are considered acce The sample receipt form noted APT-3-0916, and APT-9-0916	sample receipt summary. Six of the 2°C criteria due to the inheren rrow temperature range using froz for any of the samples within these eptable without qualification. that upon arrival at ALS, chloroph were frozen.	ne project coolers were received t imprecision of achieving stable en gel ice for cooling. No ice or e coolers. Therefore, reported yll-a samples for APT-1-0916,
b. Sample preservation acceptal Volatile Chlorinated Solvents	ble – acidified waters, Methanol pr s, etc.)?	reserved VOC soil (GRO, BTEX, Comments:
c. Sample condition documente	ed – broken, leaking (Methanol), ze ⊠ NA (Please explain.)	ero headspace (VOC vials)? Comments:
No issues were noted.		
<ul> <li>d. If there were any discrepanci containers/preservation, samp samples, etc.?</li> <li>Yes <a href="https://www.weithing.com">No</a></li> </ul>	es, were they documented? For ex ple temperature outside of acceptal	ample, incorrect sample ble range, insufficient or missing Comments:
Temperatures were noted.		
e. Data quality or usability affect	cted? (Please explain.) Comm	ents:
Regarding the temperature below freezing for samples below. Dat Regarding the chlorophyll-a san concern of freezing is broken or acceptable condition, data quality	bw 2°C, the sample receipt form di ca were considered not impacted. mples, frozen sample would not in r leaking containers. Since sample ty or usability was not impacted.	d not note any evidence of npact chloraphyll-a analysis. The containers were otherwise in
4. Case Narrative		
a. Present and understandable?	NA (Please explain.)	Comments:
b. Discrepancies, errors or QC f	failures identified by the lab?	Comments:
The temperature exceedances we the case narrative.	were noted on the sample receipt for	orms, but were not documented in

<ul> <li>c. Were all corrective actions documented?</li> <li>Yes No NA (Please explain.) Comments:</li> <li>Project samples APT-1-0916, APT-3-0916, and APT-9-0916 were re-extracted past hold time 5 b below.</li> <li>d. What is the effect on data quality/usability according to the case narrative? Comments:</li> <li>Refer to the LCS/LCSD section of this checklist and the QAR.</li> <li>mples Results <ul> <li>a. Correct analyses performed/reported as requested on COC?</li> <li>Yes No NA (Please explain.) Comments:</li> </ul> </li> <li>b. All applicable holding times met? <ul> <li>Yes No NA (Please explain.)</li> <li>Comments:</li> </ul> </li> <li>For SW8270D SIM Pesticides, samples APT-1-0916, APT-3-0916, APT-9-0916, and the MS MSD for parent sample APT-1-0916 were initially extracted within method hold time. Howev due to low sample surrogate recovery in the associated LCS/LCSD, samples APT-1-0916, APT-3-0916, APT-3-0916, and PT-1-0916, MSD were subsequently re-extracted for confirmation past the method allowed hold time. Howev hold time. The re-extracted results (beyond holding time) were only used to confirm the initi sampler results, only the initial sample results within holding time vere reported. Refer to the Surrogate Recovery and LCS/LCSD sections for further discussion.</li> <li>c. All soils reported on a dry weight basis? <ul> <li>Yes No</li> <li>NA (Please explain.)</li> <li>Comments:</li> </ul> </li> <li>Only water samples were included in this work order.</li> <li>d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level project?</li> <li>Yes No</li> <li>NA (Please explain.)</li> <li>Comments:</li> </ul> <li>Arcolor-1221 LODs for samples APT-1-0916, APT-3-0916, and APT-9-0916 were slightly above ADEC 18 AAC 75, Table C limit of 0.005 mg/L. All detection limits (DLs) were beld the Table C limit; therefore, data quality or usability was not affected.</li>			LNG Facilities Groundwater Quali	Confidential ty Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Project samples APT-1-0916, APT-3-0916, and APT-9-0916 were re-extracted past hold time 5 b below.         d. What is the effect on data quality/usability according to the case narrative? Comments:         Refer to the LCS/LCSD section of this checklist and the QAR.         umples Results         a. Correct analyses performed/reported as requested on COC?         Yes       No         Yes       No         Yes       No         NA (Please explain.)       Comments:         For SW8270D SIM Pesticides, samples APT-1-0916, APT-3-0916, APT-9-0916, and the MS MSD for parent sample APT-1-0916 were initially extracted within method hold time. Howev due to low sample surrogate recovery in the initial extraction, samples APT-1-0916, APT-3-0916, APT-3-0916, and APT-3-0916, and APT-1-0916 MSD were also associated with the endosulfan LCS/L QC failures. The re-extracted results (beyond holding time) were only used to confirm the initia sample results, only the initial sample results within holding time were reported. Refer to the Surrogate Recovery and LCS/LCSD sections for further discussion.         c. All soils reported on a dry weight basis?       Yes       No       NA (Please explain.)       Comments:         Only water samples were included in this work order.       .       Are the reported PQLs less than the Cleanup Level or the minimum required detection level project?       Yes       No       NA (Please explain.)       Comments:         .       .       .       .       .       .       .       . <th>c. Were all correct Yes</th> <th>tive actions docu</th> <th>umented?</th> <th>Comments:</th>	c. Were all correct Yes	tive actions docu	umented?	Comments:
d. What is the effect on data quality/usability according to the case narrative? Comments:         Refer to the LCS/LCSD section of this checklist and the QAR.         mples Results         a. Correct analyses performed/reported as requested on COC?         Yes       No         NA (Please explain.)       Comments:         .         .         .       Yes         .       No         .       No         .       Yes         . <td< th=""><th>Project samples 5 b below.</th><th>APT-1-0916, AP</th><th>T-3-0916, and APT-9-0916 wer</th><th>re re-extracted past hold time. See</th></td<>	Project samples 5 b below.	APT-1-0916, AP	T-3-0916, and APT-9-0916 wer	re re-extracted past hold time. See
Refer to the LCS/LCSD section of this checklist and the QAR.         mples Results         a. Correct analyses performed/reported as requested on COC?         Yes       No       NA (Please explain.)       Comments:         .         .       Yes       No       NA (Please explain.)       Comments:         .       .       Yes       No       NA (Please explain.)       Comments:         .       .       Yes       No       NA (Please explain.)       Comments:         .       .       Yes       No       NA (Please explain.)       Comments:         .       .       Yes       No       NA (Please explain.)       Comments:         .       .       .       .       .       .         .       .       .       .       .       .         .       .       .       .       .       .         .       .       .       .       .       .       .         .       .       .       .       .       .       .       .         .       .       .       .       .       .       .       .       .       .       .       .       .       .	d. What is the eff	ect on data qualit	ty/usability according to the case Comm	e narrative? ents:
a.       Correct analyses performed/reported as requested on COC?	Refer to the LCS	/LCSD section o	f this checklist and the QAR.	
a. Correct analyses performed/reported as requested on COC?         □ Yes       □ No       □ NA (Please explain.)       Comments:         □       Yes       □ No       □ NA (Please explain.)       Comments:         □       Yes       □ No       □ NA (Please explain.)       Comments:         □       Yes       □ No       □ NA (Please explain.)       Comments:         □       Yes       □ No       □ NA (Please explain.)       Comments:         □       Yes       □ No       □ NA (Please explain.)       Comments:         □       Yes       □ No       □ NA (Please explain.)       Comments:         □       Yes       □ No       □ NA (Please explain.)       Comments:         □       Yes       □ No       □ NA (Please explain.)       Comments:         □       and APT-1-0916 MSD were subsequently re-extracted for confirmation past the method allowed hold time. Howey due to low endosulfan I recovery in the associated LCS/LCSD, samples APT-9-09 and the APT-1-0916 MS were also re-extracted past the method allowed hold time. Samples APT-9-09 and the APT-1-0916 MS were also re-extracted past the method allowed hold time. Samples APT-0916, APT-3-0916, and APT-1-0916 MSD were also associated with the endosulfan LCS/LQC failures. The re-extracted results (beyond holding time) were only used to confirm the init sample results, only the initial sample results within holding time were reported. Refer to the Surrogate Recovery and LCS/	ples Results			
b. All applicable holding times met?       ○       ○ NA (Please explain.)       Comments:         For SW8270D SIM Pesticides, samples APT-1-0916, APT-3-0916, APT-9-0916, and the MS MSD for parent sample APT-1-0916 were initially extracted within method hold time. Howev due to low samples urrogate recovery in the initial extraction, samples APT-1-0916, APT-3-09       and the MSD MAPT-1-0916 MSD were subsequently re-extracted for confirmation past the method allow hold time. Due to low endosulfan I recovery in the associated LCS/LCSD, samples APT-9-09         and APT-1-0916 MSD were also re-extracted past the method allowed hold time. Samples APT-9-09       and the APT-1-0916 MS were also re-extracted past the method allowed hold time. Samples APT-9-09         and the APT-1-0916 MS were also re-extracted past the method allowed hold time. Samples APT-9-09       and the APT-3-0916, and APT-1-0916 MSD were also associated with the endosulfan LCS/LQC failures. The re-extracted results (beyond holding time) were only used to confirm the initi sample results, only the initial sample results within holding time were reported. Refer to the Surrogate Recovery and LCS/LCSD sections for further discussion.         c. All soils reported on a dry weight basis?       ○         ○       No       ○ NA (Please explain.)       Comments:         Only water samples were included in this work order.           d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level project?       ○ NA (Please explain.)       Comments:         Aroclor-1221 LODs for samples APT-1-0916, APT-3-0916, and APT-9-0916 were slightly above ADEC 18 AAC 75	a. Correct analys Xes	es performed/rep	orted as requested on COC?	Comments:
For SW8270D SIM Pesticides, samples APT-1-0916, APT-3-0916, APT-9-0916, and the MS         MSD for parent sample APT-1-0916 were initially extracted within method hold time. Howev due to low sample surrogate recovery in the initial extraction, samples APT-1-0916, APT-3-09         and APT-1-0916 MSD were subsequently re-extracted for confirmation past the method allow hold time. Due to low endosulfan I recovery in the associated LCS/LCSD, samples APT-9-09         and the APT-1-0916 MSD were also re-extracted past the method allowed hold time. Samples APT-9-09         and the APT-1-0916, APT-3-0916, and APT-1-0916 MSD were also associated LCS/LCSD, samples APT-9-09         and the APT-1-0916 MS were also re-extracted past the method allowed hold time. Samples APT-9-09         and the APT-1-0916, and APT-1-0916 MSD were also associated with the endosulfan LCS/LQC failures. The re-extracted results (beyond holding time) were only used to confirm the initia sample results, only the initial sample results within holding time were reported. Refer to the Surrogate Recovery and LCS/LCSD sections for further discussion.         c. All soils reported on a dry weight basis?	b. All applicable	holding times m€	et?	Comments:
<ul> <li>c. All soils reported on a dry weight basis?</li> <li>Yes No NA (Please explain.) Comments:</li> <li>Only water samples were included in this work order.</li> <li>d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level project?</li> <li>Yes No NA (Please explain.) Comments:</li> <li>Aroclor-1221 LODs for samples APT-1-0916, APT-3-0916, and APT-9-0916 were slightly above ADEC 18 AAC 75, Table C limit of 0.005 mg/L. All detection limits (DLs) were below the Table C limit; therefore, data quality or usability was not affected.</li> </ul>	and APT-1-0916 hold time. Due to and the APT-1-09 1-0916, APT-3-0 QC failures. The sample results, or Surrogate Recover	MSD were subse low endosulfan 916 MS were also 916, and APT-1- re-extracted resu ily the initial sam ery and LCS/LCS	equently re-extracted for confirm I recovery in the associated LCS o re-extracted past the method a 0916 MSD were also associated lts (beyond holding time) were ople results within holding time SD sections for further discussio	nation past the method allowed S/LCSD, samples APT-9-0916, llowed hold time. Samples APT- l with the endosulfan LCS/LCSD only used to confirm the initial were reported. Refer to the m.
Only water samples were included in this work order.         d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level project?         □ Yes       ○ NA (Please explain.)         Comments:         Aroclor-1221 LODs for samples APT-1-0916, APT-3-0916, and APT-9-0916 were slightly above ADEC 18 AAC 75, Table C limit of 0.005 mg/L. All detection limits (DLs) were below the Table C limit; therefore, data quality or usability was not affected.         e       Data quality or usability affected?	c. All soils report	ed on a dry weig	ht basis? NA (Please explain.)	Comments:
<ul> <li>d. Are the reported PQLs less than the Cleanup Level or the minimum required detection level project? <ul> <li>Yes</li> <li>No</li> <li>NA (Please explain.)</li> </ul> </li> <li>Comments: <ul> <li>Aroclor-1221 LODs for samples APT-1-0916, APT-3-0916, and APT-9-0916 were slightly above ADEC 18 AAC 75, Table C limit of 0.005 mg/L. All detection limits (DLs) were below the Table C limit; therefore, data quality or usability was not affected.</li> </ul> </li> <li>e Data quality or usability affected?</li> </ul>	Only water samp	les were include	d in this work order.	
project?       Yes       No       NA (Please explain.)       Comments:         Aroclor-1221 LODs for samples APT-1-0916, APT-3-0916, and APT-9-0916 were slightly above ADEC 18 AAC 75, Table C limit of 0.005 mg/L. All detection limits (DLs) were below the Table C limit; therefore, data quality or usability was not affected.         e       Data quality or usability affected?	d. Are the reporte	d PQLs less thar	the Cleanup Level or the minir	num required detection level for t
<ul> <li>Aroclor-1221 LODs for samples APT-1-0916, APT-3-0916, and APT-9-0916 were slightly above ADEC 18 AAC 75, Table C limit of 0.005 mg/L. All detection limits (DLs) were below the Table C limit; therefore, data quality or usability was not affected.</li> <li>e Data quality or usability affected?</li> </ul>	project?	🔀 No	NA (Please explain.)	Comments:
e Data quality or usability affected?	Aroclor-1221 I above ADEC 1 the Table C lin	ODs for samples 8 AAC 75, Table iit; therefore, dat	s APT-1-0916, APT-3-0916, and c C limit of 0.005 mg/L. All det a quality or usability was not af	d APT-9-0916 were slightly ection limits (DLs) were below fected.
Comments:	e. Data quality or	usability affecte	d? Comm	ents:
Regarding hold times, refer to the Surrogate Recovery and LCS/LCSD sections for further discussion.	Regarding hold t discussion.	imes, refer to the	e Surrogate Recovery and LCS/I	CSD sections for further

## 6. <u>QC Samples</u>

a. Method Blank			
i. One me	thod blank rep	orted per matrix, analysis and 20 s	samples?
$\boxtimes$ Yes	∐ No	NA (Please explain.)	Comments:
ii. All met	thod blank resul	lts less than PQL?	
Yes	🖂 No	NA (Please explain.)	Comments:
Analytes were no	ot detected in ar	ny method blanks at or above the I	Limit of Detection (LOD), except
as noted in Table	4 of the QAR.		
iii If show	a DOL what as	mulas and offected?	
111. II above	e PQL, what sat	mples are affected?	nto.
		Comme	ants.
Associated result	ts that were less	s than, or equal to, five times the b	lank detection (ten times for
common laborato	ry contaminant	s and metals) were considered affe	ected, and were qualified as
shown in Table 4	. Results were c	considered unaffected and not qua	lified nor shown on Table 4,
when associated s	sample results v	vere greater than five times the bla	ank detection or non-detect.
iv. Do the	affected sample	e(s) have data flags and if so, are the	he data flags clearly defined?
🔀 Yes	∐ No	NA (Please explain.)	Comments:
Data were qualif	ied as noted in '	Table 4 of the OAR	
Data Word quality			
v. Data qu	ality or usabili	ty affected? (Please explain.)	
1		Comme	ents:
T 11 CC	. 1 1.	11 1 1 1 1 1 1	
In all cases, affec	ted results wer	e well below applicable project clo	eanup levels. It is not uncommon
method performa	nce to observe s	several low level detections in the	method blanks. Data usability
was not affected.			
Laboratory Co.	ntual Campia/D	verliggte (LCS/LCSD)	
b. Laboratory Col	ntrol Sample/D	upicate (LCS/LCSD)	
i Organia	cs – One I CS/I	CSD reported per matrix analysis	s and 20 samples? (LCS/LCSD
require	d per AK metho	ods ICS required per SW846)	s and 20 samples: (LCS/LCSD
Ves		$\square$ NA (Please explain)	Comments:
			Comments.
ii. Metals/	Inorganics – or	ne LCS and one sample duplicate i	reported per matrix, analysis and 2
samples	s?		
Yes	🖂 No	NA (Please explain.)	Comments:
Oran ICS and a		re analyzed with each batch	
Or an LCS and a	II MIS/MISD WE	it analyzed with each Datch.	

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16. iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits?
And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)
$\square$ Yes $\square$ No $\square$ NA (Please explain.) Comments:
Table 8 of the QAR presents CCV recovery exceedances and affected data.Table 10 of the QAR presents LCS/LCSD recovery exceedances and affected data.
Table 11 of the QAR presents MS/MSD recovery exceedances and affected data.
<ul> <li>iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; al other analyses see the laboratory QC pages)</li> <li>Xes No NA (Please explain.) Comments:</li> </ul>
v. If %R or RPD is outside of acceptable limits, what samples are affected? Comments:
Affected data were presented in Tables 8, 10, and 11 of the QAR.
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? Yes No NA (Please explain.) Comments: Data were qualified as indicated in Tables 8, 10, and 11 of the OAR
Data were quantied as indicated in Tables 6, 10, and 11 of the Qrite.
vii. Data quality or usability affected? (Use comment box to explain.)
All affected results were well below applicable cleanup limits or the affected analyte was not regulated by 18 AAC 75, Table C. Data usability was not affected.
c. Surrogates – Organics Only
i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples Yes No NA (Please explain.) Comments:
Table 9 of the QAR presents CCV recovery exceedances and affected data
<ul> <li>ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)</li> <li>Yes No NA (Please explain.) Comments:</li> </ul>
Affected data were presented in Table 9 of the QAR

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 LISAL-EG-GRZZZ-00-002016-004 Rev. 0
iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?
$\square Yes \square No \square NA (Please explain.) Comments:$
Data were qualified as indicated in Table 9 of the QAR
iv. Data quality or usability affected? (Use the comment box to explain.) Comments:
Samples APT-1-0916, APT-3-0916, and APT-1-0916 MSD for pesticides via SW8270D SIM were initially extracted within the method allowed (seven day) hold time with low surrogate recovery results as shown in Table 9. The samples were then re-extracted beyond the method holding time for confirmation. The re-extraction analysis for all samples had acceptable surrogate recovery. For all samples, the re-extract analysis confirmed the initial target analyte results reported as non-detect for all pesticide analytes. Only the data from the initial extraction performed within holding time was reported. The data for the associated pesticide analytes are considered potentially bias low.
d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): <u>Water and Soil</u>
<ul> <li>i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples (If not, enter explanation below.)</li> <li>∑ Yes □ No □ NA (Please explain.) Comments:</li> </ul>
<ul> <li>ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC (If not, a comment explaining why must be entered below)</li> <li>☑ Yes □ No □ NA (Please explain.) Comments:</li> </ul>
iii. All results less than PQL? Yes No NA (Please explain.) Comments:
iv. If above PQL, what samples are affected? Comments:
Not applicable.
v. Data quality or usability affected? (Please explain.) Comments:
No impact.

			LNG Facilities Groundwater Qua	lity Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0
e. Fiel	ld Duplicate			16-Dec-16
	i. One field $\nabla$	l duplicate subr	nitted per matrix, analysis and $\Box$ NA (Please explain)	10 project samples?
				Comments.
The field of field sampli matrix	eld duplicate d duplicate c ing event. Th and analyte.	sample frequer ount, Event A his project satis	ncy is presented below in Table samples collected in August we sfied the required frequency o	e 12 of the QAR. For the purposes ere combined with this September of one per 10 samples or less per
	ii. Submitte Xes	d blind to lab?	NA (Please explain.)	Comments:
Paren	t Sample and	l Field Duplicat	e Pairs are presented in Table 1	3 of the QAR.
	iii. Precisior (Recomm	n – All relative j nended: 30% w	percent differences (RPD) less ater, 50% soil)	than specified DQOs?
	RPD (%)	) = Absolute va	lue of: $(R_1-R_2)$ x 100	
			$((R_1+R_2)/2)$	
	When	re $\mathbf{R}_1 = \mathbf{Sample}$	Concentration	
		$\underline{R_2} = Field D$	uplicate Concentration	
	Yes	🖂 No	NA (Please explain.)	Comments:
Field	Duplicate RI	PD exceedances	s are presented Table 14 of the	QAR.

iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

All results qualified due to parent sample/field duplicate RPD exceedances were well below the 18 AAC Table C project limits. The impact of the field duplicate precision exceedances were considered negligible.

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f. D		on or Equipme	ent Blank (If not used explain why).	
	Yes Yes	No	NA (Please explain.)	Comments:
Equi Meth	pment Blanks od 200.8.	were analyze	d at appropriate frequencies for total	and dissolved metals by EPA
	i. All resu	lts less than P	QL?	
	Yes	No No	NA (Please explain.)	Comments:
Equ	ipment blank	detections abo	ove the LOD are presented in Table 3	5 of the QAR.
	ii. If above	PQL, what sa	amples are affected? Commen	ts:
Aff	ected samples	are presented	in Table 6 of the QAR.	
	iii. Data qua	ality or usabili	ity affected? (Please explain.)	
			Commen	ts:
San Thes that appl sam	nple data <102 se results were of the equipm icable regulate ple data was c	K the level of e qualified as ' ent blanks. A ory limits (18 onsidered neg	the associated equipment blank deter "B" to indicate potential for similar of all equipment blank contamination of AAC Table C); therefore, the impac	ctions are shown in Table 6. contamination in the samples as bserved was <100X below the et on usability of the associated
Other Da a. D	ta Flags/Quali efined and ap	fiers (ACOE, propriate?	AFCEE, Lab Specific, etc.)	
	X Yes	No No	NA (Please explain.)	Comments:

Completed by:	Jennifer McLean				
Title:	Project Scientist	Date: November 2, 2016			
CS Report Name:	Event 2 Sampling Kenai Wells Groundwater	Report Date: October 10, 2016			
Consultant Firm: SLR International Corporation					
Laboratory Name	SGS North America, Inc. Labora	tory Report Number: 1165638			
ADEC File Numb	er: NA ADEC Rec	cKey Number: NA			
1. <u>Laboratory</u> a. Did an	ADEC CS approved laboratory receive and <u>per</u> Yes No NA (Please expla	rform all of the submitted sample analyses? ain.) Comments:			
b. If the s laborat	amples were transferred to another "network" la ory, was the laboratory performing the analyses Yes No NA (Please expla nyll-a analysis was transferred to ALS laborator	aboratory or sub-contracted to an alternate s ADEC CS approved? ain.) Comments: ry in Kelso, Washington (ALS). ALS is			
2. <u>Chain of Custo</u> a. COC i	ccredited for this analysis.         ody (COC)         oformation completed, signed, and dated (includ         Yes       No         NA (Please explanation)	ding released/received by)? ain.) Comments:			
b. Correc	t analyses requested? Yes INO NA (Please expla	ain.) Comments:			

3 La	LNG Facilities Groundwater Quality Sampling and Testin USAL-FG-GRZZZ-00-( Laboratory Sample Receipt Documentation	Confidential g Report - Event 2 002016-004 Rev. 0 16-Dec-16
. <u>Du</u>	a. Sample/cooler temperature documented and within range at receipt $(4^{\circ} \pm 2^{\circ} C)$ ? Yes No NA (Please explain.) Comment	its:
	Table 1 of the QAR provides a sample receipt summary. Six of the project coolers at the laboratory slightly below the 2°C criteria due to the inherent imprecision of a cooler temperatures within a narrow temperature range using frozen gel ice for cool evidence of freezing was noted for any of the samples within these coolers. Therefore sample data are considered acceptable without qualification. The sample receipt form noted that upon arrival at ALS, chlorophyll-a samples for and MW-13B-0916 were frozen.	were received achieving stable oling. No ice or ore, reported APT-2-0916,
	<ul> <li>b. Sample preservation acceptable – acidified waters, Methanol preserved VOC so Volatile Chlorinated Solvents, etc.)?</li> </ul>	il (GRO, BTEX,
	Yes No NA (Please explain.) Commen	its:
	c. Sample condition documented – broken, leaking (Methanol), zero headspace (V Yes No XA (Please explain.) Commer	OC vials)? its:
	No issues were noted.	
	<ul> <li>d. If there were any discrepancies, were they documented? For example, incorrect containers/preservation, sample temperature outside of acceptable range, insuffision samples, etc.?</li> <li>Yes No NA (Please explain.) Commentation</li> </ul>	sample cient or missing its:
	Temperatures were noted.	
	e. Data quality or usability affected? (Please explain.) Comments:	
	Regarding the temperature below 2°C, the sample receipt form did not note any every freezing for samples below. Data were considered not impacted. Regarding the chlorophyll-a samples, frozen sample would not impact chloraphyll concern of freezing is broken or leaking containers. Since sample containers were of acceptable condition, data quality or usability was not impacted.	ridence of -a analysis. The otherwise in
4. <u>Ca</u>	Case Narrative a. Present and understandable?	
	Yes No NA (Please explain.) Commen	its:
	b. Discrepancies, errors or QC failures identified by the lab?YesNoNA (Please explain.)Comment	its:
	The temperature exceedances were noted on the sample receipt forms, but were not the case narrative.	ot documented in

				LNG Facilities Groundwater Qu	Confidential ality Sampling and Testing Report - Event 2
	c.	Were all correcti	ve actions doc	umented?	16-Dec-16
		Yes	No No	NA (Please explain.)	Comments:
	]	None were taken.			
	d.	What is the effec	et on data quali	ty/usability according to the ca Com	ase narrative? ments:
	]	No impact.			
5 50		las Dasults			
5. <u>5a</u>	a.	Correct analyses Xes	performed/rep	orted as requested on COC?	Comments:
	b.	All applicable ho	olding times me	et? NA (Please explain.)	Comments:
		For Fecal Coliform	n by method SN	M21 9222D, samples MW-13H	3-0916 and APT-2-0916 were
	r r r	eceived past the m eplacement sample esults from this wo	ethod allowed es were analyze ork order were	eight hour hold time. Theses s ed within hold time as work or not reported.	amples were re-collected and the order 1165682. The fecal coliform
	C.	All soils reported	d on a dry weig	ht basis?	
		Yes	No	$\square$ NA (Please explain.)	Comments:
		Only water sample	es were include	d in this work order.	
	d.	Are the reported	PQLs less than	the Cleanup Level or the min	imum required detection level for the
		Yes	🗌 No	NA (Please explain.)	Comments:
	e.	Data quality or u	sability affecte	d? Com	ments:
	]	No impact.			
6. <u>QC</u>	<u>C Sa</u> a.	amples Method Blank i. One meth ⊠ Yes	nod blank repor	rted per matrix, analysis and 2	0 samples? Comments:
	_	ii. All metho	od blank result	s less than PQL?	Comments:
	]	For this work orde	r, yes.		
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iii. If above PQL, what samples are affected? Comments:
For this work order, not applicable.
iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined? Yes No NA (Please explain.) Comments:
For this work order, not applicable.
v. Data quality or usability affected? (Please explain.) Comments:
For this work order, no impact
b. Laboratory Control Sample/Duplicate (LCS/LCSD)
<ul> <li>i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)</li> <li>☑ Yes □ No □ NA (Please explain.) Comments:</li> </ul>
<ul> <li>ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 2 samples?</li> <li>☑ Yes □ No □ NA (Please explain.) Comments:</li> </ul>
<ul> <li>iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)</li> <li>☑ Yes □ No □ NA (Please explain.) Comments:</li> </ul>
<ul> <li>iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; al other analyses see the laboratory QC pages)</li> <li>∑ Yes</li> <li>No</li> <li>NA (Please explain.)</li> </ul>
v. If %R or RPD is outside of acceptable limits, what samples are affected? Comments:

Not applicable.

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vi. Do the affected sample	$e(s)$ have data flags? If so, are the data $\square$ NA (Please explain.)	flags clearly defined? Comments:
Not applicable.		
vii. Data quality or usabilit	ty affected? (Use comment box to exp	plain.)
For this work order, not impact.		
c. Surrogates – Organics Only		
i. Are surrogate recoverie	es reported for organic analyses – fiel	d, QC and laboratory samples? Comments:
<ul> <li>ii. Accuracy – All percent And project specified I analyses see the labora</li> <li>☑ Yes □ No</li> </ul>	t recoveries (%R) reported and within DQOs, if applicable. (AK Petroleum r tory report pages) NA (Please explain.)	nethod or laboratory limits? nethods 50-150 %R; all other Comments:
<ul> <li>iii. Do the sample results v flags clearly defined?</li> <li>☐ Yes ☐ No</li> <li>iv. Data quality or usabilit</li> </ul>	with failed surrogate recoveries have a NA (Please explain.)	data flags? If so, are the data Comments: 
	Comments:	
No impact. d. Trip blank – Volatile analyses <u>Soil</u>	only (GRO, BTEX, Volatile Chlorina	ated Solvents, etc.): Water and
<ul> <li>i. One trip blank reported (If not, enter explanation)</li> <li>☐ Yes ☐ No</li> </ul>	d per matrix, analysis and for each coo on below.) NA (Please explain.)	oler containing volatile samples? Comments:
No volatile methods/samples we	ere included in this work order.	
<ul> <li>ii. Is the cooler used to tra (If not, a comment exp</li> <li>☐ Yes</li> <li>☐ No</li> </ul>	ansport the trip blank and VOA sample laining why must be entered below) NA (Please explain.)	les clearly indicated on the COC Comments:

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iii. All results less than PQL? Yes No NA (Please explain.) Comments:
iv. If above PQL, what samples are affected? Comments:
Not applicable.
v. Data quality or usability affected? (Please explain.) Comments:
No impact.
e. Field Duplicate
<ul> <li>i. One field duplicate submitted per matrix, analysis and 10 project samples?</li> <li>∑ Yes □ No □ NA (Please explain.) Comments:</li> </ul>
The field duplicate sample frequency is presented below in Table 12 of the QAR. For the purpose of field duplicate count, Event A samples collected in August were combined with this Septembra sampling event. This project satisfied the required frequency of one per 10 samples or less protect and analyte. No field duplicates were included in this work order.
ii. Submitted blind to lab? $\boxtimes$ Yes $\square$ No $\square$ NA (Please explain.)Comments:
Parent Sample and Field Duplicate Pairs are presented in Table 13 of the QAR. No field duplicates were included in this work order.
<ul><li>iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)</li></ul>
RPD (%) = Absolute value of: $(R_1-R_2)$ $x \ 100$
$((R_1+R_2)/2)$
Where $R_1$ = Sample Concentration $R_2$ = Field Duplicate Concentration
Yes $\boxtimes$ No $\square$ NA (Please explain.)Comments:
Field Duplicate RPD exceedances are presented Table 14 of the QAR. No field duplicates were included in this work order.
iv. Data quality or usability affected? (Use the comment box to explain why or why not.)
Comments:

For this work order, no impact.

f.	Decontamination	or Equipment	Blank (If not used	explain why).
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	Yes	□ No	NA (Please explain.)	Comments:		
[	Not applicable to	this work orde	er.			
	i. All resu	lts less than P	PQL?			
	Yes	🗌 No	NA (Please explain.)	Comments:		
	ii. If above	e PQL, what sa	amples are affected?			
			Comment	ts:		
	iii. Data qu	ality or usabil	ity affected? (Please explain.)			
			Comment	ts:		
	No impact.					
7. <u>Oth</u>	7. <u>Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)</u> a Defined and appropriate?					
	Yes	No	NA (Please explain.)	Comments:		

Completed by:	Jennifer McLean	
Title:	Project Scientist	Date: November 3, 2016
CS Report Name: Consultant Firm:	Event 2 Sampling Kenai Wells Groundwater	Report Date: October 15, 2016
Laboratory Name	SGS North America, Inc.	boratory Report Number: 1165651
ADEC File Numb	ber: NA ADEC	C RecKey Number: NA
1. <u>Laboratory</u> a. Did an	ADEC CS approved laboratory receive an Yes No NA (Please	d <u>perform</u> all of the submitted sample analyses? explain.) Comments:
b. If the s laborat	samples were transferred to another "netwo tory, was the laboratory performing the ana Yes No XA (Please	rk" laboratory or sub-contracted to an alternate lyses ADEC CS approved? explain.) Comments:
2. <u>Chain of Cust</u> a. COC i	ody (COC) nformation completed, signed, and dated (i Yes No NA (Please	ncluding released/received by)? explain.) Comments:
b. Correc	et analyses requested? Yes No NA (Please	explain.) Comments:
3. <u>Laboratory Sa</u> a. Sampl	<u>Emple Receipt Documentation</u> e/cooler temperature documented and with Yes No NA (Please	in range at receipt $(4^\circ \pm 2^\circ C)$ ? explain.) Comments:

			LNG Facilities Groundwater Quality San USAL-	Confidential ppling and Testing Report - Event 2 FG-GRZZZ-00-002016-004 Rev. 0 16 Dec. 16		
b.	b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?					
	Yes [	] No	NA (Please explain.)	Comments:		
c.	Sample condition do	ocumented – No	broken, leaking (Methanol), zero h NA (Please explain.)	eadspace (VOC vials)? Comments:		
N	lo issues were noted.					
d.	If there were any dis containers/preservat samples, etc.?	crepancies, v ion, sample t	were they documented? For exampl emperature outside of acceptable ra	e, incorrect sample ange, insufficient or missing		
	Yes	No	NA (Please explain.)	Comments:		
1	No issues were noted.					
e.	Data quality or usab	ility affected	? (Please explain.) Comments:			
Ν	lo impact.					
Case N	<u>Varrative</u>					
a.	Present and understa	ndable? ] No	NA (Please explain.)	Comments:		
b.	Discrepancies, error	s or QC failu ] No	res identified by the lab?	Comments:		
c.	Were all corrective and Yes	actions docur ] No	nented?	Comments:		
I	Project samples APT-	2-0916 and N	AW-13B-0916 were re-extracted pa	ast hold time. See 5 b below.		
d.	What is the effect or	n data quality	/usability according to the case nar Comments:	rative?		
F	Refer to the LCS/LCS	D section of	this checklist and the QAR.			
Sampl	es Results					
<u>əampı</u> a.	Correct analyses per	formed/repoi	rted as requested on COC?	Comments:		

h	All applicable holding times mat?	LNG Facilities Groundwater Quality Samplin USAL-FG-	Confidential g and Testing Report - Event 2 GRZZZ-00-002016-004 Rev. 0 16-Dec-16
U	$\Box \operatorname{Yes} \qquad \Box \operatorname{No} \qquad \Box$	] NA (Please explain.)	Comments:
	For SW8270D SIM Pesticides, samp within method hold time. However, d LCS/LCSD, samples APT-2-0916 and hold time. The re-extracted results (be sample results. Only the initial sample LCS/LCSD section for further discuss For nitrate/nitrite by method SM21 4 were initially analyzed within the met required closing CCV was analyzed. T holding time for confirmation. Only to time was reported. Refer to the CCV a	les APT-2-0916 and MW-13B-091 ue due to low endosulfan I recover d MW-13B-0916 were re-extracted eyond holding time) were only use e results within holding time were sion. 500-NO3-F, samples for APT-2-09 thod allowed (28 day) hold time; he The samples were then re-analyzed the data from the initial analysis per section for further discussion.	6 were initially extracted by in the associated l past the method allowed d to confirm the initial reported. Refer to the 216 and MW-13B-0916 owever, no method l beyond the method erformed within holding
C.	e. All soils reported on a dry weight ba	asis? ] NA (Please explain.)	Comments:
	Only water samples were included in t	this work order.	
d	I. Are the reported PQLs less than the project? □ Yes □ No □	Cleanup Level or the minimum rec ] NA (Please explain.)	quired detection level for the Comments:
	Aroclor-1221 LODs for samples AP AAC 75, Table C limit of 0.005 mg/ therefore, data quality or usability wa	T-2-0916 and MW-13B-0916 were L. All detection limits (DLs) were as not affected.	e slightly above ADEC 18 below the Table C limit;
e.	e. Data quality or usability affected?	Comments:	
	Regarding hold times, refer to the LCS For PQL, since DLs met limits, no imp	S/LCSD section for further discussing pact.	ion.
6. <u>QC S</u> а.	Samples . Method Blank i. One method blank reported p ∑ Yes ☐ No ☐	per matrix, analysis and 20 samples NA (Please explain.)	s? Comments:
L	ii. All method blank results less ☐ Yes	s than PQL? ] NA (Please explain.)	Comments:
	Analytes were not detected in any met as noted in Table 4 of the QAR.	hod blanks at or above the Limit o	f Detection (LOD), except

iii. If above PQL, what samples are affected?

### Comments:

Associated results that were less than, or equal to, five times the blank detection (ten times for common laboratory contaminants and metals) were considered affected, and were qualified as shown in Table 4. Results were considered unaffected and not qualified nor shown on Table 4, when associated sample results were greater than five times the blank detection or non-detect.
when associated sample results were greater than nive times the stank detection of non detect.
iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined? $\boxtimes$ Yes $\square$ No $\square$ NA (Please explain.)Comments:
Data were qualified as noted in Table 4 of the OAR.
v. Data quality or usability affected? (Please explain.) Comments:
In all cases, affected results were well below applicable project cleanup levels. It is not uncommon method performance to observe several low level detections in the method blanks. Data usability was not affected.
b. Laboratory Control Sample/Duplicate (LCS/LCSD)
i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)
$\square$ Yes $\square$ No $\square$ NA (Please explain.) Comments:
For nitrate/nitrite by method SM21 4500-NO3-F, samples for APT-2-0916 and MW-13B-0916 were initially analyzed within the method allowed (28 day) hold time; however, no method required closing CCV was analyzed.
ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
YesNoNA (Please explain.)Comments:
An LCS and an MS/MSD were analyzed with each batch.
<ul> <li>iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)</li> <li>□ Yes □ No □ NA (Please explain.) Comments:</li> </ul>
Table 8 of the QAR presents CCV recovery exceedances and affected data.Table 10 of the QAR presents LCS/LCSD recovery exceedances and affected data.Table 11 of the QAR presents MS/MSD recovery exceedances and affected data.
iv. F l: I
---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------
Y
v. I
Affected d For nitrate
vi. I X Y
Data were For nitrate holding tim analyte res Because th were obser
vii. I
All affecte regulated b For nitrate
All affecte regulated b For nitrate c. Data was
All affecte regulated b For nitrate c. Data was i. A X
All affecte regulated b For nitrate c. Data wat i. A N Y
All affecter regulated b For nitrate
All affecter regulated b For nitrate c. Data wat i. A N Y ii. A A A Y III. A A A A A A A A A A A A A A A A A A A
All affecter regulated b For nitrate

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iv. Data quality or usability affected? (Use the comment box to explain.)

			Co	Comments:
No imp	act.			
l. Trip b <u>Soil</u>	olank – Vo	latile analyses	only (GRO, BTEX, Volatile	le Chlorinated Solvents, etc.): Water and
i.	One trip (If not, e	blank reported nter explanation	d per matrix, analysis and for on below.)	or each cooler containing volatile sample
	Yes	<u>No</u>	NA (Please explain.)	) Comments:
ii.	Is the co (If not, a Yes	oler used to tra comment exp	ansport the trip blank and V( laining why must be entered NA (Please explain.)	OA samples clearly indicated on the CO ed below)
				, commones
iii  >	. All resul Yes	ts less than P(	QL? □ NA (Please explain.)	) Comments:
iv	. If above	PQL, what sa	mples are affected?	Comments:
Not app	olicable.			
v.	Data qua	lity or usabili	ty affected? (Please explain.) Co	.) Comments:
No imp	act.			
e. Field	Duplicate			
i.	One field Yes	l duplicate sub	omitted per matrix, analysis NA (Please explain.)	and 10 project samples? ) Comments:
The field of field of sampling matrix an No field	d duplicate duplicate c g event. T nd analyte. duplicates	sample frequ ount, Event A his project sa were associat	ency is presented below in T samples collected in Augu tisfied the required frequen red with this work order.	Table 12 of the QAR. For the purposes ust were combined with this September ncy of one per 10 samples or less per

			LNG Facilities Groundwater Quality Sa USA	Confidential ampling and Testing Report - Event 2 L-FG-GRZZZ-00-002016-004 Rev. 0
	ii. Submitte	ed blind to lab?	NA (Please explain.)	Comments:
Par No	rent sample/fiel field duplicate	d duplicate pairs s were included	s are presented Table 13 of the QA with this work order.	R.
	iii. Precision (Recom	n – All relative p mended: 30% wa	percent differences (RPD) less than ater, 50% soil)	specified DQOs?
	RPD (%	) = Absolute val	ue of: $(R_1-R_2)$ x 100	
			$((R_1+R_2)/2)$	
	Whe	re $R_1 = $ Sample $R_2 = $ Field D	Concentration	
	Yes	$\mathbb{N}_2 = \text{Field Dt}$	$\square$ NA (Please explain.)	Comments:
Fie No	eld Duplicate R	PD exceedances as were included	are presented Table 14 of the QAI with this work order.	R.
	in Data and	lity or usability	offected? (Use the comment boy to	o overlain why or why not)
	IV. Data qua	anty of usability	anected? (Use the comment box to	b explain why of why not.)
			Comments	S:
On wer exc	a project wide re well below th eedances were	basis, all results ne 18 AAC Table considered negli	e qualified due to parent sample/fie e C project limits. The impact of the gible.	Id duplicate RPD exceedances the field duplicate precision
f. I	Decontaminatio	n or Equipment	Blank (If not used explain why).	
	🛛 Yes	□ No	NA (Please explain.)	Comments:
Equ Meth	ipment Blanks 10d 200.8.	were analyzed a	t appropriate frequencies for total	and dissolved metals by EPA
	i. All resul	ts less than PQL	?	
			<b>NA</b> ( <b>P</b> lagge explain )	Comments
		🖂 No		Comments.
Equ	uipment blank o	letections above	the LOD are presented in Table 5	of the QAR.
Equ	uipment blank o	letections above	the LOD are presented in Table 5	of the QAR.
Equ	uipment blank of ii. If above	∠ No detections above PQL, what sam	the LOD are presented in Table 5 ples are affected? Comments	of the QAR.

Affected samples are presented in Table 6 of the QAR.

iii. Data quality or usability affected? (Please explain.)

Comments:

Sample data <10X the level of the associated equipment blank detections are shown in Table 6. These results were qualified as "B" to indicate potential for similar contamination in the samples as that of the equipment blanks. All equipment blank contamination observed was <100X below the applicable regulatory limits (18 AAC Table C); therefore, the impact on usability of the associated sample data was considered negligible.

# Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.) a. Defined and appropriate?

No

a.	Defined and
	X Yes

NA (Please explain.)

Comments:

## **Laboratory Data Review Checklist**

Completed by:	Jennifer McLean				
Title:	Project Scientist Date: November 2, 2016				
CS Report Name:	Event 2 Sampling Kenai WellsReport Date:October 15, 2016GroundwaterOctober 15, 2016				
Consultant Firm: SLR International Corporation					
Laboratory Name	: SGS North America, Inc. Laboratory Report Number: 1165672				
ADEC File Numb	ber: NA ADEC RecKey Number: NA				
1. <u>Laboratory</u> a. Did an	ADEC CS approved laboratory receive and <u>perform</u> all of the submitted sample analyses? Yes No NA (Please explain.) Comments:				
b. If the s labora	samples were transferred to another "network" laboratory or sub-contracted to an alternate tory, was the laboratory performing the analyses ADEC CS approved? Yes No NA (Please explain.) Comments:				
2. <u>Chain of Cust</u> a. COC i	ody (COC) nformation completed, signed, and dated (including released/received by)? Yes No NA (Please explain.) Comments:				
b. Correc	et analyses requested? Yes No NA (Please explain.) Comments:				
3. <u>Laboratory Sa</u> a. Sampl	Imple Receipt Documentatione/cooler temperature documented and within range at receipt $(4^\circ \pm 2^\circ C)$ ?Yes $\square$ NoNo $\square$ NA (Please explain.)Comments:				
Table 1 provides a sample receipt summary. Six of the project coolers were received at the laboratory slightly below the 2°C criteria due to the inherent imprecision of achieving stable cooler temperatures within a narrow temperature range using frozen gel ice for cooling. No ice or evidence of freezing was noted for any of the samples within these coolers. Therefore, reported sample data are considered acceptable without qualification.					

			LNG Facilities Groundwater Qualit	Confidential y Sampling and Testing Report - Event 2 JSAL-FG-GRZZZ-00-002016-004 Rev. 0
b.	Sample preserva Volatile Chlorina	tion acceptable ated Solvents,	e – acidified waters, Methanol pro etc.)?	eserved VOC soil (GRO, BTEX,
Γ	X Yes		NA (Please explain.)	Comments:
c.	Sample condition	n documented	<ul> <li>broken, leaking (Methanol), ze</li> <li>☑ NA (Please explain.)</li> </ul>	ro headspace (VOC vials)? Comments:
N	No issues were not	ed.		
d.	If there were any containers/presers samples, etc.?	v discrepancies rvation, sample	, were they documented? For exa e temperature outside of acceptab	ample, incorrect sample le range, insufficient or missing
	Yes Yes	🗌 No	NA (Please explain.)	Comments:
-	Temperature was r	noted.		
e.	Data quality or u	sability affect	ed? (Please explain.) Comme	ents:
I	Regarding the temp	perature below	² °C, the sample receipt form did	l not note any evidence of
fr	reezing. Data were	considered no	ot impacted.	
<u>Case I</u> a.	Narrative Present and unde ∑ Yes	erstandable?	NA (Please explain.)	Comments:
b.	Discrepancies, en	rrors or QC fai	lures identified by the lab?	Comments:
c	The temperature exase narrative.	xceedance was	noted on the sample receipt form	n, but was not documented in the
c.	Were all correcti	ve actions doc	umented? NA (Please explain.)	Comments:
]	None were taken.			
d.	What is the effect	et on data quali	ity/usability according to the case Comme	e narrative? ents:
]	No impact.			
Samp	les Results			
a.	$\frac{\text{Correct analyses}}{\text{M} \text{ Yes}}$	performed/rep	oorted as requested on COC?	Comments:
rsion 2.7			Page 2 of 7	

4.

c. All soils reported on a dry weight basis?       □ Yes       No       NA (Please explain.)       Comments:         Only water samples were included in this work order.       .       .       .       .       .         d. Are the reported PQLs less than the Cleanup Level or the minimum required detection leve project?       .       .       .         .       .       .       .       .       .       .         e. Data quality or usability affected?       .       .       .       .         .       .       .       .       .       .       .         .       .       .       .       .       .       .       .         .       .       .       .       .       .       .       .       .         .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .       .<		Comments:	? DNA (Please explain.)	nolding times m	All applicable h	b.
Only water samples were included in this work order.         d. Are the reported PQLs less than the Cleanup Level or the minimum required detection lew project?         Yes       No       NA (Please explain.)       Comments:         e. Data quality or usability affected?       Comments:         with the comment of the comment o		Comments:	t basis? ⊠ NA (Please explain.)	ed on a dry wei	All soils reporte	c.
<ul> <li>d. Are the reported PQLs less than the Cleanup Level or the minimum required detection lew project?</li> <li>Yes □ No □ NA (Please explain.) Comments:</li> <li>e. Data quality or usability affected?</li> <li>comments:</li> <li>No impact.</li> </ul> C Samples <ul> <li>a. Method Blank</li> <li>i. One method blank reported per matrix, analysis and 20 samples?</li> <li>Yes □ No □ NA (Please explain.) Comments:</li> </ul> ii. All method blank results less than PQL? <ul> <li>Yes □ No □ NA (Please explain.) Comments:</li> </ul> iii. All method blank results less than PQL? <ul> <li>iii. All method blank results less than PQL?</li> <li>Yes □ No □ NA (Please explain.) Comments:</li> </ul> iii. If above PQL, what samples are affected? iii. If above PQL, what samples are affected? comments: Associated results that were less than, or equal to, five times the blank detection (ten times for common laboratory contaminants and metals) were considered affected, and were qualified ashown in Table 4. Results were greater than five times the blank detection or non-detection were applied on the provide the p			in this work order.	les were include	Only water sampl	0
☑ Yes       No       NA (Please explain.)       Comments:         e. Data quality or usability affected?       Comments:         No impact.       Comments:         Samples       a. Method Blank       Comments:         a. Method Blank       .       One method blank reported per matrix, analysis and 20 samples?         ☑ Yes       No       NA (Please explain.)       Comments:         ii. All method blank results less than PQL?	vel for t	um required detection leve	he Cleanup Level or the minir	d PQLs less tha	Are the reported project?	d.
e. Data quality or usability affected?         Comments:         No impact.         C Samples         a. Method Blank         i. One method blank reported per matrix, analysis and 20 samples?         Yes         No         Main         ii. All method blank results less than PQL?         Yes         No         NA (Please explain.)         Comments:         Analytes were not detected in any method blanks at or above the Limit of Detection (LOD), as noted in Table 4 of the QAR.         iii. If above PQL, what samples are affected?         Comments:         Associated results that were less than, or equal to, five times the blank detection (ten times fe common laboratory contaminants and metals) were considered affected, and were qualified as shown in Table 4. Results were considered unaffected and not qualified nor shown on Table when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times t		Comments:	NA (Please explain.)	No No	Yes Yes	
e. Data quality or usability affected?  Comments:  No impact.  Samples  a. Method Blank  i. One method blank reported per matrix, analysis and 20 samples?  Yes □ No □ NA (Please explain.) Comments:  ii. All method blank results less than PQL?  Yes ○ No □ NA (Please explain.) Comments:  Analytes were not detected in any method blanks at or above the Limit of Detection (LOD), as noted in Table 4 of the QAR.  iii. If above PQL, what samples are affected?  Comments:  Associated results that were less than, or equal to, five times the blank detection (ten times f common laboratory contaminants and metals) were considered affected, and were qualified a shown in Table 4. Results were considered unaffected and not qualified nor shown on Table when associated sample results were greater than five times the blank detection or non-detected						
No impact.         2. Samples         a. Method Blank         i. One method blank reported per matrix, analysis and 20 samples? $\boxtimes$ Yes $\boxtimes$ No $\square$ NA (Please explain.)         Comments:         ii. All method blank results less than PQL? $\square$ Yes $\square$ No $\square$ NA (Please explain.)         Comments:         Analytes were not detected in any method blanks at or above the Limit of Detection (LOD), as noted in Table 4 of the QAR.         iii. If above PQL, what samples are affected?         Comments:         Associated results that were less than, or equal to, five times the blank detection (ten times from the blank detection (ten times from the blank detection or non-detection shown in Table 4. Results were considered unaffected and not qualified nor shown on Table when associated sample results were greater than five times the blank detection or non-detection when associated sample results were greater than five times the blank detection or non-detection when associated sample results were greater than five times the blank detection or non-detection when associated sample results were greater than five times the blank detection or non-detection when associated sample results were greater than five times the blank detection or non-detection when associated sample results were greater than five times the blank detection or non-detection when associated sample results were greater than five times the blank detection or non-detection when associated sample results were greater than five times the blank detection or non-detectin the pre			?	usability affect	Data quality or	e.
No impact.         C Samples         a. Method Blank         i. One method blank reported per matrix, analysis and 20 samples?         Yes       No         No       NA (Please explain.)         Comments:         ii. All method blank results less than PQL?         Yes       No         Yes       No         NA (Please explain.)       Comments:         Analytes were not detected in any method blanks at or above the Limit of Detection (LOD), as noted in Table 4 of the QAR.         iii. If above PQL, what samples are affected?         Comments:         Associated results that were less than, or equal to, five times the blank detection (ten times fe common laboratory contaminants and metals) were considered affected, and were qualified as shown in Table 4. Results were considered unaffected and not qualified nor shown on Table 4. when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times the blank detection or non-detected when associated sample results were greater than five times the blank detection or non-detected wh		nts:	Comme			
2. Samples         a. Method Blank         i. One method blank reported per matrix, analysis and 20 samples?         □ Yes       □ No       □ NA (Please explain.)       Comments:         ii. All method blank results less than PQL?       □ Yes       □ No       □ NA (Please explain.)       Comments:         iii. All method blank results less than PQL?       □ Yes       ○ NA (Please explain.)       Comments:         Analytes were not detected in any method blanks at or above the Limit of Detection (LOD), as noted in Table 4 of the QAR.       iii. If above PQL, what samples are affected?         iii. If above PQL, what samples are affected?       Comments:         Associated results that were less than, or equal to, five times the blank detection (ten times for common laboratory contaminants and metals) were considered affected, and were qualified as shown in Table 4. Results were considered unaffected and not qualified nor shown on Table when associated sample results were greater than five times the blank detection or non-detected					No impact.	N
ii. All method blank results less than PQL?         Yes       No       NA (Please explain.)       Comments:         Analytes were not detected in any method blanks at or above the Limit of Detection (LOD), as noted in Table 4 of the QAR.       iii. If above PQL, what samples are affected?         iii. If above PQL, what samples are affected?       Comments:         Associated results that were less than, or equal to, five times the blank detection (ten times for common laboratory contaminants and metals) were considered affected, and were qualified as shown in Table 4. Results were considered unaffected and not qualified nor shown on Table when associated sample results were greater than five times the blank detection or non-detected in the plank detected in the plank detection or non-detected in the plank detected in the plank detection or non-detected in the plank detected in		Comments:	NA (Please explain.)		Yes	
Analytes were not detected in any method blanks at or above the Limit of Detection (LOD), as noted in Table 4 of the QAR. iii. If above PQL, what samples are affected? Comments: Associated results that were less than, or equal to, five times the blank detection (ten times for common laboratory contaminants and metals) were considered affected, and were qualified a shown in Table 4. Results were considered unaffected and not qualified nor shown on Table 4 when associated sample results were greater than five times the blank detection or non-detect		Comments:	less than PQL?	hod blank resul ⊠ No	ii. All metl	
iii. If above PQL, what samples are affected? Comments: Associated results that were less than, or equal to, five times the blank detection (ten times for common laboratory contaminants and metals) were considered affected, and were qualified a shown in Table 4. Results were considered unaffected and not qualified nor shown on Table 4 when associated sample results were greater than five times the blank detection or non-detected and not qualified to the blank detection.	, except	Limit of Detection (LOD), o	method blanks at or above the	ot detected in an 4 of the QAR.	Analytes were no	A as
Associated results that were less than, or equal to, five times the blank detection (ten times for common laboratory contaminants and metals) were considered affected, and were qualified a shown in Table 4. Results were considered unaffected and not qualified nor shown on Table when associated sample results were greater than five times the blank detection or non-detected and not qualified to the show of the sh		ents:	les are affected? Comme	e PQL, what sar	iii. If above	
	for as 4, ct.	lank detection (ten times for ected, and were qualified a lified nor shown on Table 4 ank detection or non-detect.	an, or equal to, five times the b nd metals) were considered aff sidered unaffected and not qua e greater than five times the bl	s that were less ry contaminants Results were c ample results w	Associated results common laborator hown in Table 4. when associated s	A co sh w!
$\square$ No $\square$ NA (Please explain.) Comments:	ied?	he data flags clearly defined Comments:	have data flags and if so, are t NA (Please explain.)	affected sample	iv. Do the a $\bowtie$ Yes	
Data were qualified as noted in Table 4 of the QAR.			ble 4 of the QAR.	ed as noted in T	Data were qualifi	D

6.

-			LNG Facilities Groundwa	ater Quality Samp USAL-F	Confidential ling and Testing Report - Event 2 G-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
v. D	Data qualit	y or usability	affected? (Please explai	in.) Comments:	
In all cases method per was not affe	s, affected formance ected.	results were v to observe sev	vell below applicable pr veral low level detection	oject cleanup is in the meth	e levels. It is not uncommon od blanks. Data usability
b. Laborato	ry Contro	l Sample/Dup	licate (LCS/LCSD)		
i. O	Organics – equired pe	One LCS/LC er AK methods	SD reported per matrix, s, LCS required per SW8	analysis and 846)	20 samples? (LCS/LCSD
X Y	es	No No	NA (Please explain	n.)	Comments:
ii. N sa	/letals/Ino amples?	rganics – one	LCS and one sample du	plicate report	ed per matrix, analysis and 20
□ Y	es	🖂 No	NA (Please explain	ı.)	Comments:
An LCS an	nd an MS/	MSD were an	alyzed with each batch.		
iii. A A A □ Y	Accuracy - And project AK102 759 Yes	All percent ro t specified DQ %-125%, AK1	ecoveries (%R) reported OS, if applicable. (AK 1 03 60%-120%; all other NA (Please explain	l and within n Petroleum me r analyses see n.)	nethod or laboratory limits? ethods: AK101 60%-120%, e the laboratory QC pages) Comments:
Table 8 of t	the QAR 1	presents CCV	recovery exceedances as	nd associated	data.
iv. P la L or Y	recision – aboratory CS/LCSE ther analy es	All relative p limits? And p D, MS/MSD, a vses see the lat	ercent differences (RPD roject specified DQOs, i nd or sample/sample du poratory QC pages)	) reported and f applicable. plicate. (AK ]	d less than method or RPD reported from Petroleum methods 20%; all Comments:
Eor Total S	Suspandad	Solida by Ma	thed SM21 2540D the	laboratory du	unligate appropriated with
batch STS5	226 had a	in RPD exceed	ling allowable limits.		iplicate associated with
v. If	f %R or R	PD is outside	of acceptable limits, wh	at samples ar Comments:	e affected?
No data in For Total S	this work Suspendec	order were af Solids, the or	fected by CCV exceedated and associated sample w	nces noted in as MW-91A-	Table 8. 0916.
vi. D VY	Oo the affe Tes	ected sample(s ⊠ No	) have data flags? If so,	are the data f	lags clearly defined? Comments:
For Total S sample, not	Suspendec associate	l Solids, becau d with this pro	se the LCS/LCSD estab bject was affected.	blished batch	precision, only the parent

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	vii. Data quality or usability affected? (Use comment box to explain.)
	All data was usable without qualification.
c.	Surrogates – Organics Only
	i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples? Yes No NA (Please explain.) Comments:
	ii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other analyses see the laboratory report pages)
	$\square \text{ Yes } \square \text{ No } \square \text{ NA (Please explain.)} \qquad \text{Comments:}$
	iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data
	$\Box Yes \Box No \Box NA (Please explain.) Comments:$

iv. Data quality or usability affected? (Use the comment box to explain.)

Comments:

Comments:

No impact.

d. Trip blank – Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil

NA (Please explain.)

i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

Yes Yes □ No

> ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below)

NA (Please explain.) X Yes No Comments:

iii. All results less than POL? Xes Yes No NA (Please explain.) Comments: iv. If above PQL, what samples are affected?

Comments:

Not applicable.
v. Data quality or usability affected? (Please explain.) Comments:
No impact.
e. Field Duplicate
i. One field duplicate submitted per matrix, analysis and 10 project samples? Yes No NA (Please explain.) Comments:
The field duplicate sample frequency is presented below in Table 12 of the QAR. For the purposes of field duplicate count, Event A samples collected in August were combined with this September sampling event. This project satisfied the required frequency of one per 10 samples or less per matrix and analyte. No field duplicates were associated with this work order.
ii. Submitted blind to lab? ☐ Yes ☐ No ⊠ NA (Please explain.) Comments:
Parent Sample and Field Duplicate Pairs are presented in Table 13 of the QAR. No field duplicates were associated with this work order
<ul><li>iii. Precision – All relative percent differences (RPD) less than specified DQOs?</li><li>(Recommended: 30% water, 50% soil)</li></ul>
RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \ge 100$
Where $R_1 = Sample$ Concentration $R_2 = Field$ Duplicate Concentration $\Box$ Yes $\Box$ No $\Box$ NA (Please explain.)Comments:
Field Duplicate RPD exceedances are presented Table 14 of the QAR. No field duplicates were associated with this work order
iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

Comments:

On a project wide basis, all results qualified due to parent sample/field duplicate RPD exceedances were well below the 18 AAC Table C project limits. The impact of the field duplicate precision exceedances were considered negligible.

f D			LNG Facilities Groundwater Quality S US	Confidential Sampling and Testing Report - Event 2 AL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16	
I. D		n or Equipme	ent Blank (If not used explain why). $\Box$ NA (D		
	X Yes	No	NA (Please explain.)	Comments:	
Equi Meth	pment Blanks od 200.8.	were analyze	d at appropriate frequencies for total	and dissolved metals by EPA	
	i. All resul	lts less than P	QL?		
	Yes	🔀 No	NA (Please explain.)	Comments:	
Equ	ipment blank	detections abo	ove the LOD are presented in Table 5	5 of the QAR.	
	ii. If above	PQL, what sa	amples are affected? Commen	ts:	
Aff	ected samples	are presented	in Table 6 of the QAR.		
	iii. Data qua	ality or usabil	ity affected? (Please explain.)		
			Commen	ts:	
San Thes that appl sam	Sample data <10X the level of the associated equipment blank detections are shown in Table 6. These results were qualified as "B" to indicate potential for similar contamination in the samples as that of the equipment blanks. All equipment blank contamination observed was <100X below the applicable regulatory limits (18 AAC Table C); therefore, the impact on usability of the associated sample data was considered negligible.				
<u>Other Da</u> a D	ta Flags/Quali	fiers (ACOE,	AFCEE, Lab Specific, etc.)		
u. D	Yes		NA (Please explain.)	Comments:	

7.

## **Laboratory Data Review Checklist**

Completed by:	Jennifer McLean	
Title:	Project Scientist	Date: November 2, 2016
CS Report Name: Consultant	Event 2 Sampling Kenai Wells Groundwater	Report Date: October 5, 2016
Firm:	SLR International Corporation	
Laboratory Name	SGS North America, Inc.	Laboratory Report Number: 1165682
ADEC File Numb	er: NA ADE	EC RecKey Number: NA
1. <u>Laboratory</u> a. Did an	ADEC CS approved laboratory receive a Yes No NA (Please	and <u>perform</u> all of the submitted sample analyses? are explain.) Comments:
b. If the s laborat	amples were transferred to another "netw tory, was the laboratory performing the ar Yes No X NA (Please	work" laboratory or sub-contracted to an alternate nalyses ADEC CS approved? ae explain.) Comments:
2. <u>Chain of Cust</u> a. COC i	ody (COC) nformation completed, signed, and dated Yes No NA (Please	(including released/received by)? we explain.) Comments:
b. Correc	t analyses requested? Yes No NA (Please	e explain.) Comments:
3. <u>Laboratory Sa</u> a. Sample	mple Receipt Documentation e/cooler temperature documented and wit Yes No NA (Please	thin range at receipt $(4^\circ \pm 2^\circ C)$ ? comments:
Table 1 of at the lab cooler ten evidence sample da	of the QAR provides a sample receipt sum oratory slightly below the 2°C criteria du mperatures within a narrow temperature r of freezing was noted for any of the samp ata are considered acceptable without qua	mmary. Six of the project coolers were received to the inherent imprecision of achieving stable range using frozen gel ice for cooling. No ice or ples within these coolers. Therefore, reported alification.

				LNG Facilities Groundwater Quality U	Confidential Sampling and Testing Report - Event 2 SAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16	
	b.	Sample preserv	ation acceptable	$e^{-acidified}$ waters, Methanol pre	eserved VOC soil (GRO, BTEX,	
	_	Yes		NA (Please explain.)	Comments:	
	c.	Sample condition	on documented	l – broken, leaking (Methanol), zer ⊠ NA (Please explain.)	o headspace (VOC vials)? Comments:	
	N	lo issues were no	oted.			
	d.	If there were an containers/press samples, etc.?	ny discrepancie ervation, samp	s, were they documented? For exalle temperature outside of acceptable $\Box$ NA (Places curlein)	mple, incorrect sample le range, insufficient or missing	
				I INA (Please explain.)	Comments:	
		Temperature was	noted.			
	e.	Data quality or	usability affect	ted? (Please explain.) Comme	Comments:	
	I C	Regarding temper onsidered not imp	rature, the samp pacted.	ple receipt form did not note any e	vidence of freezing. Data were	
4. C	lase I	Narrative				
	a.	Present and und Yes	lerstandable?	NA (Please explain.)	Comments:	
	b.	Discrepancies,	errors or QC fa	ilures identified by the lab?	Comments:	
	h, but was not documented in the					
	Comments:					
	]	None were taken.				
	d.	What is the effe	ect on data qua	lity/usability according to the case Comme	narrative? nts:	
	]	No impact.				

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

## 5. <u>Samples Results</u>

	a.	Correct analys Yes	es performed/r	eported as requested on COC?	Comments:			
	b.	All applicable	holding times	met?	Comments:			
	c.	All soils repor	ted on a dry we	eight basis? NA (Please explain.)	Comments:			
	(	Only water samp	ples were inclu	ded in this work order.				
	d.	Are the reported project?	ed PQLs less th	an the Cleanup Level or the minimu	um required detection level for the			
		Yes Yes	No No	NA (Please explain.)	Comments:			
	e. Data quality or usability affected?							
	No impact.							
6. <u>Q(</u>	<u>C Sa</u> a.	amples Method Blank i. One me ⊠ Yes	ethod blank rep	oorted per matrix, analysis and 20 sa	mples? Comments:			
	<u> </u>	ii. All me ⊠ Yes	thod blank resu	Ilts less than PQL?	Comments:			
		iii. If abov	e PQL, what sa	amples are affected?	its:			
	1	iii. If abov Not applicable	e PQL, what sa	amples are affected? Commen	its:			
	1	iii. If abov Not applicable iv. Do the □ Yes	re PQL, what sa affected sampl	amples are affected? Commen e(s) have data flags and if so, are the NA (Please explain.)	e data flags clearly defined? Comments:			

v.	Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16 Comments:
No impa	ct.
b. Labora	atory Control Sample/Duplicate (LCS/LCSD)
i.	Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846) Yes No NA (Please explain.) Comments:
ii.	Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples? Yes 🛛 No 🖾 NA (Please explain.) Comments:
No inorg	anics were associated with this work order.
iii.	Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages) Yes No NA (Please explain.) Comments:
iv.	Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages) Yes No NA (Please explain.) Comments:
v.	If %R or RPD is outside of acceptable limits, what samples are affected? Comments:
Not app	icable.
vi.	Do the affected sample(s) have data flags? If so, are the data flags clearly defined? Yes No NA (Please explain.) Comments:
vii	. Data quality or usability affected? (Use comment box to explain.)
No impa	ct.

			LNG Facilities Groundwater Quality L	/ Sampling and Testing Report - Event 2 ISAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
c. S	urrogates – O	rganics Only		
	i. Are sur	rogate recoverie	es reported for organic analyses – 🖂 NA (Please explain.)	field, QC and laboratory samples? Comments:
On	ly SM9222D	was evaluated f	or this work order.	
	ii. Accura And pro analyse ☐ Yes	cy – All percent oject specified I s see the labora	t recoveries (%R) reported and wir DQOs, if applicable. (AK Petroleu tory report pages) NA (Please explain.)	thin method or laboratory limits? m methods 50-150 %R; all other Comments:
	iii. Do the flags cl	sample results v early_defined?	with failed surrogate recoveries ha	ve data flags? If so, are the data
	<b>Yes</b>	∐ No	🔀 NA (Please explain.)	Comments:
No	iv. Data qu impact.	ality or usabilit	y affected? (Use the comment boy Comme	( to explain.) nts:
l. T <u>S</u>	rip blank – V <u>oil</u>	olatile analyses	only (GRO, BTEX, Volatile Chlo	prinated Solvents, etc.): Water and
	i. One trij (If not,	p blank reported enter explanatio	l per matrix, analysis and for each on below.)	cooler containing volatile samples
	Yes	🗌 No	🔀 NA (Please explain.)	Comments:
	ii. Is the c (If not,	ooler used to tra a comment exp	ansport the trip blank and VOA sa laining why must be entered below	mples clearly indicated on the COO
	Yes	🗌 No	🔀 NA (Please explain.)	Comments:
	iii. All resu	ults less than PQ	)L? MA (Please explain.)	Comments:

Confidential

iv. If above PQL, what samples are affected?

Comments:

Not applicable.
v. Data quality or usability affected? (Please explain.) Comments:
No impact.
e. Field Duplicate
i. One field duplicate submitted per matrix, analysis and 10 project samples? Yes No NA (Please explain.) Comments:
The field duplicate sample frequency is presented below in Table 12 of the QAR. For the purposes of field duplicate count, Event A samples collected in August were combined with this September sampling event. This project satisfied the required frequency of one per 10 samples or less per matrix and analyte. No field duplicates were included in this work order.
ii. Submitted blind to lab? ☐ Yes ☐ No ⊠ NA (Please explain.) Comments:
Parent Sample and Field Duplicate Pairs are presented in Table 13 of the QAR. No field duplicates were included in this work order.
<ul><li>iii. Precision – All relative percent differences (RPD) less than specified DQOs?</li><li>(Recommended: 30% water, 50% soil)</li></ul>
RPD (%) = Absolute value of: $\frac{(R_1-R_2)}{((R_1+R_2)/2)} \ge 100$
Where $R_1$ = Sample Concentration $R_2$ = Field Duplicate ConcentrationYesNoNA (Please explain.)Comments:
Field Duplicate RPD exceedances are presented Table 14 of the QAR. No field duplicates were included in this work order.
iv. Data quality or usability affected? (Use the comment box to explain why or why not.)

No impact.

f. I	Decontamination	on or Equipme	LNG Facilities Groundwater Quality US nt Blank (If not used explain why).	Sampling and Testing Report - Event 2 SAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16					
	Yes	No	⊠ NA (Please explain.)	Comments:					
i. All results less than PQL?									
	Yes	🗌 No	NA (Please explain.)	Comments:					
ii. If above PQL, what samples are affected? Comments:									
No	ot applicable.								
No	ot applicable. iii. Data qu	ality or usabili	ty affected? (Please explain.)						
No	ot applicable. iii. Data qu	ality or usabili	ity affected? (Please explain.) Commer	nts:					
No	ot applicable. iii. Data qu o impact.	ality or usabili	ity affected? (Please explain.) Commer	its:					
No No ner D a. I	ot applicable. iii. Data qu impact. ata Flags/Qual Defined and ap X Yes	ifiers (ACOE, propriate?	ity affected? (Please explain.) Commer <u>AFCEE, Lab Specific, etc.)</u> NA (Please explain.)	nts: Comments:					

7.

## Report

## LABORATORY DATA QUALITY ASSURANCE REVIEW

## GROUNDWATER MONITORING EVENT 2: SEPTEMEBR 2016 TEST AMERICA LABORATORY REPORTS

## NIKISKI, ALASKA ALASKA LNG

November 2016

Prepared by: Jason Gray Reviewed by: Wendy Hansen

SLR International Corporation 2700 Gambell Street, Suite 200 Anchorage, AK 99503

SLR Project Number 105.00148.16001

## ACRONYMS AND ABBREVIATIONS

%	percent
123-TCP	1,2,3-Trichloropropane
AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
°C	degrees Celsius
CCV	continuing calibration verification
COC	chain of custody
DL	detection limit
EDB	ethylene dibromide (1,2-Dibromoethane)
EDD	electronic data deliverable
EPA	Environmental Protection Agency
Fugro	Fugro Geoservices Inc
LCL	lower control limit
LCS	laboratory control sample
LCSD	laboratory control sample duplicate
LODs	limit of detection(s)
LOQ	limit of quantitation
mg/L	milligrams per liter
MB	Method Blank
MS	matrix spike
MSD	matrix spike duplicate
NELAP	National Environmental Laboratory Accreditation Program
PARCCS	precision, accuracy, representativeness, comparability, completeness and
	sensitivity
QA	quality assurance
QAR	quality assurance review
QC	quality control
RPD	relative percent difference
SDG	sample delivery group
SLR	SLR International Corporation
SVOCs	semi-volatile organic compounds
TAL	Test America Laboratories
UCL	upper control limit
VOCs	volatile organic compounds

## Introduction

This report summarizes a review of analytical data for groundwater samples collected on September 12, 2016 by Fugro Geoservices Inc. (Fugro) and by SLR International Corporation (SLR) between August 16, 2016 and August 22, 2016 at Nikiski, Alaska. Test America Laboratories (TAL) provided analytical support to the project with initial sample receipt and cooler shipping via TAL Anchorage receiving office, and the final sample receipt and analysis performed at TAL Tacoma, WA and TA Denver, CO. TAL Tacoma laboratory maintains current Alaska Department of Environmental Conservation (ADEC) Contaminated Sites approval number (UST-022) for SW8260C and 8270D analytical methods of interest. TAL Denver laboratory maintains current ADEC Contaminated Sites approval number (UST-030) however; the SW8011 method is not included in the ADEC approvals for this or any other laboratory. TAL Denver is accredited by the National Environmental Laboratory Accreditation Program (NELAP) for the SW8011 analysis. Table 1 provides a summary of work orders, sample receipt information, analytical methods, and analytes.

Laboratory final reports were provided as Level II deliverables, and included documentation of each delivery group chain-of-custody (COC) and sample receipt condition. Microsoft Excel spreadsheet electronic data deliverables (EDDs) for each report were also provided. The PDF laboratory reports and the EDDs are provided electronically in Appendix E.

	000	Date Received at	Cooler Receipt Cooler Receipt Temperature Temperature		Sample Count per Analysis Method		
SDG	ID #	Final Destination Lab	Initial Destination (TAL Anchorage)	Final Destination (TAL Tacoma or Denver)	SW8011 EDB and 123-TCP (Denver)	SW8260C VOCs (Tacoma)	SW8270D SVOCs (Tacoma)
		9/14/2016	2.2 °C	0.3 °C		C	E
580-62531	<b>1</b> ¹	9/14/2016	3.0 °C	0.6 °C		0	J
		9/14/2016	3.0 °C	5.5°C	6		
	5	9/20/2016	1.0 °C	2.6	10	10	5
580-62627	6	9/20/2016	2.3 °C	1.2 °C			4
	7	9/21/2016	3.1 °C	0.4 °C	10		
F90 62712	10	9/22/2016	3.1 °C	0.8°C /1.9°C		7	2
560-62712	11 ²	9/22/2016	3.7 °C	0.8°C /1.9°C			4
F80 627F0	19	9/26/2016	Direct Shipment ³	1.9°C		8	3
560-02759	22	9/26/2016	Direct Shipment ³	3.0 °C			4
280-88640	11 ²	9/27/2016	Direct Shipment ³	0.6 °C	14		

#### Table 1 Summary of Work Orders, Sample Receipt, and Analytical Methods

#### Notes:

1 – A single COC listing the contents of two coolers was prepared; association of individual samples to specific coolers was not specified or recorded by laboratory.

2 – COC ID # 11 was mistakenly assigned to two separate coolers on different dates, these are different COCs and coolers.

3- Samples shipped by SLR directly to final destination laboratory, no applicable Anchorage receipt temperature.

Acronyms (table 1): °C – degrees Celsius EDB - ethylene dibromide ID # - Identification Number 123-TCP - 1,2,3-trichloropropane SDG – Sample Delivery Group SVOCs – semi-volatile organic compounds VOCs – volatile organic compounds

## Quality Assurance Program

A quality assurance (QA) program was followed for this project that addressed project administration, sampling, quality control, and data review. Fugro and SLR adhered to required and established sampling and COC protocols, with exceptions noted in this QAR. SGS laboratory maintains an internal quality assurance program and standard operating procedures.

The analytical data was reviewed for consistency with any project specific requirements (Method Statement, April 2016), *ADEC Technical Memorandum, Environmental Laboratory Data and Quality Assurance* (ADEC 2009a) requirements, analytical method criteria and laboratory criteria. An ADEC Laboratory Data Review Checklist was completed for each SDG, and is included as Attachment 1 of this Quality Assurance Review (QAR). A review for any anomalies to the project requirements for precision, accuracy, representativeness, comparability, completeness and sensitivity (PARCCS) are noted in this QAR, and any data qualifications discussed.

The data review included the following, as applicable:

- Reviewing COC records for completeness including signatures, and dates;
- Identifying any sample receipt or preservation anomalies that could impact data quality;
- Verifying that quality control (QC) blanks (trip blanks) were properly prepared, identified, and analyzed;
- Evaluating whether laboratory reporting limits met project sensitivity goals. To complete this evaluation, undetected sample result limits of detection (LODs) were compared to applicable cleanup levels from section 18 Alaska Administrative Code (AAC) 75.345, Table C, groundwater cleanup levels (ADEC, May 8, 2016);
- Reviewing case narratives for any discussion of Continuing Calibration Verification (CCV) recoveries outside of acceptance limits. CCV performance was not otherwise presented in the laboratory report or in the electronic data deliverable and was reviewed only from the case narratives.
- Reviewing case narratives for any discussion of any internal standard recoveries outside of acceptance limits. Internal standard performance was not otherwise presented in the laboratory report or in the electronic data deliverable and was reviewed only from the case narratives.
- Verifying that surrogate compound recoveries were within acceptance limits;

- Verifying that Laboratory Control Samples (LCS), Laboratory Control Sample Duplicates (LCSD), Matrix Spike (MS), and Matrix Spike Duplicate (MSD) recoveries were within acceptance limits;
- Evaluating the result relative percent difference (RPD) between primary and duplicate field samples, LCS/LCSD, MS/MSD, and laboratory duplicates; and
- Providing an overall assessment of laboratory data quality and qualifying sample results as determined necessary.

#### Data Qualifications

As part of the quality assurance review, qualifiers (i.e. flags) were applied to data as determined necessary based on specified criteria, or professional judgement. In all cases, the basis for qualification and the applied data flag are discussed in this Quality Assurance Review (QAR). Table 2 provides a list of potential qualifiers. These data flags are appended to the data as appropriate.

Qualifier (Flag)	Definition
Q	One or more laboratory quality control criteria (e.g., LCS recovery, surrogate spike recovery) failed. Where applicable, an "H", "L", or "N" was appended to indicate positive, negative, or unknown bias, respectively.
J	The analyte was positively identified but the result was outside the calibration range, between the limit of quantitation (LOQ) and the detection limit (DL); the quantitation was an estimate.
Μ	The concentration was an estimate due to a sample matrix quality control failure. Where applicable, an "H", "L", or "N" was appended to indicate positive, negative, or unknown bias, respectively.
В	Blank contamination: The analyte was positively identified in the blank (e.g., trip blank; method blank; equipment blank; etc.), associated with the sample and the concentration reported for the sample was less than five times that of the blank (ten times for metals and common laboratory contaminants methylene chloride and acetone).
Р	Sample preservation requirements were not satisfied.
R	Data rejected for use

Table 2	Data Qualifiers

A discussion of the project data quality relative to PARCCS goals and summary of any anomalies or failures requiring data qualifiers follows.

## **Data Validation**

#### Data Packages

The data packages were checked for transcription errors, omissions, or other anomalies. No issues were noted with regards to the data packages, except as noted below.

#### Sample Receipt

The sample receipt documentation was checked for anomalies.

The following issues were noted with regards to the receipt of the samples.

#### Work order 580-62531

• The initial receipt of samples and cooler temperatures at TAL-Anchorage and the final receipt of those sample fractions for SW8011 analysis at TAL-Denver are not documented within the report case narrative. However; forms and COCs documenting the initial TAL-Anchorage sample receipt and final sample receipt conditions for TAL-Denver as acceptable are included in the data package. The case narrative documents a receipt exception because sampler initials are not specified on the COC. Sampler initials are not a requirement for ADEC work and no column is assigned for this information on the TAL provided COC forms used for the project. Sample custody signatures on the COC were in order; the data integrity is not compromised.

#### Work order 580-62627

- The initial receipt of samples and cooler temperatures at TAL-Anchorage is not documented within the case narrative or cooler receipt forms however this cooler receipt and transfer is documented on the COCs. A discrepancy was noted by TAL between the sample time on the COC and the containers for sample MW-50A-0916, a revision to the COC was documented and provided by SLR correcting the sample time on the original COC to match the field records and containers.
- The cooler containing the sample fractions for SW8011 analysis sent to TAL-Denver arrived at temperature of 0.4°C and five of the sample sets included at least one broken container (all locations were sampled in triplicate vial sets), including all three of the vials of the set for sample MW-74A-0916. It is likely that the cooler either partially froze during shipping or else the cooler was dropped during shipment. The requested SW8011 analysis were successfully completed from the remaining intact vials for all locations except MW-74A-0916 for which no sample containers were received intact such that the sample was unable to be analyzed. No notification from TAL identifying the broken samples was provided to SLR prior to demobilization from the project site; therefore the well was unable to be re-sampled for SW8011 analysis. As a result, the low detection limit results for the two SW8011 analytes EDB and 123-TCP were not available. It is not possible to determine for this sample location whether these two analytes were above cleanup levels. However, these two analytes are included on the SW8260C analyte list with detection limits that are above the applicable cleanup levels.
- The case narrative documents a receipt exception because sampler initials are not specified on the COC. Sampler initial are not a requirement for ADEC work and no column is assigned for this information on the TAL provided COC forms used for the project. With exception to the broken SW8011 samples for MW-74A-0916, sample receipt conditions were acceptable and all signatures on the COC are present documenting cooler custody, no reported data is compromised due to receipt or custody issues.

#### Work order 580-62712

 The initial receipt of samples and cooler temperatures at TAL-Anchorage is not documented within the report case narrative or cooler receipt forms; however, this cooler transfer is documented on the COCs. This report contained the samples from two coolers which were each packed with a COC specific to the individual cooler. TAL recorded two receipt temperatures but did not associate the temperatures to the specific cooler or COC number. Both of the cooler temperatures were acceptable and therefore, no sample results were compromised by ambiguous cooler temperature association.

 The case narrative documents a receipt exception because sampler initials are not specified on the COC. Including the sampler initial is not a requirement for ADEC work and no column is assigned for this information on the TAL provided COC forms used for the project. All sample receipt conditions were acceptable and all signatures on the COC are present documenting the cooler custody, no sample data is compromised due to receipt or custody issues.

#### Work order 580-62759

• All sample receipt temperatures, sample conditions and custody documentation was in order, no sample data is compromised due to receipt or custody issues.

#### Work order 280-88640

- All sample receipt temperatures, sample conditions and custody documentation was in order, no sample data is compromised due to receipt or custody issues.
- A discrepancy was noted by TAL between the sample time on the COC and the containers for samples APT-9-0916 and APT-3-0916. A revision to the COC was documented and provided by SLR correcting the sample time on the original COC to match the field records and containers.
- The cooler containing the sample fractions for SW8011 analysis sent to TAL-Denver was received at 0.6°C and two of the three vials for sample OW-3-0916 were received broken. It is likely that the cooler froze during shipping and broke several sample containers or else the cooler was handled roughly during shipment. The requested SW8011 analysis for OW-3-0916 was successfully completed from the remaining intact vial of the triplicate sample set. All sample receipt conditions were otherwise acceptable and all signatures on the COC are present documenting the cooler custody. No sample data is compromised due to receipt or custody issues.

#### Sample Preservation (Chemical and Temperature)

Cooler receipt temperatures are listed in Table 1. ADEC specifies a temperature preservation range of  $4\pm 2$  °C. Temperatures above the required range have the potential to degrade the sample and introduce bias to the reported sample results. In no instances for this project were coolers received at the lab with a temperature blank measurement above the required range.

Cooler temperatures below the 2°C lower limit could result in freezing of the sample with the potential for damage to the integrity of the sample container. However, there is no concern that unfrozen samples would otherwise be impacted if received below 2°C. In cases where the cooler receipt temperatures were below 2°C, the lab practice is to inspect the sample containers and document if any ice is present in the samples or if there are any other indication of broken or compromised containers. Provided no sample integrity concerns were identified, samples received slightly below the 2°C temperature limit were considered acceptable and analyzed with no qualification of the results applied due to cooler receipt temperature. The cooler temperatures and any anomalous sample conditions are documented in the laboratory data package case narrative and on the sample receipt form. In no instances were sample containers identified as being frozen at the time of laboratory receipt.

Samples were appropriately preserved upon receipt by TAL laboratory, except as noted below.

#### Work order 580-62531

The report case narrative notes that the SW8011 samples for this delivery were not preserved with sodium thiosulfate. TAL standard operating procedure (SOP) for the SW8011 analysis recommends that samples be preserved with sodium thiosulfate as a dechlorinating agent in order to scavenge residual chlorine in the case of chlorine treated potable water systems. The SW8011 samples of this work order were collected in available unpreserved VOC vials because sufficient time was not available to procure the recommended sodium thiosulfate preserved vials. The Environmental Protection Agency (EPA) SW8011 analytical method does not require sodium thiosulfate preservative for non-chlorinated water samples. The samples of this delivery were collected from non-chlorinated groundwater wells and therefore, the results are not compromised due the lack of sodium thiosulfate preservation. Subsequent SW8011 samples were all collected using lab provided sodium thiosulfate vials.

#### Holding Times

All analyses were completed within analytical method required holding time with the following noted exceptions;

#### Work order 580-62531

 For SW8270D SVOC of Prep batch 580-228461, samples TPW-1-0916, TPW-2-0916, TPW-5-0916, and PQ-W1-0916 were initially extracted and analyzed within method holding time. These samples were then re-extracted eight days past the 7 day holding time due to low recovery for 8 analytes in the batch LCS and LCSD. Results from the reextracted analysis (performed beyond holding time) were used to confirm the initial sample results. Only the initial extraction results performed within holding time should be considered as the valid results for these samples. The results for these samples were qualified for LCS and LCSD recovery as noted in Attachment 2. Further details of the LCS/LCSD qualification are discussed on page 9.

#### Laboratory Method Blanks

Laboratory method blanks were analyzed at the appropriate frequencies. No analytes were detected in any associated method blank samples at or above the Detection Limit (DL), except as noted in Table 3 (following page). There were no associated field sample results reported from these method blank batches which contained the same contaminate analytes that could have therefore been subject to method blank contamination. No field sample results were qualified and no data usability was affected for method blank contamination.

#### Trip Blanks

Trip blanks were included in each cooler containing SW8260C VOCs and SW8011 low level EDB and 123-TCP samples and analyzed at appropriate frequencies. No analytes were detected in the trip blank samples at or above the analyte DL.

Work Order	Sample Type	Lab ID	Method	Analyte	Result (mg/L)
		MB 580-228351/1-A		Benzyl alcohol	0.000585
580-62759	MB	MB 580-228461/1-A	8270D	Butyl benzyl phthalate Diethyl phthalate	0.000211
					0.000255
				Di-n-butyl phthalate	0.000136

#### Table 3 Method Blank Detections

#### Acronyms:

MB – Method Blank

mg/L – milligrams per liter.

#### **Reporting Limits**

The LODs of undetected samples were compared to applicable cleanup levels for the site. For the groundwater samples of this project, LODs were compared to 18 AAC 75.345, Table C, groundwater cleanup levels (ADEC, May 8, 2016). All results of non-detected analytes had LODs at or below the applicable cleanup levels, except for those analytes noted in Table 4 which shows those analytes which had LODs above the applicable groundwater cleanup levels.

Table 4 LODs for Undetected Sample Results Exceeding Clea	eanup Limits
-----------------------------------------------------------	--------------

Analytical Method	Compound (mg/L)	Cleanup Criteria: 18 AAC 75 Table C ¹	Typical Sample Reporting Limit (LOD)	Number Samples LOD Above Limit / Number of Samples
SW8260C VOC	1,2,3-Trichloropropane	0.00012	[0.002]	22/22
3002000 000	1,2-Dibromoethane	0.00005	[0.001]	22/22
	3,3'-Dichlorobenzidine	0.0019	[0.002]	13/26
3002700 3000	N-Nitrosodi-n-propylamine	0.00012	[0.004]	26/26

#### Notes:

1 - This level corresponds to ADEC groundwater cleanup levels of 18 AAC 75.345 Table C (May 2016).

The volatile chlorinated analytes 1,2,3-TCP and EDB were above the cleanup criteria in all 22 sample results obtained from the SW8260C analysis. These same two analytes were additionally analyzed via method SW8011 which is more sensitive for detecting these compounds and produced sample results with LODs that were below the cleanup levels. As previously discussed in the sample receipt section, the containers for SW8011 analysis of sample MW-74A-0916 were broken in shipment and this one sample was unable to be analyzed for the low level 1,2,3-TCP and EDB method SW8011. These two analytes were not detected by the SW8260C analysis of MW-74A-0916 nor were they detected in the shallower depth well MW-74B-0916 at this same location or in any of the other project groundwater sample. While the SW8260C results for sample MW-74A-0916 do not definitively rule out contamination for

1,2,3-TCP and EDB down to the cleanup level in this well, these is no indication that these analytes are a concern anywhere else in the project area.

The SW8270D SVOC compound 3,3'-Dichlorobenzidine achieved LODs for undetected results in 13 of the 26 samples which were slightly above the cleanup level. The LOD can vary slightly between individual samples due to the exact final volume of sample collected and extracted. In those cases where a full 1L of water sample matrix was not extracted, the LOD were at most 5% above the cleanup level. The SW8270D SVOC compound N-Nitrosodi-n-propylamine had detection limits in all 26 of the 26 undetected samples analyzed which were 3X above the cleanup level. While it is laboratory standard practice to report undetected samples at the LOD, any hits for either compounds 3,3'-Dichlorobenzidine or N-Nitrosodi-n-propylamine detected down to the lower DL of 0.0001mg/L would have been reported as estimate "J flag" values. None of the 26 samples analyzed had estimate values for 3,3'-Dichlorobenzidine or N-Nitrosodi-n-propylamine reported which would have exceeded the cleanup level. The reported analytical data for these analytes is compromised for the purpose of determining with complete certainty whether the analytes were present in the affected samples below the LOD but above the regulatory levels.

#### **Continuous Calibration Verification (CCV)**

CCV numeric data were not presented or included in the EDDs or data packages, CCV performance was assessed from reviewing the case narratives for any discussion concerning CCV performance. The case narratives discuss that several instances of sporadic CCV failures occurred for the compounds Hexachlorocyclopentadiene, 2-Hexanone, 2-Butanone and 4-Methyl-2-pentanone in which the CCV recovery was high indicating a potential for similar high bias for these compounds if detected in the associated field sample results. In each case, the associated field samples were undetected for these compounds such that no values were reported which could be bias high. Therefore, no data were qualified.

The case narratives for report 580-62627 included discussion of a sporadic low recovery CCV failure for SVOC compound 3,3'-Dichlorobenzidine. The associated sample results have been qualified as QL to indicate a potential low bias for these results due to QC sample failure; sample data were qualified as shown in the Table 5. The associated LCS/LCSD 3,3'-Dichlorobenzidine recoveries and RPDs were within acceptable limits, the data was considered minimally impacted however since the LOD are potentially bias low, the data usability is compromised for the purpose of determining with complete certainty if 3,3'-Dichlorobenzidine is present in the affected samples above the regulatory levels.

	Analysis			Sample		
Field Sample ID	Method	Analysis Date	Analyte	Result	Flag	
MW-27B-0916		09/26/2016 17:17	3,3'-Dichlorobenzidine	ND [0.0020]	QL	
MW-50A-0916		09/26/2016 18:31	3,3'-Dichlorobenzidine	ND [0.0019]	QL	
MW-50B-0916		09/26/2016 18:56	3,3'-Dichlorobenzidine	ND [0.0020]	QL	
MW-74A-0916	8270D	09/26/2016 17:42	3,3'-Dichlorobenzidine	ND [0.0019]	QL	
MW-74B-0916		09/26/2016 18:06	3,3'-Dichlorobenzidine	ND [0.0022]	QL	
MW-82A-0916		09/26/2016 16:27	3,3'-Dichlorobenzidine	ND [0.0019]	QL	
MW-82B-0916		09/26/2016 16:52	3,3'-Dichlorobenzidine	ND [0.0019]	QL	
MW-87B-0916		09/26/2016 19:21	3,3'-Dichlorobenzidine	ND [0.0019]	QL	
MW-87Z-0916		09/26/2016 19:46	3,3'-Dichlorobenzidine	ND [0.0019]	QL	

#### Table 5 CCV Failures and Affected Data

#### Internal Standard Results

No internal standards were noted in the case narratives as performing outside of acceptance limits. Internal standard performance criteria were considered met.

#### **Surrogate Recovery Results**

Surrogate analysis was performed at the required frequencies. All surrogate recoveries were within analytical method and TAL percent recovery acceptance limits, except as noted in report J88640; Method SW8011 surrogate recovery of 1,2-Dibromopropane for the trip blank sample TB-8-0916 was above the upper control limit. The lab suspected that the sample was inadvertently extracted with 1 mL of hexane instead of 2 mL, effectively doubling all concentrations and introducing a potential high bias to all results. This trip blank sample did not contain any target analytes; therefore a re-extraction and/or re-analysis was not performed and no sample results are affected.

#### Laboratory Control Samples and Laboratory Control Duplicate Samples

LCS and LCSDs were analyzed at the appropriate frequencies. LCS and LCSD recoveries and RPDs were within acceptable limits except as presented and qualified in Attachment 2. No detected field sample analyte results were associated with LCS or LCSD outliers that required flagging of the field sample results. The DL for analytes that were un-detected in the field samples were not qualified on the basis of high recovery bias if observed in the associated LCS or LCSD samples as the bias conservatively ensures that the undetected sample result was below the reported DL.

All SW8011 and SW8260C LCS and LCSD samples had all analytes recovered above the lower recovery control limits. The SW8270D method LCS and LCSD samples had recovery from the various work orders for a total of 7 analytes that were below the lower recovery control limits, indicating the potential for a similar low bias to the associated sample results. These SW8270D LCS and LCSD analyte low recovery failures are detailed in Table 6. For the SW8270D samples of SDG 580-62531, the laboratory re-extracted the field samples within a new LCS batch, 8 days beyond the field sample method holding time of 7 days. The results from the re-extracted analysis confirmed the original (undetected) field sample results associated with the original failed LCS/LCSD analytes. While the re-extracted sample results are useful to confirming the original undetected sample results, these re-extracted results were obtained from samples with expired holding that is more than twice the permitted holding time so are not suitable for definitive assessment of the sample concentrations. The original extraction sample results (performed within holding time) should be considered the valid results for the sample as qualified in Attachment 2. The LCS performance for the re-extracted batch improved significantly for 5 of the 7 analytes. The two analytes 3,3'-Dichlorobenzidine and 4-Chloroaniline were significantly and consistently well below the lower control limit with recovery below the EPA national functional data review guideline for SVOC analytes of 10% recovery, the associated non-detect field sample results for analytes 3,3'-Dichlorobenzidine and 4-Chloroaniline were flagged R to indicate that they were rejected for use due to the extreme low bias observed in these LCS/LCSD samples.

In instances where LCS/LCSD pairs had RPD above the RPD control limit, the associated undetected samples LODs were not qualified on the basis of the associated LCS/LCSD RPD.

With exception of the rejected 3,3'-Dichlorobenzidine and 4-Chloroaniline analyte data the impact of the LCS/LCSD sample performance was minimal and the other analyte results are useable as flagged.

#### Table 6 SW8270D LCS/LCSD Recovery Lower Control Limit Failures

SDG	Lab Sample ID	Prep Batch	Analyte	Original Prep Batch Percent Recovery	Re-extraction Prep Batch LCS Percent Recovery	LCS/LCSD LCL (%)	Flag
	LCS 580-227786/2-A	580-227786	3,3'-Dichlorobenzidine	0.7		20	R
	LCSD 580-227786/3-A	580-227786	3,3'-Dichlorobenzidine	0.5		20	R
	LCS 580-228461/2-A	580-228461	3,3'-Dichlorobenzidine		5	20	R
	LCS 580-227786/2-A	580-227786	3-Nitroaniline	15		22	
	LCSD 580-227786/3-A	580-227786	3-Nitroaniline	3		22	
	LCS 580-228461/2-A	580-228461	3-Nitroaniline		39	22	
	LCS 580-227786/2-A	580-227786	4-Chloroaniline	1		20	R
	LCSD 580-227786/3-A	580-227786	4-Chloroaniline	1		20	R
	LCS 580-228461/2-A	580-228461	4-Chloroaniline		1	20	R
	LCS 580-227786/2-A	580-227786	4-Nitroaniline	60		40	
580-62531-1	LCSD 580-227786/3-A	580-227786	4-Nitroaniline	16		40	
	LCS 580-228461/2-A	580-228461	4-Nitroaniline		71	40	
	LCS 580-227786/2-A	580-227786	Benzyl alcohol	91		52	
	LCSD 580-227786/3-A	580-227786	Benzyl alcohol	44		52	
	LCS 580-228461/2-A	580-228461	Benzyl alcohol		95	52	
	LCS 580-227786/2-A	580-227786	Hexachlorocyclopentadiene	4		20	
	LCSD 580-227786/3-A	580-227786	Hexachlorocyclopentadiene	12		20	
	LCS 580-228461/2-A	580-228461	Hexachlorocyclopentadiene		18	20	
	LCS 580-227786/2-A	580-227786	N-Nitrosodiphenylamine	58		40	
	LCSD 580-227786/3-A	580-227786	N-Nitrosodiphenylamine	32		40	
	LCS 580-228461/2-A	580-228461	N-Nitrosodiphenylamine		71	40	
580-62627-1	LCS 580-228099/2-A	580-228099	4-Chloroaniline	1		20	R
300 02027 1	LCSD 580-228099/3-A	580-228099	4-Chloroaniline	1		20	R
	LCS 580-228351/2-A	580-228351	3,3'-Dichlorobenzidine	11		20	
580-62712-1	LCS 580-228351/2-A	580-228351	4-Chloroaniline	2		20	R
	LCS 580-228351/2-A	580-228351	Hexachlorocyclopentadiene	18		20	
	LCS 580-228461/2-A	580-228461	3,3'-Dichlorobenzidine	5		20	
580-62759-1	LCS 580-228461/2-A	580-228461	4-Chloroaniline	1		20	R
	LCS 580-228461/2-A	580-228461	Hexachlorocyclopentadiene	18		20	

#### Notes:

**Bold** recovery results indicate exceedance of the LCS/LCSD recovery criteria, see Attachment 2 for associated qualification of filed sample results. Associated samples results are flagged as rejected when the associated LCS/LCSD recovery is <10%.

#### Acronyms:

LCL – Lower Control Limit

#### Matrix Spike and Matrix Spike Duplicate Samples

MS/MSD pairs were analyzed at the appropriate frequencies. MS/MSD percent recoveries and RPD for samples were within acceptable limits, except as listed and qualified in Attachment 3. Similar to the observed LCS/LCSD p

erformance, parent field sample results for analytes 3,3'-Dichlorobenzidine and 4-Chloroaniline were rejected due to low MS/MSD recovery when the recovery was below 10%.

In cases where a high bias was indicated, only detected results were qualified. In instances where MS/MSD pairs had RPD above the RPD control limit, only results for detected analytes in the parent sample were qualified to indicate an uncertainty in the precision due to the associated MS/MSD RPD, undetected sample results were not flagged for MS/MSD precision.

#### Field Duplicates

Thee blind duplicate field samples were collected during sample event 2 as shown in Table 7. The three blind field duplicate samples are associated with a total of 24 primary of event 2, and 5 samples of Event A as shown in Table 8. The overall field duplicate frequency for events B and 2 were considered acceptable. The 30% RPD requirement was met for all field duplicate results. No results were qualified on the basis of field duplicates.

#### Table 7 Field Duplicate Identification

Parent Sample ID	Duplicate Sample ID	All RPDs acceptable (Y/N)
APT-1-0916	APT-9-0916	Y
MW-87B-0916	MW-87Z-0916	Y
TPW-1-0916	TPW-9-0916	Y

#### Table 8Field Duplicate Frequency, Methods, and Analytes

Analytical Method	Analyte	Number of Primary Samples	Number of Field Duplicates	Number of Primary Samples	Number of Field Duplicates	Total Number of Primary	Total Number of Field Duplicates
		Event A	(August)	Event 2 (September)		Samples	-
SW8260C	VOC	5	0	24	3	29	3
SW8011	EDB and 123-TCP	0	0	24	3	24	3
SW8270D	SVOC	5	0	24	3	29	3

#### Summary of Data Quality Assessment

- Precision: Overall project precision goals were met, there were 36 instances of LCS/LCSD analyte pairs with precision below control limits, two MS/MSD pairs with precision below control limits for three analytes. However, none of these precision outliers were associated with detected field sample results.
- Accuracy: Overall project accuracy goals were met, except for several isolated instances as previously noted in the Hold Times, Method Blank, Equipment Blank, CCV, Surrogate Recovery, LCS/LCSD, and MS/MSD sections.
- Representativeness: Representativeness goals were met. The samples were collected from planned locations in accordance with the April 2016 Method Statement, July APT Sampling Guidelines, and applicable requirements and guidance documents.
- Comparability: Comparability goals were considered acceptable. TAL provided analytical support for all methods and approved methods were used for the analysis of all samples.
- Completeness: Completeness goals were met. The data were 97% complete with respect to analysis, the data for 2 of 134 analytes was rejected due to accuracy failure and one sample for SW8011 analysis was unable to be analyzed due to sample containers broken during shipment.
- Sensitivity: Sensitivity goals were considered met except for two SVOC analytes that had LOD above the cleanup limit.

This data were considered of overall good quality and acceptable for use with the noted limitations and qualifications in this QAR.

## References

- Alaska Department of Environmental Conservation (ADEC), 18 AAC 75, Oil and Other Hazardous Substances Pollution Control (May 8, 2016).
- ADEC, Technical Memorandum 06-002, Environmental Laboratory Data and Quality Assurance Requirements (ADEC, March 2009).
- Alaska LNG (AKLNG), FUGRO, Method Statement, Revision 1 (April 2016).
- USEPA Document 530/SW-846, Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, fourth edition (USEPA, November 1991).
- SLR, July 2016 APT Groundwater Sampling Event Guidelines, (SLR, July 2016).
- Standard Methods for the Examination of Water and Wastewater, 21st Edition, (2005).

## Attachments

Attachment 1 – ADEC Data Review Checklists

Attachment 2 – LCS/LCSD Qualified Sample Data Table

Attachment 3 – MS/MSD Qualified Sample Data Table

#### Attachment 1

### ADEC Data Review Checklists

## **Laboratory Data Review Checklist**

Completed by:	Jason Gray			
Title:	Project Chemist		Date:	November 6, 2016
CS Report Name:	Event 2 Sampling Kenai Groundwater	Wells	Report Date:	October 10, 2016
Consultant Firm:	SLR International Corpora	tion		
Laboratory Name	: Test America, Denver	Laborat	ory Report Nu	mber: 280-88640
ADEC File Numb	er: NA	ADEC Rec	Key Number:	NA
1. <u>Laboratory</u> a. Did an	ADEC CS approved labora Yes No [	tory receive and <u>per</u> NA (Please expla	<u>form</u> all of the in.)	submitted sample analyses? Comments:
b. If the s laborat	amples were transferred to a cory, was the laboratory perf Yes No	another "network" la orming the analyses ⊠ NA (Please expla	aboratory or sul ADEC CS app in.)	b-contracted to an alternate proved? Comments:
Samples	all analyzed at same lab wh	ere they were receiv	/ed.	
2. <u>Chain of Cust</u> a. COC i	ody (COC) nformation completed, signe Yes No [	ed, and dated (includ NA (Please expla	ling released/re in.)	cceived by)? Comments:
b. Correc	t analyses requested? Yes No [	☐ NA (Please expla	in.)	Comments:
3. <u>Laboratory Sa</u> a. Sampl	<u>mple Receipt Documentatio</u> e/cooler temperature docum Yes Xo [	<u>on</u> ented and within ran ☐ NA (Please expla	ıge at receipt (4 in.)	$4^{\circ} \pm 2^{\circ} \text{ C}$ )? Comments:
Table 1 laborator temperate	of the QAR provides a samp y slightly below the 2°C crit ares within a narrow temper	De receipt summary. teria due to the inher ature range using fro	Project coolers ent imprecision ozen gel ice for	s were received at the n of achieving stable cooler cooling.

G	········	LNG Facilities Groundwater Quality U	Confidential Sampling and Testing Report - Event 2 SAL-FG-GRZZZ-00-002016-004 Rev. 0
Volatile Chlorina	ated Solvents, $\Box$ No	e - acidified waters, Methanol preetc.)?	Comments:
Sample condition	n documented	<ul> <li>broken, leaking (Methanol), zer</li> <li>NA (Please explain.)</li> </ul>	o headspace (VOC vials)? Comments:
Several broken VO	C vials, suffic	ient vials remained to perform and	alysis.
If there were any containers/preser samples, etc.?	discrepancies vation, sample	s, were they documented? For exa e temperature outside of acceptable	mple, incorrect sample le range, insufficient or missing
Yes	🗌 No	NA (Please explain.)	Comments:
COC and container locumenting the co	r discrepancy prrection was p	for sample time, subsequently responsible to lab.	olved and revised COC
Data quality or u	sability affect	ed? (Please explain.) Comme	nts:
No affected data.			
Narrative Present and unde X Yes	rstandable?	NA (Please explain.)	Comments:
Discrepancies, er X Yes	rors or QC fai	ilures identified by the lab?	Comments:
Trip Blank sample	surrogate reco	overy exceedance and CCV carry	over issues noted in narrative.
Were all correction	ve actions doc	cumented? ⊠ NA (Please explain.)	Comments:
No corrective action	ons.		
What is the effec	t on data quali	ity/usability according to the case Comme	narrative? nts:
fected data identified	ed by case nar	rative.	
les Results Correct analyses ⊠ Yes	performed/rep	ported as requested on COC?	Comments:
	Sample preservat Volatile Chlorina ⊠ Yes Sample condition ⊠ Yes Several broken VO If there were any containers/preser samples, etc.? ⊠ Yes COC and container ocumenting the co Data quality or u No affected data. Narrative Present and unde ⊠ Yes Discrepancies, en ⊠ Yes Discrepancies, en ⊠ Yes Trip Blank sample Were all correcti □ Yes No corrective action What is the effect Sected data identified Es Results Correct analyses ⊠ Yes	Sample preservation acceptable         Volatile Chlorinated Solvents,         Yes       No         Sample condition documented         Yes       No         Several broken VOC vials, suffic         If there were any discrepancies         containers/preservation, sample         samples, etc.?         Yes       No         COC and container discrepancy is         locumenting the correction was provide the	LING Facilities Groundwater Quality Volatile Chlorinated Solvents, etc.)?       N         Yes       No       NA (Please explain.)         Sample condition documented – broken, leaking (Methanol), zer Neweral broken VOC vials, sufficient vials remained to perform and If there were any discrepancies, were they documented? For exa containers/preservation, sample temperature outside of acceptab samples, etc.?         Yes       No       NA (Please explain.)         COC and container discrepancy for sample time, subsequently resolucionenting the correction was provided to lab.         Data quality or usability affected? (Please explain.)         Comme         Ves       No         Present and understandable?         Yes       No         Discrepancies, errors or QC failures identified by the lab?         Yes       No         Marative         Present and understandable?         Yes       No         Na (Please explain.)         Corrective actions documented?         Yes       No         Na (Please explain.)         Trip Blank sample surrogate recovery exceedance and CCV carry         Were all corrective actions documented?         Yes       No         No       NA (Please explain.)         No corrective actions.         What is the effect on data quality/usability accordin

5.

4.
b.	Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16 All applicable holding times met?	
	Image: NoImage: NoImage: NoImage: NoComments: $M$	
c.	All soils reported on a dry weight basis? Yes No NA (Please explain.) Comments:	
	nly water samples were included in this work order.	
d.	Are the reported PQLs less than the Cleanup Level or the minimum required detection level for the project?	he
	$\square$ Yes $\square$ No $\square$ NA (Please explain.)Comments:	
e.	Data quality or usability affected?	
	Comments:	_
No aff	cted data.	
<u>QC Sa</u> a.	nples Method Blank i. One method blank reported per matrix, analysis and 20 samples? Yes No NA (Please explain.) Comments:	
	<ul> <li>ii. All method blank results less than PQL?</li> <li>∑ Yes □ No □ NA (Please explain.) Comments:</li> </ul>	
	nalytes were not detected in any method blanks at or above the Limit of Detection (LOD).	
	iii. If above PQL, what samples are affected? Comments:	
No aff	cted data.	]
	iv. Do the affected sample(s) have data flags and if so, are the data flags clearly defined? Yes No NA (Please explain.) Comments:	_
]	o affected data.	]
N- C	v. Data quality or usability affected? (Please explain.) Comments:	٦
INO aff		

6.

				LNG Facilities Gro	undwater Quality Samp USAL-F	oling and Testing Rep G-GRZZZ-00-002010	Confidential ort - Event 2 5-004 Rev. 0 16-Dec-16
b. La	abora	tory Contro	ol Sample/Du	plicate (LCS/LCSD)			
	i.	Organics -	- One LCS/LO	CSD reported per mat	trix, analysis and SW846)	20 samples? (L	CS/LCSD
	$\boxtimes$	Yes	$\square$ No	$\square$ NA (Please ext	olain.)	Comments:	
					,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,		
	ii.	Metals/Inc samples?	organics – one	e LCS and one sample	e duplicate repor	ted per matrix, a	analysis and 20
		Yes	🗌 No	🛛 NA (Please exp	plain.)	Comments:	
Noi	inoro	anic analys	sic				
	morg	and analys	515.				
	iii.	Accuracy And proje AK102 75 Yes	– All percent ct specified D 5%-125%, AK	recoveries (%R) repo QOs, if applicable. (A L103 60%-120%; all o NA (Please exp	orted and within a AK Petroleum m other analyses sec olain.)	method or labor ethods: AK101 e the laboratory Comments:	atory limits? 60%-120%, QC pages)
	iv.	Precision laboratory LCS/LCS other anal Yes	– All relative limits? And p D, MS/MSD, yses see the la	percent differences (l project specified DQC and or sample/sampl aboratory QC pages)	RPD) reported ar Ds, if applicable. e duplicate. (AK plain.)	nd less than met RPD reported Petroleum meth Comments:	hod or from nods 20%; all
	v.	If %R or I	RPD is outside	e of acceptable limits	, what samples a Comments:	re affected?	]
No a	affec	ted data.					
No	vi.	Do the aff Yes cted Data.	ected sample(	(s) have data flags? If ⊠ NA (Please exp	so, are the data solution	flags clearly def Comments:	ined?
	vii	Data quali	ty or usability	y affected? (Use com	ment box to expl	ain.)	
	No 4	Affected Da	ata.				
c. Su	irrog i. No A	ates – Orga Are surrog Yes Affected Da	anics Only gate recoverie No nta.	s reported for organic	e analyses – field plain.)	, QC and labora Comments:	tory samples?

			LNG Facilities Groundwate	er Quality Sampl	Confidential ing and Testing Report - Event 2
::	1 0000000000000000000000000000000000000	All managet	$m_{\rm DOOM} = (0/\mathbf{D})$	USAL-F	G-GRZZZ-00-002016-004 Rev. 0 16-Dec-16.
11.	Accuracy And proj	ect specified D	OOs, if applicable. (AK Pe	etroleum me	thods 50-150 %R; all other
	analyses	see the laborate	ory report pages)		,
	] Yes	No No	NA (Please explain.)	)	Comments:
Trip Bl	lank sample	e had high surr	ogates, no analyte contami	nation. Field	d samples all had
acceptab	ole surrogat	e recovery.			
iii	Do the sa	umple results w	ith failed surrogate recove	ries have da	ta flags? If so, are the data
$\succ$	Yes		NA (Please explain.)	)	Comments:
iv	. Data qua	lity or usability	affected? (Use the comme	ent box to ex	xplain.)
			C	omments:	
No affe	ct to trip bl	ank data.			
d. Trip b	olank – Vol	atile analyses of	only (GRO, BTEX, Volatil	e Chlorinate	ed Solvents, etc.): Water and
Soil		·	•		
i	One trip	blank reported	per matrix analysis and fo	r each coole	er containing volatile samples?
1.	(If not, ei	nter explanatio	n below.)		on containing volatile samples.
$\geq$	Yes	No No	NA (Please explain.)	)	Comments:
L					
ii.	Is the coo	oler used to tran	nsport the trip blank and V	OA samples	s clearly indicated on the COC
$\left \right>$	(If not, a) Yes	$\square$ No	aming why must be entered $\square$ NA (Please explain.)	a below)	Comments:
	<b>_</b> ~				
	All regult	ta laga than DO	1.0		
	Yes	$\square$ No	NA (Please explain.)	)	Comments:
iv	. If above ]	PQL, what sam	ples are affected?		
			C	omments:	
Not app	olicable.				
		1. 1.11.			
v.	Data qua	lity or usability	affected? (Please explain.	) omments:	
NT '				ommonto.	]
NO 1mp	act.				

		LNG Facilities Groundwater Quali	Confidential ity Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
e. Field Duplie	cate		10-Dec-10
i. One Xes	field duplicate sub No	mitted per matrix, analysis and 1	0 project samples? Comments:
The field dupl of field duplic sampling even matrix and ana	icate sample freque ate count, Event A t. This project sati lyte.	ency is presented below in Table samples collected in August we sfied the required frequency of	e 8 of the QAR. For the purpose ere combined with this Septembe f one per 10 samples or less pe
ii. Subi Xes	nitted blind to lab?	NA (Please explain.)	Comments:
Parent Sample	e and Field Duplica	te Pairs are presented in Table 7	of the QAR.
iii. Prec (Rec	ision – All relative commended: 30% w	percent differences (RPD) less t vater, 50% soil)	han specified DQOs?
RPD	$\mathbf{O}(\%) = \text{Absolute val}$	lue of: $(R_1-R_2)$	
		$\frac{1}{((R_1+R_2)/2)}$ x 100	
v	Where $R_1 = Sample$	e Concentration	
🖂 Yes	$R_2 = Field D$ $\square No$	Puplicate Concentration NA (Please explain.)	Comments:
All Field Dup	licate RPD meet cr	iteria.	
iv. Data	quality or usability	affected? (Use the comment bo	ox to explain why or why not.)
		Comm	ents:
No affected d	ata.		
f. Decontamin	ation or Equipment	t Blank (If not used explain why	r).
Yes	🔀 No	NA (Please explain.)	Comments:
Dedicated pum	p tubing used to sat	mple each well, no blank require	ed.
i. All 1	esults less than PO	L?	
		NA (Please explain )	Comments:
edicated pump to	ubing used to sample	le each well, no blank required.	
ii. If ab	ove PQL, what san	nples are affected?	
		Comm	ents:
No affected d	ata.		

LNG Facilities Groundwater iii. Data quality or usability affected? (Please explain.)	Confidential r Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Co	omments:
No affected data.	
<ul> <li>7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.) <ul> <li>a. Defined and appropriate?</li> <li>Yes</li> <li>No</li> <li>NA (Please explain.)</li> </ul> </li> </ul>	Comments:

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

#### Laboratory Data Review Checklist

Completed by:	Jason Gray					
Title:	Project Chemist	Date: Nov	ember 9, 2016			
CS Report Name:	Event 2 Sampling Kenai Wells Groundwater	Report Date:	October 4, 2016			
Consultant Firm: SLR International Corporation						
Laboratory Name	Laboratory Name: Test America, Tacoma Laboratory Report Number: 580-62531					
ADEC File Numb	ber: NA ADEC R	ecKey Number: N	Ā			
1. <u>Laboratory</u> a. Did ar Note, sa were the	Laboratory         a.       Did an ADEC CS approved laboratory receive and perform all of the submitted sample analyses?         □       Yes       □       NA (Please explain.)       Comments:         Note, samples initially shipped to Test America – Anchorage sample receiving center, coolers were then transferred to Test America Tacoma and Denver for formal receipt and analysis.					
b. If the s labora	samples were transferred to another "network" tory, was the laboratory performing the analys Yes No XA (Please exp	laboratory or sub-con es ADEC CS approve lain.) Co	ntracted to an alternate ed? mments:			
Samples of the 1.	s report were analyzed at both America Tacon	a and Denver laborat	tories, see QAR table			
2. <u>Chain of Cust</u> a. COC i	ody (COC) nformation completed, signed, and dated (incl Yes INO NA (Please exp	uding released/receive lain.) Co	ed by)? mments:			
b. Correc	et analyses requested? Yes No NA (Please exp	lain.) Co	mments:			
3. Laboratory Sa	mple Receipt Documentation					

3. <u>Laboratory Sample Receipt Documentation</u>

a. Sample/cooler temperature documented and within range at receipt  $(4^{\circ} \pm 2^{\circ} C)$ ? Yes No NA (Please explain.) Comments:

Table 1 of the QAR provides a sample receipt summary. Project coolers were received at the laboratory slightly below the 2°C criteria due to the inherent imprecision of achieving stable cooler temperatures within a narrow temperature range using frozen gel ice for cooling.

			LNG Facilities Groundwater Quality U	Sampling and Testing Report - Event 2 SAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
b.	Sample preserva Volatile Chlorin	tion acceptabl ated Solvents,	e – acidified waters, Methanol pre etc.)?	served VOC soil (GRO, BTEX,
	X Yes		NA (Please explain.)	Comments:
l re	Note, SW8011 sar equired for chlorin	nples were col nated drinking	lected without sodium thiosulfate water samples.	preservative which is only
c.	Sample conditio	n documented	<ul> <li>broken, leaking (Methanol), zer</li> <li>NA (Please explain.)</li> </ul>	o headspace (VOC vials)? Comments:
S	ample condition of	locumented as	acceptable.	
d.	If there were any containers/prese samples, etc.?	y discrepancies rvation, sampl	s, were they documented? For exa e temperature outside of acceptabl	mple, incorrect sample le range, insufficient or missing
	Yes	🖂 No	NA (Please explain.)	Comments:
1	No discrepancies i	noted.		
e.	Data quality or u	sability affect	ed? (Please explain.)	nte
			Commen	
	No affected data.			
Case N	Narrative			
a.	Present and under $$ Yes	erstandable?	NA (Please explain.)	Comments:
b.	Discrepancies, e	rrors or QC fa	ilures identified by the lab?	
	Yes	No No	NA (Please explain.)	Comments:
(	CCV LCS/LCSD	and MS/MSD	OC failures identified in case par	rative
c.	Were all correct	ive actions doo	cumented?	Comments:
Ι	Data flagged and 1	e-analysis of s	amples for confirmation was perfe	ormed.
d.	What is the effect	ct on data qual	ity/usability according to the case Commen	narrative? nts:
ffect	ed sample results	were qualified		
	sumple results			
<u>sampl</u> a.	l <u>es Results</u> Correct analyses ⊠ Yes	s performed/rej	ported as requested on COC?	Comments:
 on 2.7			Page 2 of 7	

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b	. All applicabl ⊠ Yes	le holding times n No	net?	Comments:
	SW8270D ana outliers the bat results perform holding time se	lysis batch initiall ch was re-analyze led within holding ection.	y extracted and analyzed within he ed for confirmation 8 days beyond g time are considered as the primar	olding time. Due to LCS/LCSD 7 day holding time. Only the y reportable results, see QAR
C.	. All soils repo	orted on a dry wei	ight basis? NA (Please explain.)	Comments:
	Only water sar	nples were includ	ed in this work order.	
d	. Are the report	rted PQLs less that	an the Cleanup Level or the minim	um required detection level for the
	Yes	No No	NA (Please explain.)	Comments:
	Yes, except f limits section a	or 3,3'-Dichlorober and table 4.	nzidine and N-Nitrosodi-n-propylamine	e in all samples, see QAR reporting
e.	. Data quality	or usability affect	ted? Comments:	
	Yes, see QAR	reporting limits sec	tion.	
<u>QC S</u> a.	amples Method Blar i. One Xes	nk method blank repo No	orted per matrix, analysis and 20 sa	amples? Comments:
	ii. All n ⊠ Yes	nethod blank resul	Its less than PQL?	Comments:
	iii. If abo	ove PQL, what sat	mples are affected? Comme	nts:
	No field samp	ole data affected.		
	iv. Do th	ne affected sample	e(s) have data flags and if so, are th NA (Please explain.)	e data flags clearly defined? Comments:
	No field sample	e data affected, n	o data flagged.	
	v. Data	quality or usabilit	ty affected? (Please explain.)	

6.

Comments:

### b. Laboratory Control Sample/Duplicate (LCS/LCSD)

	required	per AK meth	ods, LCS required per SW846) $\square$ NA (Places explain)	Commontor
			INA (Flease explain.)	Comments.
	ii. Metals/I samples	norganics – or ?	ne LCS and one sample duplicate re	eported per matrix, analysis and 20
	Yes Yes	No No	NA (Please explain.)	Comments:
No i	inorganic anal	ysis.		
	iii. Accurac And pro AK102 ⁷ ☐ Yes	y – All percer ject specified 75%-125%, A ⊠ No	at recoveries (%R) reported and wit DQOs, if applicable. (AK Petroleu K103 60%-120%; all other analyse ☐ NA (Please explain.)	thin method or laboratory limits? m methods: AK101 60%-120%, es see the laboratory QC pages) Comments:
LCS/ 3.	/LCSD failure	es were encou	ntered for SW8260C and SW8270I	D methods, see QAR attachment
	iv. Precision laborator LCS/LC other and Yes	n – All relativ ry limits? And SD, MS/MSE alyses see the X No	e percent differences (RPD) reported l project specified DQOs, if applica o, and or sample/sample duplicate. laboratory QC pages) NA (Please explain.)	ed and less than method or able. RPD reported from (AK Petroleum methods 20%; all Comments:
See	QAR attachm	ent 3.		
	v. If %R or	RPD is outsi	de of acceptable limits, what sampl Comme	les are affected? nts:
See QAR	attachment 3.			
	vi. Do the a ⊠ Yes	ffected sampl	e(s) have data flags? If so, are the c NA (Please explain.)	lata flags clearly defined? Comments:
See QAR	attachment 3	for validation	flags.	
	vii. Data qua	ality or usabili	ty affected? (Use comment box to	explain.)
See O Dichl	QAR LCS/LC lorobenzidine	CSD section of and 4-Chloro	f usability discussion and rejected r aniline.	esults for analytes 3,3'-
c. Su	urrogates – Or i. Are surr	ganics Only ogate recover	ies reported for organic analyses –	field, QC and laboratory samples?

			LNG Facilities Groundwater Quality Sa	Confidential ampling and Testing Report - Event 2
	🛛 Yes	🗌 No	$\square$ NA (Please explain.)	16-Dec-16 Comments:
	ii. Accura And pr analyse	acy – All percentroject specified es see the laboration	at recoveries (%R) reported and withi DQOs, if applicable. (AK Petroleum atory report pages)	n method or laboratory limits? methods 50-150 %R; all other
	Yes Yes	🗌 No	NA (Please explain.)	Comments:
No si	urrogate ou	tliers.		
	iii. Do the flags c ☐ Yes	sample results learly defined?	with failed surrogate recoveries have 🖂 NA (Please explain.)	data flags? If so, are the data Comments:
No o	utliers.			
	iv. Data q	uality or usabili	ty affected? (Use the comment box to Comments	o explain.) s:
No a	ffected sam	ples.		
d. Tri <u>Soi</u>	p blank – V <u>il</u>	Volatile analyses	s only (GRO, BTEX, Volatile Chlorin	nated Solvents, etc.): Water and
	i. One tri (If not, Yes	p blank reporte enter explanati	d per matrix, analysis and for each co on below.) NA (Please explain.)	Comments:
	ii. Is the c (If not, ⊠ Yes	cooler used to tr a comment exp	ansport the trip blank and VOA samplaining why must be entered below)	oles clearly indicated on the COC ⁴ Comments:
	iii. All res ⊠ Yes	ults less than PO	QL?	Comments:
	iv. If abov	e PQL, what sa	imples are affected?	
Not a	applicable,	all TB results be	elow PQL.	
	v. Data q	uality or usabili	ty affected? (Please explain.) Comments	s:
No ir	mpact.			

				LNG Facilities Groundwater Quality Sampl USAL-F0	Confidential ling and Testing Report - Event 2 G-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
e. F	ield D	Duplicate			10-Dec-10
	i. ⊠	One field Yes	duplicate subm	nitted per matrix, analysis and 10 proj NA (Please explain.)	ect samples? Comments:
The satis	field fied t	duplicate he required	sample freque frequency of	ency is presented below in Table 8 one per 10 samples or less per matrix	of the QAR. This project and analyte.
	ii.	Submitted Yes	blind to lab?	NA (Please explain.)	Comments:
Par	ent Sa	ample and	Field Duplicate	e Pairs are presented in Table 7 of the	QAR.
	iii.	Precision (Recomm	– All relative p ended: 30% wa	percent differences (RPD) less than sp ater, 50% soil)	ecified DQOs?
		RPD (%)	= Absolute val	ue of: $(R_1-R_2)$	
				$\frac{1}{((R_1+R_2)/2)}$ x 100	
		Where	$\mathbf{R}_1 = \mathbf{Sample}$	Concentration	
	$\square$	Ves	$R_2 = Field Du$	plicate Concentration $\Box NA$ (Please explain)	Comments
					Comments.
All	Field	Duplicate	RPD meet crit	eria.	
	iv.	Data quali	ty or usability	affected? (Use the comment box to ex	xplain why or why not.)
				Comments:	
No	affect	ted data.			
f. D	Decont	amination	or Equipment	Blank (If not used explain why).	
		Yes	No	NA (Please explain.)	Comments:
Not	requi	ed, dedica	ted pump tubir	ng used to sample each well.	
	1	,	1 1		
	i.	All results	s less than PQL	.?	
		Yes	∐ No	X NA (Please explain.)	Comments:
No	No equipment rinse samples performed.				
<u> </u>	ii.	If above P	QL, what sam	ples are affected?	
				Comments:	

No affected data.

iii. Data quality or usability affected? (Please explain.)

No affected data.

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Comments:	

# 7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a.	Defined and ap	opropriate?			
	Yes	No	NA (Please explain.)	Comments:	
<u> </u>					

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### **Laboratory Data Review Checklist**

Completed by:	Jason Gray		
Title:	Project Chemist	Date:	November 9, 2016
CS Report Name:	Event 2 Sampling Kenai Wells Groundwater	Report Date:	October 14, 2016
Consultant Firm:	SLR International Corporation		
Laboratory Name	E: Test America, Tacoma	Laboratory Report Nu	imber: 580-62627
ADEC File Numb	ber: NA AD	EC RecKey Number:	NA
1. <u>Laboratory</u> a. Did ar	ADEC CS approved laboratory receive	and <u>perform</u> all of the use explain.)	e submitted sample analyses? Comments:
were the	n transferred to Test America Tacoma ar	– Anchorage sample re nd Denver for formal re	eceiving center, coolers
b. If the s labora	samples were transferred to another "net tory, was the laboratory performing the Yes No XA (Plea	work" laboratory or su analyses ADEC CS ap se explain.)	ib-contracted to an alternate proved? Comments:
Samples of the 1.	is report were analyzed at both America	Tacoma and Denver la	aboratories, see QAR table
2. <u>Chain of Cust</u> a. COC i	tody (COC) information completed, signed, and dated Yes No NA (Plea	d (including released/reuse explain.)	eceived by)? Comments:
b. Correc	ct analyses requested? Yes No NA (Plea	use explain.)	Comments:
3. <u>Laboratory Sa</u> a. Sampl	ample Receipt Documentation e/cooler temperature documented and w Yes No NA (Plea of the QAR provides a sample receipt su	ithin range at receipt ( se explain.)	4° ± 2° C)? Comments: rs were received at the
laborator temperat	ry slightly below the 2°C criteria due to t ures within a narrow temperature range	he inherent imprecisio using frozen gel ice for	on of achieving stable cooler r cooling.

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acidified waters, Methanol preserved VOC soil (GRO, BT	EX,

b.	b. Sample preservation acceptable – acidified waters, Methanol preserved VOC soil (GRO, BTEX, Volatile Chlorinated Solvents, etc.)?				
	Yes Yes		$\square$ NA (Please explain.)	Comments:	
с.	Sample condition	n documented -	- broken, leaking (Methanol), zero he	eadspace (VOC vials)? Comments:	
Sa	Several VOC conta acceptable.	iners broken dı	ring shipment, sample condition oth	erwise documented as	
d.	If there were any containers/preser samples, etc.?	discrepancies, vation, sample	were they documented? For exampl temperature outside of acceptable ra	e, incorrect sample nge, insufficient or missing	
	Yes	🗌 No	NA (Please explain.)	Comments:	
S C V	Sample MW-74A- Dne discrepancy fo vas provided to lab	0916 was unab r a sample colle	le to be analyzed for SW8011 analys ection time was noted and a COC wi	is due to broken containers. th revised time documented	
e.	Data quality or u	sability affected	d? (Please explain.) Comments:		
5	Sample MW-74A-0	0916 has no SV	W8011 analysis performed.		
4. <u>Case I</u> a.	Narrative Present and unde ∑Yes	rstandable?	NA (Please explain.)	Comments:	
b.	Discrepancies, er Xes	rors or QC fail	ures identified by the lab?	Comments:	
	CCV and LCS/LCS	SD QC failures	identified in case narrative.		
с.	Were all correcti	ve actions docu	ımented? ⊠ NA (Please explain.)	Comments:	
]	Data flagged, no co	prrective action	s otherwise identified.		
d.	What is the effec	t on data qualit	y/usability according to the case nam Comments:	rative?	

Affected sample results were qualified.

5	Some	LNG Facilities Groundwater Quality Sampling and Testing Rep USAL-FG-GRZZZ-00-002016	Confidential ort - Event 2 5-004 Rev. 0 16-Dec-16
5.	<u>samp</u> a.	. Correct analyses performed/reported as requested on COC? Yes No NA (Please explain.) Comments:	
	b.	. All applicable holding times met? Yes No NA (Please explain.) Comments:	]
	c.	All soils reported on a dry weight basis?         Yes       No         NA (Please explain.)         Combu water commission and do in this work order.	]
	d.	<ul> <li>Only water samples were included in this work order.</li> <li>Are the reported PQLs less than the Cleanup Level or the minimum required detection project?</li> <li>Yes No NA (Please explain.) Comments:</li> </ul>	on level for the
		Yes, except for 3,3'-Dichlorobenzidine and N-Nitrosodi-n-propylamine in all samples, and for 1,2,3-TCP in sample MW-74A-0916 see QAR reporting limits section and table 4.	or EDB and
	e.	. Data quality or usability affected? Comments:	
	Į	Yes, see QAR reporting limits section	
6.	<u>QC Sa</u> a.	Samples . Method Blank i. One method blank reported per matrix, analysis and 20 samples? [Ves] No NA (Please explain.) Comments:	]
		<ul> <li>ii. All method blank results less than PQL?</li> <li>☑ Yes □ No □ NA (Please explain.) Comments:</li> </ul>	
		iii. If above PQL, what samples are affected? Comments:	
		No field sample data affected.	
	_	iv. Do the affected sample(s) have data flags and if so, are the data flags clearly of Yes No NA (Please explain.) Comments:	defined?
		No field sample data affected, no data flagged.	

		Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-EG-GRZZZ-00-002016-004 Rev. 0
	v.	Data quality or usability affected? (Please explain.)
		Comments:
No a	ffected d	ata.
t	o. Labor	atory Control Sample/Duplicate (LCS/LCSD)
	i.	Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846) Yes No NA (Please explain.) Comments:
[		-
l		
	ii.	Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and 20 samples?
		$]$ Yes $\square$ No $\boxtimes$ NA (Please explain.)Comments:
	No inor	ganic analysis.
	iii	<ul> <li>Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)</li> <li>Yes ⊠ No □ NA (Please explain.) Comments:</li> </ul>
	Sporadic Di-n-oct	LCS failures encountered for analytes trans-1,2-Dichloroethene, Benzo[g,h,i]perylene and yl phthalate see QAR attachment 3.
	iv.	<ul> <li>Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; all other analyses see the laboratory QC pages)</li> <li>Yes No NA (Please explain.) Comments:</li> </ul>
	See OA	R attachment 3.
l	v.	If %R or RPD is outside of acceptable limits, what samples are affected? Comments:
See 0	QAR atta	chment 3.
	vi.	. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? Yes No NA (Please explain.) Comments:
See (	QAR atta	chment 3 for validation flags.
	vii	i. Data quality or usability affected? (Use comment box to explain.)
	See QA	R LCS/LCSD section of usability discussion.

			LNG Facilities Groundwater Qu	Confidential ality Sampling and Testing Report - Event 2
C				ÚSAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
c. Suri	rogates – G	Organics Only		
	i. Are su Xes	irrogate recoverie	s reported for organic analyses NA (Please explain.)	- field, QC and laboratory samples? Comments:
Surro	gates repo	orted.		
:	<ul> <li>ii. Accur</li> <li>And p</li> <li>analys</li> <li>∑ Yes</li> </ul>	acy – All percent roject specified D ses see the laborat	recoveries (%R) reported and QQOs, if applicable. (AK Petro ory report pages)	within method or laboratory limits? leum methods 50-150 %R; all other Comments:
No su	irrogate ou	utliers.		
:	iii. Do the flags c □ Yes	e sample results w clearly defined?	vith failed surrogate recoveries	have data flags? If so, are the data Comments:
No ou	utliers.			
	iv. Data c	quality or usability	y affected? (Use the comment l Comm	pox to explain.) ments:
No af	fected san	nples.		
d. Trip <u>Soil</u>	o blank – V l	Volatile analyses	only (GRO, BTEX, Volatile C	hlorinated Solvents, etc.): Water and
	i. One tr (If not ∑ Yes	rip blank reported t, enter explanatio No	per matrix, analysis and for ea n below.) NA (Please explain.)	ch cooler containing volatile samples? Comments:
	ii. Is the (If not ⊠ Yes	cooler used to tra t, a comment expl	nsport the trip blank and VOA aining why must be entered be NA (Please explain.)	samples clearly indicated on the COC ⁴ low) Comments:
	iii. All res ⊠ Yes	sults less than PQ	L?	Comments:
	iv. If abo	ve PQL, what san	nples are affected?	
Not a	pplicable,	all TB results bel	ow PQL.	

v.	Data d	quality of	or usability	affected?	Please ex	plain.)
----	--------	------------	--------------	-----------	-----------	---------

No impact.         Field Duplicate         i. One field duplicate submitted per matrix, analysis and 10 project samples?         iii Yes       No       NA (Please explain.)       Comments:         the field duplicate sample frequency of one per 10 samples or less per matrix and analyte.         iii. Submitted blind to lab?         iii. Submitted blind to lab?         Parent Sample and Field Duplicate Pairs are presented in Table 7 of the QAR.         iii. Precision – All relative percent differences (RPD) less than specified DQOS? (Recommended: 30% water, 50% soil)         RPD (%) = Absolute value of:       (R ₁ -R ₂ )         (R ₁ +R ₂ )/2)       x 100         Where R ₁ = Sample Concentration       R ₂ = Field Duplicate Concentration         R 2 = Field Duplicate Concentration       Yes         No       NA (Please explain.)       Comments:         All Field Duplicate RPD meet criteria.       iv. Data quality or usability affected? (Use the comment box to explain why or why no Comments:         No       NA (Please explain.)       Comments:         No       NA (Please exp			Comme	nts:
Field Duplicate         i. One field duplicate submitted per matrix, analysis and 10 project samples? $\square$ Yes $\square$ No $\square$ NA (Please explain.)       Comments:         the field duplicate sample frequency of one per 10 samples or less per matrix and analyte.       ii. Submitted blind to lab? $\square$ NA (Please explain.)       Comments:         ii. Submitted blind to lab? $\square$ NA (Please explain.)       Comments:         Parent Sample and Field Duplicate Pairs are presented in Table 7 of the QAR.       iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)         RPD (%) = Absolute value of: $(R_1-R_2)$ x 100 $(R_1+R_2)/2$ )       Where $R_1$ = Sample Concentration $R_2$ = Field Duplicate Concentration $R_2$ = Field Duplicate Concentration $R_2$ = Field Duplicate Concentration $\square$ Yes $\square$ No $\square$ NA (Please explain.)       Comments:         All Field Duplicate RPD meet criteria.       iv. Data quality or usability affected? (Use the comment box to explain why or why no Comments:         No $\square$ NA (Please explain.)       Comments:         No $\square$ NA (Please explain.)       Comments:         or required, dedicated pump tubing used to sample each well.       i. All results less than PQL?       Comments:         No $\square$ NA (Please explain.)       Comments:       No equipment rinse samples perf	No impact.			
i. One field duplicate submitted per matrix, analysis and 10 project samples?         i. Yes       No       NA (Please explain.)       Comments:         the field duplicate sample frequency of one per 10 samples or less per matrix and analyte.       iii. Submitted blind to lab?       No       NA (Please explain.)       Comments:         ii. Submitted blind to lab?       No       NA (Please explain.)       Comments:         Parent Sample and Field Duplicate Pairs are presented in Table 7 of the QAR.       iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)         RPD (%) = Absolute value of:       (R ₁ -R ₂ )       x 100         (R1-R2)/2,10       Where R ₁ = Sample Concentration       R2 = Field Duplicate Concentration         R2 = Field Duplicate Concentration       R2 = Field Duplicate Concentration       Comments:         All Field Duplicate RPD meet criteria.       iv. Data quality or usability affected? (Use the comment box to explain why or why not comments:         No affected data.	. Field Duplicat	e		
1. One field duplicate submitted per matrix, analysis and 10 project samples?         □ Yes       □ No       □ NA (Please explain.)       Comments:         he field duplicate sample frequency of one per 10 samples or less per matrix and analyte.       ii. Submitted blind to lab?       □       NA (Please explain.)       Comments:         ii. Submitted blind to lab?       □ NA (Please explain.)       Comments:         Parent Sample and Field Duplicate Pairs are presented in Table 7 of the QAR.       Iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)         RPD (%) = Absolute value of:       (R ₁ -R ₂ )       x 100         (Recommended: 30% water, 50% soil)       RPD (%) = Absolute value of:       (R ₁ -R ₂ )/((R ₁ +R ₂ )/2)         Where R ₁ = Sample Concentration       R ₂ = Field Duplicate Concentration         R ₂ = Field Duplicate Concentration       R ₂ = Field Duplicate Concentration         M Yes       No       □ NA (Please explain.)       Comments:         All Field Duplicate RPD meet criteria.       iv. Data quality or usability affected? (Use the comment box to explain why or why not Comments:         No affected data.		111 1 1 1	··· 1 · · · · · · · · · · · · · · · · ·	
Line       Line       Line       Commentation         the field duplicate sample frequency is presented below in Table 8 of the QAR. This atisfied the required frequency of one per 10 samples or less per matrix and analyte.         ii.       Submitted blind to lab?       NA (Please explain.)       Comments:         Parent Sample and Field Duplicate Pairs are presented in Table 7 of the QAR.       Recommended: 30% water, 50% soil)       RPD (%) = Absolute value of:       (R ₁ -R ₂ ) ((R ₁ +R ₂ )/2)       x 100 ((R ₁ +R ₂ )/2)         Where R ₁ = Sample Concentration R ₂ = Field Duplicate Concentration R ₂ = Field Duplicate Concentration       Comments:         All Field Duplicate RPD meet criteria.       iv. Data quality or usability affected? (Use the comment box to explain why or why no Comments:         No affected data.       Decontamination or Equipment Blank (If not used explain why).       Comments:         i All results less than PQL?       Yes       No       NA (Please explain.)       Comments:         No acquipment rines sample used to sample each well.       i. All results less than PQL?       Yes       No       Comments:         No equipment rines samples performed.       ii. If above PQL, what samples are affected?       Comments:       Comments:	1. One fie $\nabla$ Yes	Id duplicate sub $\Box$ No	mitted per matrix, analysis and $\Pi$	) project samples? Comments:
he field duplicate sample frequency is presented below in Table 8 of the QAR. This atisfied the required frequency of one per 10 samples or less per matrix and analyte.         ii. Submitted blind to lab?         iii. Yes       No       NA (Please explain.)       Comments:         Parent Sample and Field Duplicate Pairs are presented in Table 7 of the QAR.         iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)         RPD (%) = Absolute value of: $(R_1-R_2)$ x 100 $(R_1+R_2)/2$ )       where $R_1$ = Sample Concentration       x 100 $R_2$ = Field Duplicate Concentration $R_2$ = Field Duplicate Concentration       Comments:         All Field Duplicate RPD meet criteria.       iv. Data quality or usability affected? (Use the comment box to explain why or why not Comments:         No affected data.       So No       NA (Please explain.)       Comments:         No affected data.       Ocontamination or Equipment Blank (If not used explain why).       Comments:         i. All results less than PQL?       Yes       No       NA (Please explain.)       Comments:         No       NA (Please explain.)       Comments:       No       NA (Please explain.)       Comments:				Commonts.
ansited the required frequency of one per to samples of ress per matrix and analyte.         ii. Submitted blind to lab? $\square$ Yes $\square$ No         Parent Sample and Field Duplicate Pairs are presented in Table 7 of the QAR.         iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)         RPD (%) = Absolute value of: $(R_1 \cdot R_2)$ $(Recommended: 30% water, 50% soil)         RPD (%) = Absolute value of:       (R_1 \cdot R_2)/2         where R_1 = Sample Concentration         R_2 = Field Duplicate RPD meet criteria.         iv. Data quality or usability affected? (Use the comment box to explain why or why not comments:         No affected data.         Decontamination or Equipment Blank (If not used explain wh$	The field duplica	ate sample frequency of	lency is presented below in Tal	ble 8 of the QAR. This properties and analyte
ii. Submitted blind to lab?       NA (Please explain.)       Comments:         Parent Sample and Field Duplicate Pairs are presented in Table 7 of the QAR.       iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)         RPD (%) = Absolute value of: $(R_1 \cdot R_2)$ x 100 $(Recommended: 30\% water, 50\% soil)       x 100         RPD (%) = Absolute value of:       (R_1 \cdot R_2)/2       x 100         (R_1 + R_2)/2       Where R_1 = Sample Concentration R_2 = Field Duplicate Concentration       Comments:         M Yes       No       NA (Please explain.)       Comments:         All Field Duplicate RPD meet criteria.       comments:       Comments:         No affected data.       Comments:       Comments:         No affected data.       No A (Please explain.)       Comments:         iv. Data quality or usability affected? (Use the comment box to explain why or why no Comments:       Comments:         No affected data.       Comments:       Comments:         No affected data.       Comments:       Comments:         i. All results less than PQL?       Comments:       Comments:         No       NA (Please explain.)       Comments:         No       NA (Please explain.)       Comments:         i. All results less than PQL?  $	saustied the requi	ired irequency 0	Tone per 10 samples of less per n	
$\boxtimes$ Yes $\square$ No $\square$ NA (Please explain.)       Comments:         Parent Sample and Field Duplicate Pairs are presented in Table 7 of the QAR.	ii. Submit	ted blind to lab?		
Parent Sample and Field Duplicate Pairs are presented in Table 7 of the QAR.         iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)         RPD (%) = Absolute value of: $(R_1-R_2)$ $(R_1+R_2)/2)$ Where $R_1$ = Sample Concentration $R_2$ = Field Duplicate Concentration $R_2$ = Field Duplicate Concentration         Water R = Sample Concentration $R_2$ = Field Duplicate Concentration $R_2$ = Field Duplicate RPD meet criteria.         All Field Duplicate RPD meet criteria.         iv. Data quality or usability affected? (Use the comment box to explain why or why not Comments:         No affected data.         Decontamination or Equipment Blank (If not used explain why).         Yes       No         No       NA (Please explain.)         Comments:         No affected data.         Decontamination or Equipment Blank (If not used explain why).         Yes       No         NA (Please explain.)       Comments:         for required, dedicated pump tubing used to sample each well.         i. All results less than PQL?       [Yes         Yes       No       NA (Please explain.)       Comments:         No equipment rinse samples performed.       ii. If above PQL, what samples are affected?	🛛 Yes	No No	NA (Please explain.)	Comments:
iii. Precision – All relative percent differences (RPD) less than specified DQOs? (Recommended: 30% water, 50% soil)         RPD (%) = Absolute value of: $(R_1-R_2)$ $(R_1+R_2)/2)$ Where $R_1$ = Sample Concentration $R_2$ = Field Duplicate PD meet criteria.         No affected data.       Comments:         Decontamination or Equipment Blank (If not used explain why).       Comments:         i. All results less than PQL? $R_2$ = No       Comments:         No equipment rinse samples performed.       No Represent Represented Representation <td>Parent Sample and</td> <td>nd Field Duplica</td> <td>te Pairs are presented in Table 7</td> <td>of the QAR.</td>	Parent Sample and	nd Field Duplica	te Pairs are presented in Table 7	of the QAR.
(Recommended: 30% water, 50% soil)         RPD (%) = Absolute value of: $(R_1-R_2)$ x 100 $((R_1+R_2)/2)$ Where $R_1$ = Sample Concentration $R_2$ = Field Duplicate Concentration $R_2$ = Field Duplicate Concentration $\boxtimes$ Yes $\square$ No $\square$ No $\square$ NA (Please explain.)         Comments: $\square$ Vata quality or usability affected? (Use the comment box to explain why or why not comments:         No affected data.         Decontamination or Equipment Blank (If not used explain why). $\square$ Yes $\square$ No $\square$ Vata quality less than PQL? $\square$ Yes $\square$ No $\square$ NA (Please explain.)       Comments:         No equipment rinse samples performed.       i. If above PQL, what samples are affected?	iii. Precisi	on – All relative	percent differences (RPD) less th	an specified DQOs?
RPD (%) = Absolute value of: $(R_1-R_2)$ x 100 $((R_1+R_2)/2)$ Where $R_1$ = Sample Concentration $R_2$ = Field Duplicate Concentration $M_2$ = Field Duplicate Concentration $R_2$ = Field Duplicate Concentration $M_2$ = Field Duplicate RPD meet criteria.       Comments:         All Field Duplicate RPD meet criteria.       Comments:         iv. Data quality or usability affected? (Use the comment box to explain why or why not Comments:         No affected data.         Decontamination or Equipment Blank (If not used explain why). $\square$ Yes $\square$ No $\square$ NA (Please explain.)       Comments:         i. All results less than PQL? $\square$ No $\square$ Yes $\square$ No $\square$ NA (Please explain.)         No equipment rinse samples performed.       ii. If above PQL, what samples are affected?	(Recon	nmended: 30% v	vater, 50% soil)	
$\begin{array}{c} (C(R_1+R_2)/2) \\ \text{Where } R_1 = \text{Sample Concentration} \\ R_2 = \text{Field Duplicate Concentration} \\ \ \text{Comments:} \\ \hline \text{Comments:} \\ \hline \text{Comments:} \\ \hline \text{Decontamination or Equipment Blank (If not used explain why).} \\ \hline \text{Comments:} \\ \hline \text{Decontamination or Equipment Blank (If not used explain why).} \\ \hline \text{Comments:} \\ \hline \text{Or required, dedicated pump tubing used to sample each well.} \\ \hline \text{i. All results less than PQL?} \\ \hline \text{Yes} \\ \hline \text{No} \\ \hline \text{No} \\ \hline \text{No} \\ \hline \text{Comments:} \\ \hline \text{No equipment rinse samples performed.} \\ \hline \text{i. If above PQL, what samples are affected?} \\ \hline \end{tabular}$	RPD (9	%) = Absolute va	alue of: $(\mathbf{R}_1 - \mathbf{R}_2)$	
((R ₁ +R ₂ )/2) Where R ₁ = Sample Concentration R ₂ = Field Duplicate Concentration M Yes No NA (Please explain.) Comments: All Field Duplicate RPD meet criteria. iv. Data quality or usability affected? (Use the comment box to explain why or why no Comments: No affected data. Decontamination or Equipment Blank (If not used explain why). Yes No NA (Please explain.) Comments: ot required, dedicated pump tubing used to sample each well. i. All results less than PQL? Yes No NA (Please explain.) Comments: No equipment rinse samples performed. ii. If above PQL, what samples are affected?		•) 110001000	<u> </u>	
Where $R_1 = Sample Concentration$ $R_2 = Field Duplicate Concentration$ $\boxtimes$ Yes $\square$ No $\square$ NA (Please explain.)         Comments:         All Field Duplicate RPD meet criteria.         iv. Data quality or usability affected? (Use the comment box to explain why or why not comments:         No affected data.         Decontamination or Equipment Blank (If not used explain why). $\square$ Yes $\square$ No $\square$ NA (Please explain.)       Comments:         Yes $\square$ No $\square$ Yes $\square$ No $\square$ Yes $\square$ No $\square$ NA (Please explain.)       Comments:         Yes $\square$ No $\square$ No (Please explain.)       Comments:         No equipment rinse samples performed.       ii. If above PQL, what samples are affected?			$((R_1+R_2)/2)$	
R2 = Field Duplicate Concentration         Xes       No       NA (Please explain.)       Comments:         All Field Duplicate RPD meet criteria.       iv. Data quality or usability affected? (Use the comment box to explain why or why no Comments:         No affected data.       Comments:         Decontamination or Equipment Blank (If not used explain why).       Comments:         Yes       No       NA (Please explain.)       Comments:         fot required, dedicated pump tubing used to sample each well.       .       .         i. All results less than PQL?       Yes       No       NA (Please explain.)       Comments:         No equipment rinse samples performed.       ii. If above PQL, what samples are affected?       .       .	Wh	here $R_1 = $ Sample	e Concentration	
All Field Duplicate RPD meet criteria.     iv. Data quality or usability affected? (Use the comment box to explain why or why no Comments:     No affected data.     Decontamination or Equipment Blank (If not used explain why).   Yes   Yes   No     i. All results less than PQL?   Yes   Yes   No   No <	$\bigvee$ Ves	$R_2 = Field E$	Suplicate Concentration $\Box NA$ (Please explain)	Comments
All Field Duplicate RPD meet criteria.         iv. Data quality or usability affected? (Use the comment box to explain why or why no Comments:         No affected data.         Decontamination or Equipment Blank (If not used explain why).        Yes      No        NA (Please explain.)       Comments:        ot required, dedicated pump tubing used to sample each well.        i. All results less than PQL?        Yes      NA (Please explain.)        No      NA (Please explain.)        i. All results less than PQL?				comments.
iv. Data quality or usability affected? (Use the comment box to explain why or why no Comments:         No affected data.         Decontamination or Equipment Blank (If not used explain why).         □ Yes       ☑ No         ○ Trequired, dedicated pump tubing used to sample each well.         i. All results less than PQL?         □ Yes       □ No         ○ NA (Please explain.)       Comments:         No equipment rinse samples performed.       If above PQL, what samples are affected?	All Field Duplic	ate RPD meet cr	iteria.	
Image: Second structure of the control of the cont	iv. Data qu	uality or usabilit	v affected? (Use the comment boy	x to explain why or why not
No affected data.         Decontamination or Equipment Blank (If not used explain why).         Yes       No         No       NA (Please explain.)         Comments:         tot required, dedicated pump tubing used to sample each well.         i.       All results less than PQL?         Yes       No         Yes       No         No       NA (Please explain.)         Comments:       Omments:         No       NA (Please explain.)         Comments:       No         In the subst set of the sample set of the sample each well.         In the subst set of the sample set of the sample each well.         In the subst set of the sample set of the sample each well.         In the subst set of the sample set of the sample each well.         In the subst set of the sample set of the sample each well.         In the sample set of the sample each well.         In the sample set of the sample each well.         In the sample set of the sample each well.         In the sample set of the sample each well.         In the sample set of the sample each well.         In the sample set of the sample each well.         In the sample set of the sample each well.         In the sample set of the sample each well.         In the sample each well.      <			Commo	nto:
No affected data.         Decontamination or Equipment Blank (If not used explain why).         Yes       No         No       NA (Please explain.)         Comments:         fot required, dedicated pump tubing used to sample each well.         i. All results less than PQL?         Yes       No         Yes       No         NA (Please explain.)       Comments:         No equipment rinse samples performed.       Comments:         ii. If above PQL, what samples are affected?				1115.
Decontamination or Equipment Blank (If not used explain why).         □ Yes       ○ NA (Please explain.)       Comments:         ot required, dedicated pump tubing used to sample each well.         i. All results less than PQL?       ○ NA (Please explain.)       Comments:         Yes       ○ No       ○ NA (Please explain.)       Comments:         No equipment rinse samples performed.       ii. If above PQL, what samples are affected?	No affected data	•		
Decontamination or Equipment Blank (If not used explain why). $\Box$ Yes $\Box$ No $\Box$ NA (Please explain.)       Comments:         Tot required, dedicated pump tubing used to sample each well.       i.       All results less than PQL? $\Box$ No $\Box$ NA (Please explain.)       Comments:         No equipment rinse samples performed.       ii. If above PQL, what samples are affected?       If above PQL, what samples are affected?				
□ Yes       □ No       □ NA (Please explain.)       Comments:         Iot required, dedicated pump tubing used to sample each well.	. Decontaminati	on or Equipmen	t Blank (If not used explain why)	
Interview	Yes	🖂 No	NA (Please explain.)	Comments:
i. All results less than PQL?         □ Yes       □ No       ⊠ NA (Please explain.)       Comments:         No equipment rinse samples performed.         ii. If above PQL, what samples are affected?	Not required, ded	icated pump tub	ing used to sample each well.	
i. All results less than PQL?            Yes        No       NA (Please explain.)       Comments:         No equipment rinse samples performed.         ii. If above PQL, what samples are affected?				
Yes       No       NA (Please explain.)       Comments:         No equipment rinse samples performed.	i. All resu	ults less than PQ	L?	
No equipment rinse samples performed. ii. If above PQL, what samples are affected?	Yes	🗌 No	NA (Please explain.)	Comments:
ii. If above PQL, what samples are affected?	No equipment r	inse samples per	formed.	
	ii If abov	e POL, what sar	nples are affected?	
	II. II abov	• · · · ·	-r	
No affected data Page 6 of 7	n. n abov			

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iii. Data quality or usability affected? (Please explain.)

Comments:

	No affected data.		
7	Other Data Flags/Qualifiers (ACOF	AECEE Lab Specific etc.)	
7.	a. Defined and appropriate?	Arcee, Lab Specific, etc.)	
	$\boxtimes$ Yes $\square$ No	NA (Please explain.)	Comments:

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### **Laboratory Data Review Checklist**

Completed by:	Jason Gray		
Title:	Project Chemist	Date:	November 9, 2016
CS Report Name: Consultant	Event 2 Sampling Kenai Wells Groundwater	Report Date:	October 6, 2016
Firm:	SLR International Corporation		
Laboratory Name	Test America, Tacoma	Laboratory Report Nu	1 state in the second s
ADEC File Numb	per: NA	ADEC RecKey Number:	NA
1. <u>Laboratory</u> a. Did ar Note, sa transferre	ADEC CS approved laboratory recei Yes No NA (Pl mples initially shipped to Test Americ ed to Test America Tacoma for formal	ve and <u>perform</u> all of the lease explain.) ca – Anchorage sample re l receipt and analysis.	submitted sample analyses? Comments: ecciving center then were
b. If the s labora	samples were transferred to another "r tory, was the laboratory performing th Yes No NA (Pl	network" laboratory or su ne analyses ADEC CS applease explain.)	b-contracted to an alternate proved? Comments:
Samples	s analyzed at laboratory where they we	ere received.	
2. <u>Chain of Cust</u> a. COC i	and <u>(COC)</u> Information completed, signed, and da Yes No NA (Pl	ted (including released/release explain.)	eceived by)? Comments:
b. Correc	ct analyses requested? Yes No NA (Pl	lease explain.)	Comments:
3. <u>Laboratory Sa</u> a. Sampl	ample Receipt Documentation e/cooler temperature documented and Yes No NA (Plot)	within range at receipt (4 lease explain.)	$4^{\circ} \pm 2^{\circ}$ C)? Comments:
laborator temperat	ry slightly below the 2°C criteria due t ures within a narrow temperature rang	o the inherent imprecisio ge using frozen gel ice for	n of achieving stable cooler r cooling.

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b.	Sample preservation	acceptable –	acidified waters, Methanol preserv	ed VOC soil (GRO, BTEX,
	Volatile Chlorinated	Solvents, etc.	)? NA (Please explain.)	Comments:
c.	Sample condition doc	cumented – b No [	roken, leaking (Methanol), zero he NA (Please explain.)	adspace (VOC vials)? Comments:
S	ample condition docur	nented as acc	eptable.	
d.	If there were any disc containers/preservation samples, etc.?	erepancies, w	ere they documented? For example mperature outside of acceptable rate	e, incorrect sample nge, insufficient or missing
	∐ Yes 🖂	No	NA (Please explain.)	Comments:
1	No discrepancies noted			
e.	Data quality or usabil	ity affected?	(Please explain.) Comments:	
Ν	No affected data.			
Case	Narrativa			
<u>cuse 1</u> a.	Present and understar $\square$ Yes	ndable? No [	NA (Please explain.)	Comments:
b.	Discrepancies, errors	or QC failur No [	es identified by the lab? NA (Please explain.)	Comments:
(	CCV, LCS/LCSD, and	MS/MSD Q	C failures identified in case narrativ	ve.
c.	Were all corrective ac	ctions docum	ented? NA (Please explain.)	Comments:
Ι	Data flagged, no correc	tive actions of	otherwise identified.	
d.	What is the effect on	data quality/	usability according to the case narr Comments:	ative?
Affect	ed sample results were	qualified.		
Samul	es Results			
a.	Correct analyses perf	ormed/report No [	ed as requested on COC? NA (Please explain.)	Comments:

5.

4.

			LNG Facilities Groundwater Quality U	Confidential Sampling and Testing Report - Event 2 SAL-FG-GRZZZ-00-002016-004 Rev. 0
b.	All applicable h	olding times n	net?	Comments:
c.	All soils reporte	ed on a dry wei	ght basis? MA (Please explain.)	Comments:
(	Only water sampl	es were includ	ed in this work order.	
d.	Are the reported project?	PQLs less that	an the Cleanup Level or the minim $\Box$ NA (Places explain)	um required detection level for th
	Yes, except for and table 4.	3,3'-Dichlorober	nzidine and N-Nitrosodi-n-propylamine	e, see QAR reporting limits section
e.	Data quality or	usability affect	ted? Comments:	
-	Yes, see QAR rep	orting limits sec	tion.	
a.	Method Blank i. One met Yes	thod blank repo	orted per matrix, analysis and 20 s	amples? Comments:
	ii. All metł ⊠ Yes	nod blank resul	lts less than PQL?	Comments:
	iii. If above	PQL, what sa	mples are affected? Comme	nts:
lo aff	ected samples.			
	iv. Do the a	iffected sample	e(s) have data flags and if so, are th NA (Please explain.)	ne data flags clearly defined? Comments:
١	No affected samp	les, no data fla	gged.	
	v. Data qua	ality or usabilit	ty affected? (Please explain.) Comme	nts:
No aff	ected data			

6.

		LNG Facilities Groundwater Quality U	Confidential Sampling and Testing Report - Event 2 SAL-FG-GRZZZ-00-002016-004 Rev. 0
b. l	Laboratory Control Sample/D	uplicate (LCS/LCSD)	16-Dec-16
	i. Organics – One LCS/L required per AK metho	CSD reported per matrix, analysis	and 20 samples? (LCS/LCSD
	Yes No	NA (Please explain.)	Comments:
	ii. Metals/Inorganics – on samples?	ne LCS and one sample duplicate r	eported per matrix, analysis and
	Yes No	NA (Please explain.)	Comments:
No	inorganic analysis.		
	<ul> <li>iii. Accuracy – All percent</li> <li>And project specified I</li> <li>AK102 75%-125%, All</li> <li>□ Yes  ∑ No</li> </ul>	t recoveries (%R) reported and wit DQOs, if applicable. (AK Petroleu K103 60%-120%; all other analyse NA (Please explain.)	thin method or laboratory limits? m methods: AK101 60%-120%, es see the laboratory QC pages) Comments:
Spo	oradic LCS failures encounter	ed, see QAR LCS/LCSD section a	nd attachment 3.
Se	other analyses see the Yes No e QAR attachment 3.	and of sample/sample duplicate. laboratory QC pages)	Comments:
	v. If %R or RPD is outsic	le of acceptable limits, what samp	les are affected?
See OAI	R attachment 3.		
<u> </u>			
	vi. Do the affected sample ∑ Yes ☐ No	e(s) have data flags? If so, are the c NA (Please explain.)	lata flags clearly defined? Comments:
See QAI	R attachment 3 for validation	flags.	
	vii. Data quality or usabilit	ty affected? (Use comment box to	explain.)
Se 4-C	e QAR LCS/LCSD section us Chloroaniline were rejected as	sability discussion, results for analy unusable.	ytes 3,3'-Dichlorobenzidine and
c. S	Surrogates – Organics Only		
	i. Are surrogate recoverie	es reported for organic analyses – NA (Please explain.)	field, QC and laboratory samples Comments:
Su	rrogates reported.		
ion 2.7		Page 4 of 7	

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ii.	Accuracy – All percent recoveries (%R) reported and within method or laboratory limits?
	And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other
	analyses see the laboratory report pages)

Xes Yes	🗌 No	NA (Please explain.)	Comments:	

No surrogate outliers.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined?

Yes	🗌 No	$\square$
-----	------	-----------

 $\overrightarrow{NA}$  (Please explain.)

Comments:

|--|

iv. Data quality or usability affected? (Use the comment box to explain.)

Comments:

No affected samples.

- d. Trip blank Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil
  - i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

	<u> </u>
🛛 Yes	🗌 No

NA (Please explain.)	Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below) No Comments:

$\boxtimes$	Yes
-------------	-----

NA (Please explain.)

iii. All results less than PQL? X Yes No NA (Please explain.)

Comments:

iv. If above PQL, what samples are affected?

Comments:

Not applicable, all TB results below PQL.

v. Data quality or usability affected? (Please explain.)

Comments:

No impact.

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e. F	ield Duplicate				10-Dec-10
	i. One field	d duplicate subn	nitted per matrix, analysis and NA (Please explain.)	l 10 project samples? Comments:	
The satis	field duplicat sfied the requir	e sample freque ed frequency of	ency is presented below in one per 10 samples or less pe	Table 8 of the QAR.er matrix and analyte.	This project
	ii. Submitte Xes	ed blind to lab?	NA (Please explain.)	Comments:	
Par	ent Sample and	d Field Duplicat	e Pairs are presented in Table	7 of the QAR.	
	iii. Precision (Recom	n – All relative p mended: 30% wa	percent differences (RPD) less ater, 50% soil)	s than specified DQOs	?
	RPD (%	) = Absolute val	ue of: $(R_1-R_2)$		
			$((\mathbf{R}_1 + \mathbf{R}_2)/2)$ x 100		
	Who	$\mathbf{n} = \mathbf{D} = \mathbf{C}$ omento	$((\mathbf{R}_1 + \mathbf{R}_2)/2)$		
	whe	$R_1 = Sample$ $R_2 = Field D_1$	iplicate Concentration		
	Yes Yes	No	NA (Please explain.)	Comments:	
All	Field Duplicat	te RPD meet crit	eria.		
	iv. Data qua	llity or usability	affected? (Use the comment Com	box to explain why or with the second s	why not.)
No	affected data.				
f. D	Decontaminatio	n or Equipment	Blank (If not used explain wh	ıy).	
	Yes	🖂 No	NA (Please explain.)	Comments:	
Not	required, dedic	ated pump tubin	ng used to sample each well.		
	i. All resul	ts less than PQI	.?		
	Yes	🗌 No	NA (Please explain.)	Comments:	
No	equipment rin	se samples perf	ormed.		
	ii. If above	PQL, what sam	ples are affected?		
			Com	ments:	
No	affected data.				

iii. Data quality or usability affected? (Please explain.)

No affected data.

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a	16-Dec-16
Comments:	

# 7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a.	Defined and ap	opropriate?			
	Yes	No	NA (Please explain.)	Comments:	
<u> </u>					

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

### **Laboratory Data Review Checklist**

Completed by:	Jason Gray
Title:	Project Chemist Date: November 9, 2016
CS Report Name: Consultant Firm:	Event 2 Sampling Kenai Wells       Report Date:       October 14, 2016         Groundwater       SLR International Corporation
Laboratory Name	E Test America, Tacoma Laboratory Report Number: 580-62759
ADEC File Numb	ber: NA ADEC RecKey Number: NA
1. <u>Laboratory</u> a. Did an	ADEC CS approved laboratory receive and <u>perform</u> all of the submitted sample analyses? Yes No NA (Please explain.) Comments:
Samples	analyzed by Test America Tacoma.
b. If the s laborat	samples were transferred to another "network" laboratory or sub-contracted to an alternate tory, was the laboratory performing the analyses ADEC CS approved? ] Yes Do No NA (Please explain.) Comments:
2. <u>Chain of Cust</u> a. COC i	ody (COC)         .nformation completed, signed, and dated (including released/received by)?         Yes       No       NA (Please explain.)       Comments:
b. Correc	xt analyses requested? Yes INO INA (Please explain.) Comments:
3. <u>Laboratory Sa</u> a. Sampl Table 1 laborator temperati	umple Receipt Documentatione/cooler temperature documented and within range at receipt $(4^\circ \pm 2^\circ C)$ ?Yes $\square$ No $\square$ NA (Please explain.)Comments:of the QAR provides a sample receipt summary. Project coolers were received at the ry slightly below the 2°C criteria due to the inherent imprecision of achieving stable cooler ures within a narrow temperature range using frozen gel ice for cooling.

				LNG Facilities Groundwater Qualit ل	Confidential y Sampling and Testing Report - Event 2 JSAL-FG-GRZZZ-00-002016-004 Rev. 0 16 Doc 16
1	b.	Sample preserva Volatile Chlorina	tion acceptabl ate <u>d Solvents</u> ,	e – acidified waters, Methanol preetc.)?	eserved VOC soil (GRO, BTEX,
		Yes Yes	🗌 No	NA (Please explain.)	Comments:
(	c.	Sample condition	n documented	<ul> <li>broken, leaking (Methanol), ze</li> <li>NA (Please explain.)</li> </ul>	ro headspace (VOC vials)? Comments:
	S	ample condition d	locumented as	acceptable.	
(	d.	If there were any containers/preser samples, etc.?	v discrepancies rvation, sampl	s, were they documented? For exa e temperature outside of acceptab	ample, incorrect sample le range, insufficient or missing
		Yes	🔀 No	NA (Please explain.)	Comments:
	N	lo discrepancies r	noted.		
(	e.	Data quality or u	sability affect	ed? (Please explain.) Comme	ents:
	N	lo affected data.			
Case	0 N	Iorrotivo			
<u>Cast</u>	a.	Present and unde	erstandable?	NA (Please explain.)	Comments:
1	b.	Discrepancies, e	rrors or QC fa	ilures identified by the lab?	Comments:
	0	CCV and LCS/LC	SD QC failure	es identified in case narrative.	
(	c.	Were all correcti	ve actions doo	cumented? X NA (Please explain.)	Comments:
	Γ	Data flagged, no c	orrective actio	ns otherwise identified.	
(	d.	What is the effect	et on data qual	ity/usability according to the case Comme	e narrative? ents:
Affe	ecte	ed sample results	were qualified	l.	
Sam	n <u>pl</u> a.	es Results Correct analyses ⊠ Yes	performed/rej	ported as requested on COC?	Comments:
		_		• · ·	

5.

4.

h	All applicable holding times mot?	LNG Facilities Groundwater Quality Samplir USAL-FG	Confidential ng and Testing Report - Event 2 -GRZZZ-00-002016-004 Rev. 0 16-Dec-16	
0.	$\square$ Yes $\square$ No [	NA (Please explain.)	Comments:	
L				
c.	All soils reported on a dry weight l	basis? ⊠ NA (Please explain.)	Comments:	
	Only water samples were included in	n this work order.		
d.	. Are the reported PQLs less than th project?	e Cleanup Level or the minimum rea	quired detection level for the	
	$\square$ Yes $\square$ No [	NA (Please explain.)	Comments:	
	Yes, except for 3,3'-Dichlorobenzidin limits section and table 4.	e and N-Nitrosodi-n-propylamine in all	samples, see QAR reporting	
e.	. Data quality or usability affected?	Comments:		
	Yes, see QAR reporting limits section.			
a.	. Method Blank i. One method blank reported ∑ Yes ☐ No [	l per matrix, analysis and 20 samples NA (Please explain.)	s? Comments:	
Г	ii. All method blank results le ☐ Yes ☐ No [	ss than PQL? NA (Please explain.)	Comments:	
L	iii. If above PQL, what sample	es are affected? Comments:		
	No field sample data affected.			
	iv. Do the affected sample(s) h	nave data flags and if so, are the data ⊠ NA (Please explain.)	flags clearly defined? Comments:	
	No field sample data affected, no dat	ta flagged.		
	v. Data quality or usability af	fected? (Please explain.) Comments:		
	No affected data.			

b. Laboratory Control Sample/Duplicate (LCS/LCSD)       16-De-16         i. Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per SW846)       Image: Image: Comments:         ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and samples?       Image: Comments:         iii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and samples?       Image: Comments:         iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits?       And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)         If Yes       No       Image: Comments:         Sporadic LCS failures encountered for 3,3'-Dichlorobenzidine, Hexachlorocyclopentadiene and 4-Chloroaniline, see QAR attachment 3.       Comments:         iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; a other analyses see the laboratory QC pages)         If Yes       No       Image: Comments:         see QAR attachment 3.       v. If %R or RPD is outside of acceptable limits, what samples are affected?         Ves       No       Image: Comments:         ee QAR attachment 3.       vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?         V		LNG Facilities Groundwater Quality Samp USAL-F	Confidential ling and Testing Report - Event 2 G-GRZZZ-00-002016-004 Rev. 0
<ol> <li>Organics – One LCS/LCSD reported per matrix, analysis and 20 samples? (LCS/LCSD required per AK methods, LCS required per SW846)</li> <li>Yes No NA (Please explain.) Comments:</li> <li>ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and samples?</li> <li>Yes No XA (Please explain.) Comments:</li> <li>No inorganic analysis.</li> <li>iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)</li> <li>Yes Xo No NA (Please explain.) Comments:</li> <li>Sporadic LCS failures encountered for 3,3'-Dichlorobenzidine, Hexachlorocyclopentadiene and 4-Chloroaniline, see QAR attachment 3.</li> <li>iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; a other analyses see the laboratory QC pages)</li> <li>Yes No No NA (Please explain.) Comments:</li> <li>See QAR attachment 3.</li> <li>v. If %R or RPD is outside of acceptable limits, what samples are affected? Comments:</li> <li>ee QAR attachment 3 for validation flags.</li> <li>vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? Yes No No NA (Please explain.) Comments:</li> <li>see QAR LCS/LCSD section of usability discussion and rejected results for analytes 3,3'-Dichlorobenzidine and 4-Chloroaniline.</li> <li>c. Surrogates – Organics Only</li> <li>i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples X is No No NA (Please explain.) Comments:</li> </ol>	b. La	Laboratory Control Sample/Duplicate (LCS/LCSD)	16-Dec-16
Yes       No       NA (Please explain.)       Comments:         ii.       Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and samples?       No         Yes       No       NA (Please explain.)       Comments:         No inorganic analysis.       iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits?         And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK103 60%-120%; all other analyses see the laboratory QC pages)         Yes       No       NA (Please explain.)       Comments:         Sporadic LCS failures encountered for 3,3'-Dichlorobenzidine, Hexachlorocyclopentadiene and 4-Chloroaniline, see QAR attachment 3.       iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; a other analyses see the laboratory QC pages)         Yes       No       NA (Please explain.)       Comments:         See QAR attachment 3.       v. If %R or RPD is outside of acceptable limits, what samples are affected?       Comments:         ze QAR attachment 3.       vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?       No         Yes       No       NA (Please explain.)       Comments:         ze QAR attachment 3 for validation flags.       vii. Data quality or usability affected		i. Organics – One LCS/LCSD reported per matrix, analysis and required per AK methods, LCS required per SW846)	20 samples? (LCS/LCSD
ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and samples?         Yes       No       NA (Please explain.)       Comments:         No inorganic analysis.       iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 50%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)         Yes       No       NA (Please explain.)       Comments:         Sporadic LCS failures encountered for 3,3'-Dichlorobenzidine, Hexachlorocyclopentadiene and 4-Chloroaniline, see QAR attachment 3.       iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; a other analyses see the laboratory QC pages)         Yes       No       NA (Please explain.)       Comments:         See QAR attachment 3.       .       .       .         v. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; a other analyses see the laboratory C pages)         Yes       No       NA (Please explain.)       Comments:         See QAR attachment 3.       .       .       .       .         vi. Do the affected sample(s) have data flags? If so, are th		Yes No NA (Please explain.)	Comments:
<ul> <li>ii. Metals/Inorganics – one LCS and one sample duplicate reported per matrix, analysis and samples?</li> <li>Yes</li> <li>No</li> <li>NA (Please explain.)</li> <li>Comments:</li> <li>No inorganic analysis.</li> <li>iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK103 60%-120%; all other analyses see the laboratory QC pages)</li> <li>Yes</li> <li>Yes</li> <li>No</li> <li>No</li> <li>NA (Please explain.)</li> <li>Comments:</li> </ul> Sporadic LCS failures encountered for 3,3'-Dichlorobenzidine, Hexachlorocyclopentadiene and 4-Chloroaniline, see QAR attachment 3. <ul> <li>iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; a other analyses see the laboratory QC pages) <ul> <li>Yes</li> <li>Yes</li> <li>No</li> <li>NA (Please explain.)</li> <li>Comments:</li> </ul> See QAR attachment 3. <ul> <li>v. If %R or RPD is outside of acceptable limits, what samples are affected?</li> <li>Comments:</li> </ul> see QAR attachment 3. <ul> <li>vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?</li> <li>Yes</li> <li>No</li> <li>NA (Please explain.)</li> <li>Comments:</li> </ul> see QAR attachment 3 for validation flags. <ul> <li>vii. Data quality or usability affected? (Use comment box to explain.)</li> </ul> See QAR LCS/LCSD section of usability discussion and rejected results for analytes 3,3'-Dichlorobenzidine and 4-Chloroaniline. c. Surrogates – Organics Only <ul> <li>i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples</li> <li>Yes</li> <li>No</li> <li>NA (Please explain.)</li> </ul> comments: Surrogates reported. </li> </ul>			
□ Yes'       □ No       ⊠ NA (Please explain.)       Comments:         No inorganic analysis.		ii. Metals/Inorganics – one LCS and one sample duplicate report samples?	ed per matrix, analysis and 2
No inorganic analysis.         iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)         □ Yes       ○ No       ○ NA (Please explain.)       Comments:         Sporadic LCS failures encountered for 3,3'-Dichlorobenzidine, Hexachlorocyclopentadiene and 4- Chloroaniline, see QAR attachment 3.       iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; a other analyses see the laboratory QC pages)         □ Yes       ○ No       ○ NA (Please explain.)         is eq QAR attachment 3.       · Yes       ○ No         v. If %R or RPD is outside of acceptable limits, what samples are affected? Comments:       · If %R or RPD is outside of acceptable limits, what samples are affected?         ee QAR attachment 3.       · Yes       No       ○ NA (Please explain.)         vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?       · Yes         ii. Data quality or usability affected? (Use comment box to explain.)       · Comments:         ee QAR LCS/LCSD section of usability discussion and rejected results for analytes 3,3'- Dichlorobenzidine and 4-Chloroaniline.       · Surrogates – Organics Only         i. Are surrogate recoveries reported for organic anal		$\Box Yes \Box No \qquad \qquad \boxtimes NA (Please explain.)$	Comments:
<ul> <li>iii. Accuracy – All percent recoveries (%R) reported and within method or laboratory limits? And project specified DQOs, if applicable. (AK Petroleum methods: AK101 60%-120%, AK102 75%-125%, AK103 60%-120%; all other analyses see the laboratory QC pages)</li> <li>Yes No No NA (Please explain.) Comments:</li> <li>Sporadic LCS failures encountered for 3,3'-Dichlorobenzidine, Hexachlorocyclopentadiene and 4- Chloroaniline, see QAR attachment 3.</li> <li>iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; a other analyses see the laboratory QC pages)</li> <li>Yes No No NA (Please explain.) Comments:</li> <li>See QAR attachment 3.</li> <li>v. If %R or RPD is outside of acceptable limits, what samples are affected? Comments:</li> <li>ee QAR attachment 3.</li> <li>vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? Xi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?</li> <li>Yes No No NA (Please explain.) Comments:</li> <li>ee QAR attachment 3 for validation flags.</li> <li>vii. Data quality or usability affected? (Use comment box to explain.)</li> <li>See QAR LCS/LCSD section of usability discussion and rejected results for analytes 3,3'- Dichlorobenzidine and 4-Chloroaniline.</li> <li>c. Surrogates – Organics Only</li> <li>i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples NA (Please explain.) Comments:</li> </ul>	No i	o inorganic analysis.	
Sporadic LCS failures encountered for 3,3'-Dichlorobenzidine, Hexachlorocyclopentadiene and 4-Chloroaniline, see QAR attachment 3.         iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; a other analyses see the laboratory QC pages)         □ Yes       ○ NO       NA (Please explain.)       Comments:         See QAR attachment 3.       v. If %R or RPD is outside of acceptable limits, what samples are affected? Comments:         ee QAR attachment 3.       vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? Comments:         ee QAR attachment 3       No       NA (Please explain.)       Comments:         ee QAR attachment 3 for validation flags.       vii. Data quality or usability affected? (Use comment box to explain.)       See QAR LCS/LCSD section of usability discussion and rejected results for analytes 3,3'-Dichlorobenzidine and 4-Chloroaniline.         c. Surrogates – Organics Only       i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples [\vee Yes ] No         in Na (Please explain.)       Comments:		<ul> <li>iii. Accuracy – All percent recoveries (%R) reported and within a And project specified DQOs, if applicable. (AK Petroleum m AK102 75%-125%, AK103 60%-120%; all other analyses see ☐ Yes</li></ul>	nethod or laboratory limits? ethods: AK101 60%-120%, e the laboratory QC pages) Comments:
<ul> <li>iv. Precision – All relative percent differences (RPD) reported and less than method or laboratory limits? And project specified DQOs, if applicable. RPD reported from LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK Petroleum methods 20%; a other analyses see the laboratory QC pages)</li> <li>Yes No No NA (Please explain.) Comments:</li> <li>See QAR attachment 3.</li> <li>v. If %R or RPD is outside of acceptable limits, what samples are affected? Comments:</li> <li>ee QAR attachment 3.</li> <li>vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? Comments:</li> <li>ee QAR attachment 3 for validation flags.</li> <li>vii. Data quality or usability affected? (Use comment box to explain.)</li> <li>See QAR LCS/LCSD section of usability discussion and rejected results for analytes 3,3'-Dichlorobenzidine and 4-Chloroaniline.</li> <li>c. Surrogates – Organics Only</li> <li>i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples Y es No NA (Please explain.)</li> </ul>	Spor Chlo	boradic LCS failures encountered for 3,3'-Dichlorobenzidine, Hexachl nloroaniline, see QAR attachment 3.	orocyclopentadiene and 4-
See QAR attachment 3.         v. If %R or RPD is outside of acceptable limits, what samples are affected? Comments:         ee QAR attachment 3.         vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? M Yes         Mo       NA (Please explain.)         ce QAR attachment 3 for validation flags.         vii. Data quality or usability affected? (Use comment box to explain.)         See QAR LCS/LCSD section of usability discussion and rejected results for analytes 3,3'-Dichlorobenzidine and 4-Chloroaniline.         c. Surrogates – Organics Only         i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples         M Yes       No         NA (Please explain.)         Comments:		<ul> <li>iv. Precision – All relative percent differences (RPD) reported an laboratory limits? And project specified DQOs, if applicable. LCS/LCSD, MS/MSD, and or sample/sample duplicate. (AK other analyses see the laboratory QC pages)</li> <li>Yes No NA (Please explain.)</li> </ul>	d less than method or RPD reported from Petroleum methods 20%; al Comments:
v. If %R or RPD is outside of acceptable limits, what samples are affected? Comments: ee QAR attachment 3. vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined? ⊠ Yes No NA (Please explain.) Comments: ee QAR attachment 3 for validation flags. vii. Data quality or usability affected? (Use comment box to explain.) See QAR LCS/LCSD section of usability discussion and rejected results for analytes 3,3'-Dichlorobenzidine and 4-Chloroaniline. c. Surrogates – Organics Only i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples ⊠ Yes No NA (Please explain.) Comments:	See	ee QAR attachment 3.	
ee QAR attachment 3.         vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?         Yes       No       NA (Please explain.)         comments:         ee QAR attachment 3 for validation flags.         vii. Data quality or usability affected? (Use comment box to explain.)         See QAR LCS/LCSD section of usability discussion and rejected results for analytes 3,3'-         Dichlorobenzidine and 4-Chloroaniline.         c. Surrogates – Organics Only         i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples         Yes       No         NA (Please explain.)         Comments:		v. If %R or RPD is outside of acceptable limits, what samples an Comments:	re affected?
vi. Do the affected sample(s) have data flags? If so, are the data flags clearly defined?         □ Yes       □ No       □ NA (Please explain.)       Comments:         ee QAR attachment 3 for validation flags.         vii. Data quality or usability affected? (Use comment box to explain.)         See QAR LCS/LCSD section of usability discussion and rejected results for analytes 3,3'-         Dichlorobenzidine and 4-Chloroaniline.         c. Surrogates – Organics Only         i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples         □ Yes       □ No         □ NA (Please explain.)       Comments:	ee QAR	R attachment 3.	
ee QAR attachment 3 for validation flags. vii. Data quality or usability affected? (Use comment box to explain.) See QAR LCS/LCSD section of usability discussion and rejected results for analytes 3,3'- Dichlorobenzidine and 4-Chloroaniline. c. Surrogates – Organics Only i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples ⊠ Yes □ No □ NA (Please explain.) Comments: Surrogates reported.		vi. Do the affected sample(s) have data flags? If so, are the data f $\boxtimes$ Yes $\square$ No $\square$ NA (Please explain.)	lags clearly defined? Comments:
<ul> <li>vii. Data quality or usability affected? (Use comment box to explain.)</li> <li>See QAR LCS/LCSD section of usability discussion and rejected results for analytes 3,3'- Dichlorobenzidine and 4-Chloroaniline.</li> <li>c. Surrogates – Organics Only <ul> <li>i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples</li> <li>i. Yes</li> <li>i. No</li> <li>i. NA (Please explain.)</li> </ul> </li> <li>Comments:</li> </ul>	ee QAR	R attachment 3 for validation flags.	
See QAR LCS/LCSD section of usability discussion and rejected results for analytes 3,3'-         Dichlorobenzidine and 4-Chloroaniline.         c. Surrogates – Organics Only         i. Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples $\boxtimes$ Yes $\square$ NA (Please explain.)         Comments:         Surrogates reported.		vii. Data quality or usability affected? (Use comment box to expla	ain.)
<ul> <li>c. Surrogates – Organics Only         <ol> <li>Are surrogate recoveries reported for organic analyses – field, QC and laboratory samples</li> <li>Yes</li> <li>No</li> <li>NA (Please explain.)</li> </ol> </li> <li>Comments:</li> </ul>	See Dich	ee QAR LCS/LCSD section of usability discussion and rejected result chlorobenzidine and 4-Chloroaniline.	s for analytes 3,3'-
Surrogates reported.	c. Su	Surrogates – Organics Only i. Are surrogate recoveries reported for organic analyses – field Yes No NA (Please explain.)	, QC and laboratory samples Comments:
	Surr	urrogates reported.	

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ii.	Accuracy – All percent recoveries (%R) reported and within method or laboratory limits?
	And project specified DQOs, if applicable. (AK Petroleum methods 50-150 %R; all other
	analyses see the laboratory report pages)

🛛 Yes	🗌 No	NA (Please explain.)	Comments:	

No surrogate outliers.

iii. Do the sample results with failed surrogate recoveries have data flags? If so, are the data flags clearly defined? 

]Yes	🗌 No	
------	------	--

 $\times$  NA (Please explain.)

Comments:

No outliers.

iv. Data quality or usability affected? (Use the comment box to explain.)

Comments:

No affected samples.

- d. Trip blank Volatile analyses only (GRO, BTEX, Volatile Chlorinated Solvents, etc.): Water and Soil
  - i. One trip blank reported per matrix, analysis and for each cooler containing volatile samples? (If not, enter explanation below.)

	_
🛛 Yes	🗌 No

NA (Please explain.)	Comments:

ii. Is the cooler used to transport the trip blank and VOA samples clearly indicated on the COC? (If not, a comment explaining why must be entered below) No

🖂 Yes	
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NA (Please explain.)

- Comments:
- iii. All results less than PQL? X Yes NA (Please explain.) No

Comments:

iv. If above PQL, what samples are affected?

Not applicable, all TB results below PQL.

v. Data quality or usability affected? (Please explain.)

Comments:

No impact.

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e. F	ield Duplicate			То-Dec-То
	i. One fiel Yes	d duplicate subr	nitted per matrix, analysis and 1	0 project samples? Comments:
The satis	field duplicat	e sample frequed frequency of	ency is presented below in Ta one per 10 samples or less per	ble 8 of the QAR. This project matrix and analyte.
	ii. Submitte	ed blind to lab?	NA (Please explain.)	Comments:
Par	ent Sample and	d Field Duplicat	e Pairs are presented in Table 7	of the QAR.
	iii. Precisio (Recom	n – All relative j mended: 30% w	percent differences (RPD) less t ater, 50% soil)	han specified DQOs?
	RPD (%	) = Absolute va	lue of: $\frac{(R_1-R_2)}{2} \times 100$	
			$((R_1+R_2)/2)$	
	Whe	ere $R_1 = $ Sample	Concentration	
	Yes Yes	$R_2 = Field D$ $\square No$	NA (Please explain.)	Comments:
All	Field Duplicat	te RPD meet cri	teria.	
	iv. Data qua	ality or usability	affected? (Use the comment bo	ents:
No	affected data			
110				
f. D	econtaminatio	n or Equipment	Blank (If not used explain why	).
	Yes	🖂 No	NA (Please explain.)	Comments:
Not	required, dedic	cated pump tubi	ng used to sample each well.	
	i. All resul	lts less than PQI	_?	
	Yes	🗌 No	NA (Please explain.)	Comments:
No	equipment rir	nse samples perf	formed.	
	ii. If above	PQL, what sam	ples are affected?	
			Comm	ents:
No	affected data.			

iii. Data quality or usability affected? (Please explain.)

No affected data.

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Comments:	

# 7. Other Data Flags/Qualifiers (ACOE, AFCEE, Lab Specific, etc.)

a.	Defined and ap	opropriate?			
	Yes	No	NA (Please explain.)	Comments:	
<u> </u>					

#### Attachment 2

LCS/LCSD Qualified Sample Data Table

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		Field Sample	Analysis			Result	Percent	LCS/LCSD	LCS/LCSD		LCS/LCSD	
SDG	Lab Sample ID	Identification	Method	Prep Date	Analyte	(mg/L)	Recovery	LCL	UCL	RPD	RPD Limit	Flag
580-62531-1	LCS 580-227748/5	ICS	8260C	09/19/2016 10.16	1 1 2-Trichloroethane	0.00704	70	69	135	30	24	
580-62531-1	LCSD 580-227748/6		8260C	09/19/2016 10:45	1 1 2-Trichloroethane	0.0095	95	69	135	30	24	
580-62531-1	580-62531-4	PO-W1-0916	82600	09/19/2016 16:56	1 1 2-Trichloroethane	ND [0 001]						
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	1.1.2-Trichloroethane	ND [0.001]						
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	1,1,2-Trichloroethane	ND [0.001]						
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	1,1,2-Trichloroethane	ND [0.001]						
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	1,1,2-Trichloroethane	ND [0.001]						
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	1,1-Dichloroethene	0.0119	118	70	117	16	21	
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	1,1-Dichloroethene	0.0101	100	70	117	16	21	
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	1,1-Dichloroethene	ND [0.002]						
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	1,1-Dichloroethene	ND [0.002]						
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	1,1-Dichloroethene	ND [0.002]						
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	1,1-Dichloroethene	ND [0.002]						
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	1,1-Dichloroethene	ND [0.002]						
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	1,1-Dichloropropene	0.0124	124	75	120	21	20	
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	1,1-Dichloropropene	0.0101	101	75	120	21	20	
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	1,1-Dichloropropene	ND [0.003]						
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	1,1-Dichloropropene	ND [0.003]						
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	1,1-Dichloropropene	ND [0.003]						
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	1,1-Dichloropropene	ND [0.003]						
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	1,1-Dichloropropene	ND [0.003]						
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	1,2,4-Trimethylbenzene	0.0118	118	75	121	20	16	
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	1,2,4-Trimethylbenzene	0.00962	96	75	121	20	16	
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	1,2,4-Trimethylbenzene	ND [0.003]						
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	1,2,4-Trimethylbenzene	ND [0.003]						
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	1,2,4-Trimethylbenzene	ND [0.003]						
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	1,2,4-Trimethylbenzene	ND [0.003]						
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	1,2,4-Trimethylbenzene	ND [0.003]						
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	1,2-Dichloroethane	0.00841	84	58	143	23	17	
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	1,2-Dichloroethane	0.0106	106	58	143	23	17	
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	1,2-Dichloroethane	ND [0.001]						
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	1,2-Dichloroethane	ND [0.001]						
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	1,2-Dichloroethane	ND [0.001]						
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	1,2-Dichloroethane	ND [0.001]						
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	1,2-Dichloroethane	ND [0.001]						
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	1,3,5-Trimethylbenzene	0.0117	116	75	122	22	14	
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	1,3,5-Trimethylbenzene	0.00935	93	75	122	22	14	
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	1,3,5-Trimethylbenzene	ND [0.003]						
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	1,3,5-Trimethylbenzene	ND [0.003]						
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	1,3,5-Trimethylbenzene	ND [0.003]						
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	1,3,5-Trimethylbenzene	ND [0.003]						ļ
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	1,3,5-Trimethylbenzene	ND [0.003]						
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	2,2-Dichloropropane	0.0128	128	50	140	24	20	
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	2,2-Dichloropropane	0.0101	101	50	140	24	20	
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	2,2-Dichloropropane	ND [0.003]						
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	2,2-Dichloropropane	ND [0.003]						
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	2,2-Dichloropropane	ND [0.003]						<b> </b>
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	2,2-Dichloropropane	ND [0.003]						<b> </b>
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	2,2-Dichloropropane	ND [0.003]						ļ
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	2-Chlorotoluene	0.0119	119	69	125	22	15	
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	2-Chlorotoluene	0.00959	96	69	125	22	15	<b> </b>
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	2-Chlorotoluene	ND [0.003]						Ļ
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	2-Chlorotoluene	ND [0.003]						<b> </b>
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	2-Chlorotoluene	ND [0.003]						──
580-62531-1	580-62531-1	1PW-2-0916	8260C	09/19/2016 15:59	2-Chlorotoluene	ND [0.003]						└───
580-62531-1	580-62531-3	1PW-9-0916	8260C	09/19/2016 16:27	2-Chlorotoluene	ND [0.003]	~ .			~~		<u> </u>
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	2-Hexanone	0.0171	34	20	150	95	30	<b> </b>
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	2-Hexanone	0.048	96	20	150	95	30	Ļ
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	2-Hexanone	ND [0.02]						ļ
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	2-Hexanone	ND [0.02]						L
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	2-Hexanone	ND [0.02]						<u> </u>
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	2-Hexanone	ND [0.02]						<b> </b>
580-62531-1	580-62531-3	1PW-9-0916	8260C	09/19/2016 16:27	2-Hexanone	ND [0.02]						<b> </b>
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	4-Chlorotoluene	0.0115	115	68	121	17	15	──
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	4-Chlorotoluene	0.00971	97	68	121	17	15	Ļ
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	4-Chlorotoluene	ND [0.002]						L
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	4-Chlorotoluene	ND [0.002]						<u> </u>
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	4-Chlorotoluene	ND [0.002]						──
580-62531-1	580-62531-1	TPW-2-0916	82600	09/19/2016 15:59	4-Chlorotoluene	ND [0.002]						<u> </u>
580-62531-1	580-62531-3	1PW-9-0916	8260C	09/19/2016 16:27	4-Chlorotoluene	ND [0.002]						<u> </u>
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	4-Isopropyltoluene	0.0118	118	66	120	17	13	──
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	4-Isopropyltoluene	0.00996	100	66	120	17	13	Ļ
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	4-Isopropyltoluene	ND [0.003]						<u> </u>
580-62531-1	580-62531-6	IB-2-0916	8260C	09/19/2016 12:39	4-Isopropyltoluene	ND [0.003]						└───
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	4-isopropyltoluene	ND [0.003]						──
580-62531-1	580-62531-1	1PW-2-0916	8260C	09/19/2016 15:59	4-isopropyitoluene	ND [0.003]						<u> </u>
580-62531-1	580-62531-3	1PW-9-0916	8260C	09/19/2016 16:27	4-isopropyltoluene	ND [0.003]	1	1	1		I	1

# Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0

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		Field Sample	Analysis			Result	Percent	LCS/LCSD	LCS/LCSD		LCS/LCSD	-
SDG	Lab Sample ID	Identification	Method	Prep Date	Analyte	(mg/L)	Recovery	LCL	UCL	RPD	RPD Limit	Flag
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	4-Methyl-2-pentanone	0.0186	37	20	150	86	30	
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	4-Methyl-2-pentanone	0.0464	93	20	150	86	30	
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	4-Methyl-2-pentanone	ND [0.015]						
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	4-Methyl-2-pentanone	ND [0.015]						
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	4-Methyl-2-pentanone	ND [0.015]						
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	4-Methyl-2-pentanone	ND [0.015]						
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	4-Methyl-2-pentanone	ND [0.015]						
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	Bromochloromethane	0.00918	92	65	120	18	17	
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	Bromochloromethane	0.011	109	65	120	18	17	
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	Bromochloromethane	ND [0.002]						
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	Bromochloromethane	ND [0.002]						
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	Bromochloromethane	ND [0.002]						ļ
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	Bromochloromethane	ND [0.002]						<b> </b>
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	Bromochloromethane	ND [0.002]						<b> </b>
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	Bromoform	0.00602	60	55	130	50	20	ļ
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	Bromoform	0.0101	100	55	130	50	20	
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	Bromoform	ND [0.001]						ļ
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	Bromoform	ND [0.001]						ļ
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	Bromoform	ND [0.001]						ļ
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	Bromoform	ND [0.001]						ļ
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	Bromoform	ND [0.001]						l
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	Chloroform	0.0125	125	80	119	13	15	ļ
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	Chloroform	0.0109	109	80	119	13	15	ļ
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	Chloroform	ND [0.005]						ļ
580-62531-1	580-62531-6	1B-2-0916	8260C	09/19/2016 12:39	Chloroform	ND [0.005]					ļ	<b> </b>
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	Chloroform	ND [0.005]						l
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	Chloroform	ND [0.005]						l
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	Chloroform	ND [0.005]	70	64	4.42	26	45	<b> </b>
580-62531-1	LCS 580-22/748/5	LCS	8260C	09/19/2016 10:16	Dibromomethane	0.00729	/3	61	142	36	15	l
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	Dibromomethane	0.0105	104	61	142	36	15	ļ
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	Dibromomethane	ND [0.001]						l
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	Dibromomethane	ND [0.001]						l
580-62531-1	580-62531-2	TPW-1-0916	82600	09/19/2016 19:20	Dibromomethane	ND [0.001]						
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	Dibromomethane	ND [0.001]						<b> </b>
580-62531-1	580-62531-3	1900-9-0916	82600	09/19/2016 16:27	Dibromomethane	ND [0.001]	110	75	110	22	14	
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	Ethylbenzene	0.012	119	75	119	22	14	<b> </b>
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	Ethylbenzene	0.0096	96	75	119	22	14	l
580-62531-1	580-62531-4	PQ-W1-0916	82600	09/19/2016 16:56	Ethylbenzene	ND [0.003]						<b> </b>
580-62531-1	580-62531-6	TB-2-0916	82600	09/19/2016 12:39	Ethylbenzene	ND [0.003]						l
580-62531-1	580-02531-2	TPW-1-0910	8200C	09/19/2010 19:20	Ethylbonzono	ND [0.003]						
580-62531-1	580-62531-3	TPW-2-0910	82600	09/19/2010 15:59	Ethylbenzene	ND [0.003]						
580-62531-1	1 CS E90 227749/E	10	82600	09/19/2010 10:27	Isopropylhonzono	0.0110	110	75	125	22	20	
580-02531-1	LCS 580-227748/5	LCS	02000	09/19/2010 10:10		0.0113	06	75	125	22	20	
580-62531-1	LCSD 580-227748/6	LCSD PO_W1_0016	8260C	09/19/2016 10:45	Isopropylbenzene	0.00957	96	75	125	22	20	
580-62531-1	500-02551-4	TP 2 0016	8260C	09/19/2016 10:50	Isopropylbenzene	ND [0.002]						
580-62531-1	580-62531-0	TD-2-0910	8260C	09/19/2016 12.39	Isopropylbenzene	ND [0.002]						
580-62531-1	580-62531-2	TPW-2-0916	8200C	09/19/2010 19:20	Isopropylbenzene	ND [0.002]						
580-62531-1	580-62531-3	TPW-9-0916	82600	09/19/2016 16:27	Isopropylbenzene	ND [0.002]						
580-62531-1	105 580-227748/5	10	82600	09/19/2016 10:16	Methyl tert-butyl ether	0.00777	78	65	125	20	18	
580-02551-1	100 590 227740/5		82600	09/19/2010 10:10	Mothyl tort butyl othor	0.00051	95	65	125	20	18	
580-62521 1	580-62521-1	PO-W/1-0016	82600	09/19/2010 10.45	Methyl tert-butyl ethor	ND [0 001]		0.5	222	20	10	<u> </u>
580-62531-1	580-62531-6	TB-2-0016	82600	09/19/2010 10:30	Methyl tert-butyl ether	ND [0.001]						
580-62531-1	580-62531-2	TPW-1-0916	82600	09/19/2016 19:20	Methyl tert-hutyl ether	ND [0.001]						<u> </u>
580-62531-1	580-62531-1	TPW-2-0916	82600	09/19/2016 15:59	Methyl tert-butyl ether	ND [0.001]						<u> </u>
580-62531-1	580-62531-3	TPW-9-0916	82600	09/19/2016 16:27	Methyl tert-butyl ether	ND [0.001]					<u> </u>	<u> </u>
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	m-Xvlene & p-Xvlene	0.0116	116	75	119	21	14	<u>.</u>
580-62531-1	LCSD 580-227748/6		82600	09/19/2016 10:45	m-Xylene & n-Xylene	0.00936	93	75	119	21	14	<u> </u>
580-62531-1	580-62531-4	PO-W1-0916	82600	09/19/2016 16:56	m-Xylene & n-Xylene	ND [0 003]			115			<u> </u>
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	m-Xylene & p-Xylene	ND [0.003]					t	<u> </u>
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	m-Xylene & p-Xylene	ND [0.003]						
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	m-Xylene & p-Xylene	ND [0.003]						
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	m-Xylene & p-Xylene	ND [0.003]						-
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	Naphthalene	0.00552	55	55	134	43	30	<u> </u>
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	Naphthalene	0.00858	86	55	134	43	30	<u> </u>
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	Naphthalene	ND [0.0021			•			<u> </u>
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	Naphthalene	ND [0.002]	1	1			1	<u> </u>
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	Naphthalene	ND [0.002]	1	1		-	1	<u> </u>
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	Naphthalene	ND [0.002]	1	1			1	<u> </u>
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	Naphthalene	ND [0.002]					İ	
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	N-Propylbenzene	0.0126	126	70	124	29	13	
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	N-Propylbenzene	0,00941	94	70	124	29	13	<u> </u>
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	N-Propylbenzene	ND [0.0031						<u> </u>
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	N-Propylbenzene	ND [0.003]					1	<u> </u>
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	N-Propylbenzene	ND [0.003]	1	1			t	
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	N-Propylbenzene	ND [0.003]					1	
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	N-Propylbenzene	ND [0.003]						1
		Field Sample	Analysis			Recult	Percent					
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SDG	Lab Sample ID	Identification	Method	Pren Date	Analyte	(mg/L)	Recovery	10		RPD	RPD Limit	Flag
500 62521 1	LCS E80 227749/E		82600	09/19/2016 10:16		0.0116	116	70	125	23	15	Tiug
580-02531-1	LCS 580-227748/5		8260C	09/19/2010 10:10	sec-Butylbenzene	0.00022	02	70	125	23	15	
580-62531-1	LCSD 580-227748/6	LCSD	8200C	09/19/2016 10:45	sec-Butylbenzene	0.00923	92	70	125	23	15	
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	sec-Butylbenzene	ND [0.003]						
580-62531-1	580-62531-6	TB-2-0916	82600	09/19/2016 12:39	sec-Butylbenzene	ND [0.003]						
580-62531-1	580-62531-2	TPW-1-0916	82600	09/19/2016 19:20	sec-Butylbenzene	ND [0.003]						
580-62531-1	560-02551-1	TPW-2-0910	8260C	09/19/2016 15.39	sec-Butylbenzene	ND [0.003]						
560-62531-1	560-02551-5	1900-9-0910	82000	09/19/2010 10.27	sec-Butyibelizelle	ND [0.005]	115	70	110	22	10	
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	styrene	0.0115	115	76	116	23	16	
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	Styrene	0.00918	92	76	116	23	16	
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	Styrene	ND [0.005]						
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	Styrene	ND [0.005]						
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	Styrene	ND [0.005]						
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	Styrene	ND [0.005]						
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	Styrene	ND [0.005]		=0				
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	t-Butylbenzene	0.0116	116	70	121	27	14	
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	t-Butylbenzene	0.00891	89	70	121	27	14	
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	t-Butylbenzene	ND [0.003]						
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	t-Butylbenzene	ND [0.003]						
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	t-Butylbenzene	ND [0.003]						
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	t-Butylbenzene	ND [0.003]						
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	t-Butylbenzene	ND [0.003]						
580-62531-1	LCS 580-227748/5	LCS	8260C	09/19/2016 10:16	trans-1,2-Dichloroethene	0.0127	126	72	113	18	21	
580-62531-1	LCSD 580-227748/6	LCSD	8260C	09/19/2016 10:45	trans-1,2-Dichloroethene	0.0106	106	72	113	18	21	
580-62531-1	580-62531-4	PQ-W1-0916	8260C	09/19/2016 16:56	trans-1,2-Dichloroethene	ND [0.003]						
580-62531-1	580-62531-6	TB-2-0916	8260C	09/19/2016 12:39	trans-1,2-Dichloroethene	ND [0.003]						
580-62531-1	580-62531-2	TPW-1-0916	8260C	09/19/2016 19:20	trans-1,2-Dichloroethene	ND [0.003]						
580-62531-1	580-62531-1	TPW-2-0916	8260C	09/19/2016 15:59	trans-1,2-Dichloroethene	ND [0.003]						
580-62531-1	580-62531-3	TPW-9-0916	8260C	09/19/2016 16:27	trans-1,2-Dichloroethene	ND [0.003]						
580-62531-1	LCS 580-227786/2-A	LCS	8270D	09/19/2016 11:31	2,4-Dinitrophenol	0.00139	35	24	139	47	35	
580-62531-1	LCSD 580-227786/3-A	LCSD	8270D	09/19/2016 11:31	2,4-Dinitrophenol	0.00223	56	24	139	47	35	
580-62531-1	580-62531-4	PQ-W1-0916	8270D	09/19/2016 11:31	2,4-Dinitrophenol	ND [0.0051]						
580-62531-1	580-62531-2	TPW-1-0916	8270D	09/19/2016 11:31	2,4-Dinitrophenol	ND [0.0051]						
580-62531-1	580-62531-1	TPW-2-0916	8270D	09/19/2016 11:31	2,4-Dinitrophenol	ND [0.0051]						
580-62531-1	580-62531-5	TPW-5-0916	8270D	09/19/2016 11:31	2,4-Dinitrophenol	ND [0.0051]						
580-62531-1	580-62531-3	TPW-9-0916	8270D	09/19/2016 11:31	2,4-Dinitrophenol	ND [0.0051]						
580-62531-1	LCS 580-227786/2-A	LCS	8270D	09/19/2016 11:31	3,3'-Dichlorobenzidine	ND [0.002]	0.7	20	121	32	35	R
580-62531-1	LCSD 580-227786/3-A	LCSD	8270D	09/19/2016 11:31	3,3'-Dichlorobenzidine	ND [0.002]	0.5	20	121	32	35	R
580-62531-1	580-62531-4	PQ-W1-0916	8270D	09/19/2016 11:31	3,3'-Dichlorobenzidine	ND [0.002]						R
580-62531-1	580-62531-2	TPW-1-0916	8270D	09/19/2016 11:31	3,3'-Dichlorobenzidine	ND [0.002]						R
580-62531-1	580-62531-1	TPW-2-0916	8270D	09/19/2016 11:31	3,3'-Dichlorobenzidine	ND [0.002]						R
580-62531-1	580-62531-5	TPW-5-0916	8270D	09/19/2016 11:31	3,3'-Dichlorobenzidine	ND [0.002]						R
580-62531-1	580-62531-3	TPW-9-0916	8270D	09/19/2016 11:31	3,3'-Dichlorobenzidine	ND [0.002]						R
580-62531-1	LCS 580-227786/2-A	LCS	8270D	09/19/2016 11:31	3-Nitroaniline	0.000291	15	22	124	123	35	
580-62531-1	LCSD 580-227786/3-A	LCSD	8270D	09/19/2016 11:31	3-Nitroaniline	ND [0.0004]	3	22	124	123	35	
580-62531-1	580-62531-4	PQ-W1-0916	8270D	09/19/2016 11:31	3-Nitroaniline	ND [0.0004]						QL
580-62531-1	580-62531-2	TPW-1-0916	8270D	09/19/2016 11:31	3-Nitroaniline	ND [0.0004]						QL
580-62531-1	580-62531-1	TPW-2-0916	8270D	09/19/2016 11:31	3-Nitroaniline	ND [0.00041]						QL
580-62531-1	580-62531-5	TPW-5-0916	8270D	09/19/2016 11:31	3-Nitroaniline	ND [0.00041]						QL
580-62531-1	580-62531-3	TPW-9-0916	8270D	09/19/2016 11:31	3-Nitroaniline	ND [0.00041]						QL
580-62531-1	LCS 580-227786/2-A	LCS	8270D	09/19/2016 11:31	4,6-Dinitro-2-methylphenol	0.00114	28	20	150	77	30	
580-62531-1	LCSD 580-227786/3-A	LCSD	8270D	09/19/2016 11:31	4,6-Dinitro-2-methylphenol	0.00256	64	20	150	77	30	
580-62531-1	580-62531-4	PQ-W1-0916	8270D	09/19/2016 11:31	4,6-Dinitro-2-methylphenol	ND [0.004]						
580-62531-1	580-62531-2	TPW-1-0916	8270D	09/19/2016 11:31	4,6-Dinitro-2-methylphenol	ND [0.004]					İ	
580-62531-1	580-62531-1	TPW-2-0916	8270D	09/19/2016 11:31	4,6-Dinitro-2-methylphenol	ND [0.0041]					İ	
580-62531-1	580-62531-5	TPW-5-0916	8270D	09/19/2016 11:31	4,6-Dinitro-2-methylphenol	ND [0.0041]	1	1				
580-62531-1	580-62531-3	TPW-9-0916	8270D	09/19/2016 11:31	4,6-Dinitro-2-methylphenol	ND [0.0041]	1	1				
580-62531-1	LCS 580-227786/2-A	LCS	8270D	09/19/2016 11:31	4-Chloroaniline	ND [0.0004]	1	20	110	18	35	R
580-62531-1	LCSD 580-227786/3-A	LCSD	8270D	09/19/2016 11:31	4-Chloroaniline	ND [0.0004]	1	20	110	18	35	R
580-62531-1	580-62531-4	PQ-W1-0916	8270D	09/19/2016 11:31	4-Chloroaniline	ND [0.0004]	-			~		R
580-62531-1	580-62531-2	TPW-1-0916	8270D	09/19/2016 11:31	4-Chloroaniline	ND [0.0004]						R
580-62531-1	580-62531-1	TPW-2-0916	8270D	09/19/2016 11:31	4-Chloroaniline	ND [0.00041	1	1			1	R
580-62531-1	580-62531-5	TPW-5-0916	8270D	09/19/2016 11:31	4-Chloroaniline	ND [0.00041	i					R
580-62531-1	580-62531-3	TPW-9-0916	8270D	09/19/2016 11:31	4-Chloroaniline	ND [0.00041					İ	R
580-62531-1	LCS 580-227786/2-A	LCS	8270D	09/19/2016 11:31	4-Nitroaniline	0.00119	60	40	118	116	20	
580-62531-1	LCSD 580-227786/3-4	LCSD	8270D	09/19/2016 11:31	4-Nitroaniline	0,000317	16	40	118	116	20	
580-62531-1	580-62531-4	PQ-W1-0916	8270D	09/19/2016 11:31	4-Nitroaniline	ND [0.00061]				•		QL
580-62531-1	580-62531-2	TPW-1-0916	8270D	09/19/2016 11:31	4-Nitroaniline	ND [0.00061]	1					01
580-62531-1	580-62531-1	TPW-2-0916	8270D	09/19/2016 11:31	4-Nitroaniline	ND [0.00061]	1					OL.
580-62531-1	580-62531-5	TPW-5-0916	8270D	09/19/2016 11:31	4-Nitroaniline	ND [0.00061]	1					OL.
580-62531-1	580-62531-3	TPW-9-0916	8270D	09/19/2016 11:31	4-Nitroaniline	ND [0.00061]	1				1	QL
580-62531-1	LCS 580-227786/2-A	LCS	8270D	09/19/2016 11:31	Anthracene	0.00101	51	20	125	55	26	
580-62521-1	ICSD 580-227786/2 A		82700	09/19/2016 11:31	Anthracene	0.000579	29	20	125	55	26	
580-62531-1	580-62531-4	PO-W1-0916	82700	09/19/2016 11:31	Anthracene	ND [0 00004]	2.5	20	123		20	
580-62531-1	580-62531-2	TPW-1-0916	82700	09/19/2016 11:31	Anthracene	ND [0.00004]	1					
580-62531-1	580-62531-1	TPW-2-0916	82700	09/19/2016 11:31	Anthracene	ND [0.000041	1					
580-62531-1	580-62531-5	TPW-5-0916	8270D	09/19/2016 11:31	Anthracene	ND [0.000041						
580-62531-1	580-62531-3	TPW-9-0916	8270D	09/19/2016 11:31	Anthracene	ND [0.000041		1			1	

		Field Sample	Analysis			Recult	Percent					
SDC.	Lab Sample ID	Identification	Mothod	Bron Data	Analuto	(mg/L)	Percent			PDD	RDD Limit	Flog
300		loc	Niethou		Allaryte	(118/1)	AO	20	115	60		Flag
580-62531-1	LCS 580-227786/2-A	LCS	8270D	09/19/2016 11:31	Benzo[a]pyrene	0.00095	48	20	115	60	35	
580-62531-1	LCSD 580-227786/3-A	LCSD	8270D	09/19/2016 11:31	Benzo[a]pyrene	0.000513	26	20	115	60	35	
580-62531-1	580-62531-4	PQ-W1-0916	8270D	09/19/2016 11:31	Benzo[a]pyrene	ND [0.00004]						
580-62531-1	580-62531-2	TPW-1-0916	8270D	09/19/2016 11:31	Benzo[a]pyrene	ND [0.00004]						
580-62531-1	580-62531-1	TPW-2-0916	8270D	09/19/2016 11:31	Benzo[a]pyrene	ND [0.000041						
580-62531-1	580-62531-5	TPW-5-0916	8270D	09/19/2016 11:31	Benzo[a]pyrene	ND [0.000041						
580-62531-1	580-62531-3	TPW-9-0916	8270D	09/19/2016 11:31	Benzo[a]pyrene	ND [0.000041						
580-62531-1	105 580-227786/2-4	105	82700	09/19/2016 11:31	Benzo[k]fluoranthene	0.00194	97	60	134	26	20	
500-02531-1	LCS 500-227700/2-A		82700	00/10/2010 11:31	Denzo[k]fluoranthene	0.00154	126	60	124	26	20	
580-62531-1	LCSD 580-227786/3-A	LCSD	8270D	09/19/2016 11:31	Benzo[k]nuoranthene	0.00251	120	60	154	20	20	
580-62531-1	580-62531-4	PQ-W1-0916	8270D	09/19/2016 11:31	Benzo[k]fluorantnene	ND [0.000061						
580-62531-1	580-62531-2	TPW-1-0916	8270D	09/19/2016 11:31	Benzo[k]fluoranthene	ND [0.000061						
580-62531-1	580-62531-1	TPW-2-0916	8270D	09/19/2016 11:31	Benzo[k]fluoranthene	ND [0.000061						
580-62531-1	580-62531-5	TPW-5-0916	8270D	09/19/2016 11:31	Benzo[k]fluoranthene	ND [0.000061						
580-62531-1	580-62531-3	TPW-9-0916	8270D	09/19/2016 11:31	Benzo[k]fluoranthene	ND [0.000061						
580-62531-1	LCS 580-227786/2-A	LCS	8270D	09/19/2016 11:31	Benzyl alcohol	0.00183	91	52	124	69	20	
580-62531-1	LCSD 580-227786/3-A	LCSD	8270D	09/19/2016 11:31	Benzyl alcohol	0.000887	44	52	124	69	20	
580-62531-1	580-62531-4	PQ-W1-0916	8270D	09/19/2016 11:31	Benzyl alcohol	ND [0.0004]						QL
580-62531-1	580-62531-2	TPW-1-0916	8270D	09/19/2016 11:31	Benzyl alcohol	ND [0.0004]						QL
580-62531-1	580-62531-1	TPW-2-0916	8270D	09/19/2016 11:31	Benzyl alcohol	ND [0.00041]						OL
580-62531-1	580-62531-5	TPW-5-0916	8270D	09/19/2016 11:31	Benzyl alcohol	ND [0 00041]						01
580-62531-1	580-62531-3	TPW-9-0916	82700	09/19/2016 11:31	Benzyl alcohol	ND [0.00041]						0
500-02531-1	LCC 500 22770C /2 A	100-5-0510	82700	00/10/2010 11:31		0.00212	107		150	21	20	QL
560-02551-1	LC3 560-227760/2-A	103	82700	09/19/2010 11.31		0.00215	107	55	150	21	20	
580-62531-1	LCSD 580-227786/3-A	LCSD	8270D	09/19/2016 11:31	Di-n-octyl phthalate	0.00263	131	55	150	21	20	
580-62531-1	580-62531-4	PQ-W1-0916	8270D	09/19/2016 11:31	Di-n-octyl phthalate	ND [0.0004]						
580-62531-1	580-62531-2	TPW-1-0916	8270D	09/19/2016 11:31	Di-n-octyl phthalate	ND [0.0004]						
580-62531-1	580-62531-1	TPW-2-0916	8270D	09/19/2016 11:31	Di-n-octyl phthalate	ND [0.00041]						
580-62531-1	580-62531-5	TPW-5-0916	8270D	09/19/2016 11:31	Di-n-octyl phthalate	ND [0.00041]						
580-62531-1	580-62531-3	TPW-9-0916	8270D	09/19/2016 11:31	Di-n-octyl phthalate	ND [0.00041]						
580-62531-1	LCS 580-227786/2-A	LCS	8270D	09/19/2016 11:31	Hexachlorocyclopentadiene	ND [0.002]	4	20	110	106	35	
580-62531-1	LCSD 580-227786/3-A	LCSD	8270D	09/19/2016 11:31	Hexachlorocyclopentadiene	0.000231	12	20	110	106	35	
580-62531-1	580-62531-4	PO-W1-0916	8270D	09/19/2016 11:31	Hexachlorocyclopentadiene	ND [0 002]		-	-			01
580-62531-1	580-62531-2	TPW-1-0916	82700	09/19/2016 11:31	Hexachlorocyclopentadiene	ND [0 002]						0
580-62531-1	580-62531-1	TPW-2-0916	82700	09/19/2016 11:31	Hexachlorocyclopentadiene	ND [0.002]						
580-62531-1	580-02551-1 580 62521 5	TDW/ 5 0016	0270D	09/19/2016 11:31	Hexachlorocyclopentadiene	ND [0.002]						
580-02531-1	580-02551-5	TPW-3-0910	82700	09/19/2010 11:31	Hexachlorocyclopentadiene	ND [0.002]						
560-02551-1	560-02551-5	1940-9-0910	8270D	09/19/2010 11.31	Hexacillorocyclopentadiene	ND [0.002]	= 0	40		=0		ŲL
580-62531-1	LCS 580-227786/2-A	LCS	8270D	09/19/2016 11:31	N-Nitrosodiphenylamine	0.00116	58	40	124	59	20	
580-62531-1	LCSD 580-227786/3-A	LCSD	8270D	09/19/2016 11:31	N-Nitrosodiphenylamine	0.000635	32	40	124	59	20	
580-62531-1	580-62531-4	PQ-W1-0916	8270D	09/19/2016 11:31	N-Nitrosodiphenylamine	ND [0.0004]						QL
580-62531-1	580-62531-2	TPW-1-0916	8270D	09/19/2016 11:31	N-Nitrosodiphenylamine	ND [0.0004]						QL
580-62531-1	580-62531-1	TPW-2-0916	8270D	09/19/2016 11:31	N-Nitrosodiphenylamine	ND [0.00041]						QL
580-62531-1	580-62531-5	TPW-5-0916	8270D	09/19/2016 11:31	N-Nitrosodiphenylamine	ND [0.00041]						QL
580-62531-1	580-62531-3	TPW-9-0916	8270D	09/19/2016 11:31	N-Nitrosodiphenylamine	ND [0.00041]						QL
580-62712-1	LCS 580-228478/6	LCS	8260C	09/27/2016 18:10	1,2-Dibromo-3-Chloropropane	0.00654	65	58	141	41	30	
580-62712-1	LCSD 580-228478/7		8260C	09/27/2016 18:35	1 2-Dibromo-3-Chloropropane	0.00988	99	58	141	41	30	
580-62712-1	580-62712-4	APT-1-0916	82600	09/27/2016 22:34	1.2-Dibromo-3-Chloropropane	ND [0.01]	55	50			50	
580-62712-1	580-62712-6	APT-3-0016	82600	09/27/2016 22:07	1.2-Dibromo-3-Chloropropane	ND [0.01]						
500 62712 1	500 02712 0 500 62712 5	APT 0 0016	82600	09/27/2016 21:41	1.2 Dibromo 3 Chloropropano	ND [0.01]						
580-02712-1	580-02712-5	AF1-9-0910	82000	09/27/2010 21.41	1,2-Dibromo 3 Chloropropane	ND [0.01]						
580-02712-1	580-02712-1	NIW-39A-0910	82000	09/27/2010 20.22	1,2-Dibromo-3-Chloropropale	ND [0.01]						
580-62712-1	580-62712-2	NW-39B-0916	82600	09/27/2016 20:48	1,2-Dibromo-3-Chioropropane	ND [0.01]						
580-62712-1	580-62712-3	MW-62A-0916	8260C	09/27/2016 21:14	1,2-Dibromo-3-Chioropropane	ND [0.01]						
580-62712-1	580-62/12-/	IB-07-0916	8260C	09/2//2016 19:29	1,2-Dibromo-3-Chloropropane	ND [0.01]						
580-62712-1	LCS 580-228478/6	LCS	8260C	09/27/2016 18:10	Dichlorodifluoromethane	0.00412	41	20	141	90	35	
580-62712-1	LCSD 580-228478/7	LCSD	8260C	09/27/2016 18:35	Dichlorodifluoromethane	0.0108	108	20	141	90	35	
580-62712-1	580-62712-4	APT-1-0916	8260C	09/27/2016 22:34	Dichlorodifluoromethane	ND [0.002]						
580-62712-1	580-62712-6	APT-3-0916	8260C	09/27/2016 22:07	Dichlorodifluoromethane	ND [0.002]						
580-62712-1	580-62712-5	APT-9-0916	8260C	09/27/2016 21:41	Dichlorodifluoromethane	ND [0.002]						
580-62712-1	580-62712-1	MW-39A-0916	8260C	09/27/2016 20:22	Dichlorodifluoromethane	ND [0.002]						
580-62712-1	580-62712-2	MW-39B-0916	8260C	09/27/2016 20:48	Dichlorodifluoromethane	ND [0.002]						
580-62712-1	580-62712-3	MW-62A-0916	8260C	09/27/2016 21:14	Dichlorodifluoromethane	ND [0.002]						
580-62712-1	580-62712-7	TB-07-0916	8260C	09/27/2016 19:29	Dichlorodifluoromethane	ND [0.002]						
580-62712-1	LCS 580-228478/6	LCS	8260C	09/27/2016 18:10	N-Propylbenzene	0.0118	118	70	124	6	13	
580-62712-1	LCSD 580-228/178/7		82600	09/27/2016 18:35	N-Propylhenzene	0.0126	126	70	124	6	13	
580-62712-1	580-62712-4	ΔPT_1_0016	82600	09/27/2010 10.33	N-Pronylbenzene	ND [0 0021	120	,0	124	5	1.5	
580-62712 1	580-62712.6	APT_2_0016	82600	09/27/2010 22.34	N-Propylbenzeno	ND [0.003]						
500-02/12-1	500-02/12-0 E90 62712 F	APT 0 0016	0200C	09/27/2010 22:0/		ND [0.003]						
500-02/12-1	500-02/12-3	ALI - 3-0310	0200C	09/27/2010 21:41		ND [0.003]					<u> </u>	
500-02/12-1	500-02/12-1	NUM 200 0010	02000	00/27/2010 20:22		ND [0.003]					<u> </u>	
580-62/12-1	580-62/12-2	IVIVV-39B-0916	82600	09/2//2016 20:48	IN-Propyidenzene	ND [0.003]						
580-62/12-1	580-62/12-3	IVIW-62A-0916	82600	09/2//2016 21:14	IN-Propyidenzene	[200.0] UN						
580-62712-1	580-62/12-7	18-07-0916	8260C	09/2//2016 19:29	N-Propylbenzene	ND [0.003]				-		
580-62712-1	LCS 580-228478/6	LCS	8260C	09/27/2016 18:10	Vinyl chloride	0.011	110	56	114	8	23	
580-62712-1	LCSD 580-228478/7	LCSD	8260C	09/27/2016 18:35	Vinyl chloride	0.012	120	56	114	8	23	
580-62712-1	580-62712-4	APT-1-0916	8260C	09/27/2016 22:34	Vinyl chloride	ND [0.001]						
580-62712-1	580-62712-6	APT-3-0916	8260C	09/27/2016 22:07	Vinyl chloride	ND [0.001]						
580-62712-1	580-62712-5	APT-9-0916	8260C	09/27/2016 21:41	Vinyl chloride	ND [0.001]						
580-62712-1	580-62712-1	MW-39A-0916	8260C	09/27/2016 20:22	Vinyl chloride	ND [0.001]						
580-62712-1	580-62712-2	MW-39B-0916	8260C	09/27/2016 20:48	Vinyl chloride	ND [0.001]						
580-62712-1	580-62712-3	MW-62A-0916	8260C	09/27/2016 21:14	Vinyl chloride	ND [0.001]						

		-		-								
		Field Sample	Analysis		A 1	Result	Percent	LCS/LCSD	LCS/LCSD		LCS/LCSD	_
SDG	Lab Sample ID	TR 07 0016	Method	Prep Date	Analyte Vipyl chlorido	(mg/L)	Recovery	101	UCL	RPD	RPD LIMIT	Flag
580-62712-1	1 CS E80 2282E1/2 A	IP-01-0910	8200C	09/27/2016 19:29	2 2' Dichlorobonzidino	0.000424	11	20	121			
580-62712-1	580-62712-4	APT-1-0916	8270D	09/26/2016 15:04	3 3'-Dichlorobenzidine	ND [0 002]	- 11	20	121			01
580-62712-1	580-62712-6	APT-3-0916	8270D	09/26/2016 15:04	3.3'-Dichlorobenzidine	ND [0.0019]						
580-62712-1	580-62712-5	APT-9-0916	8270D	09/26/2016 15:04	3,3'-Dichlorobenzidine	ND [0.0019]						QL
580-62712-1	580-62712-1	MW-39A-0916	8270D	09/26/2016 15:04	3,3'-Dichlorobenzidine	ND [0.002]						QL
580-62712-1	580-62712-2	MW-39B-0916	8270D	09/26/2016 15:04	3,3'-Dichlorobenzidine	ND [0.0019]						QL
580-62712-1	580-62712-3	MW-62A-0916	8270D	09/26/2016 15:04	3,3'-Dichlorobenzidine	ND [0.0019]						QL
580-62712-1	LCS 580-228351/2-A		8270D	09/26/2016 15:04	4-Chloroaniline	ND [0.0004]	2	20	110			R
580-62712-1	580-62712-4	APT-1-0916	8270D	09/26/2016 15:04	4-Chloroaniline	ND [0.0004]						R
580-62712-1	580-62712-6	APT-3-0916	8270D	09/26/2016 15:04	4-Chloroaniline	ND [0.00038]						R
580-62712-1	580-62712-5	APT-9-0916	8270D	09/26/2016 15:04	4-Chloroaniline	ND [0.00038]						R
580-62712-1	580-62712-1	MW-39A-0916	8270D	09/26/2016 15:04	4-Chloroaniline	ND [0.0004]						R
580-62712-1	560-62712-2	MW 624 0016	8270D	09/26/2016 15:04	4 Chloroanilino	ND [0.00039]						R D
580-62712-1	LCS 580-228351/2-A	WW-02A-0510	8270D	09/26/2016 15:04	Heyachlorocyclopentadiene	0.000362	18	20	110			Ň
580-62712-1	580-62712-4	APT-1-0916	8270D	09/26/2016 15:04	Hexachlorocyclopentadiene	ND [0.002]	10	20	110			OL
580-62712-1	580-62712-6	APT-3-0916	8270D	09/26/2016 15:04	Hexachlorocyclopentadiene	ND [0.0019]						QL
580-62712-1	580-62712-5	APT-9-0916	8270D	09/26/2016 15:04	Hexachlorocyclopentadiene	ND [0.0019]						QL
580-62712-1	580-62712-1	MW-39A-0916	8270D	09/26/2016 15:04	Hexachlorocyclopentadiene	ND [0.002]						QL
580-62712-1	580-62712-2	MW-39B-0916	8270D	09/26/2016 15:04	Hexachlorocyclopentadiene	ND [0.0019]						QL
580-62712-1	580-62712-3	MW-62A-0916	8270D	09/26/2016 15:04	Hexachlorocyclopentadiene	ND [0.0019]						QL
580-62759-1	LCS 580-228461/2-A		8270D	09/27/2016 14:37	3,3'-Dichlorobenzidine	0.000215	5	20	121			R
580-62759-1	580-62759-1	APT-2-0916	8270D	09/27/2016 14:37	3,3'-Dichlorobenzidine	ND [0.0019]						R
580-62759-1	580-62759-2	MW-138B-0916	8270D	09/27/2016 14:37	3,3'-Dichlorobenzidine	ND [0.0019]						R
580-62759-1	580-62759-7	MW-91A-0916	8270D	09/27/2016 14:37	3,3'-Dichlorobenzidine	ND [0.0019]						R
580-62759-1	580-62759-3	OW-1-0916	8270D	09/27/2016 14:37	3,3 -Dichlorobenzidine	ND [0.002]						ĸ
580-62759-1	580-62759-4	0W-2-0916	8270D	09/27/2016 14:37	3.3 -Dichlorobenzidine	ND [0.0019]						R
580-62759-1	580-62759-6	OW-4-0916	8270D	09/27/2016 14:37	3 3'-Dichlorobenzidine	ND [0.002]						R
580-62759-1	LCS 580-228461/2-A	011 1 00 10	8270D	09/27/2016 14:37	4-Chloroaniline	ND [0.0004]	1	20	110			R
580-62759-1	580-62759-1	APT-2-0916	8270D	09/27/2016 14:37	4-Chloroaniline	ND [0.00039]			-			R
580-62759-1	580-62759-2	MW-138B-0916	8270D	09/27/2016 14:37	4-Chloroaniline	ND [0.00039]						R
580-62759-1	580-62759-7	MW-91A-0916	8270D	09/27/2016 14:37	4-Chloroaniline	ND [0.00038]						R
580-62759-1	580-62759-3	OW-1-0916	8270D	09/27/2016 14:37	4-Chloroaniline	ND [0.00039]						R
580-62759-1	580-62759-4	OW-2-0916	8270D	09/27/2016 14:37	4-Chloroaniline	ND [0.00039]						R
580-62759-1	580-62759-5	OW-3-0916	8270D	09/27/2016 14:37	4-Chloroaniline	ND [0.00039]						R
580-62759-1	580-62759-6	OW-4-0916	8270D	09/27/2016 14:37	4-Chloroaniline	ND [0.0004]						R
580-62759-1	LCS 580-228461/2-A	ADT 2 0016	8270D	09/27/2016 14:37	Hexachlorocyclopentadiene	0.000366	18	20	110			
580-62759-1	580-62759-1	API-2-0916	8270D	09/27/2016 14:37	Hexachlorocyclopentadiene	ND [0.0019]						
580-62759-1	580-62759-2	MW-914-0916	8270D 8270D	09/27/2016 14:37	Hexachlorocyclopentadiene	ND [0.0019]						
580-62759-1	580-62759-3	OW-1-0916	8270D	09/27/2016 14:37	Hexachlorocyclopentadiene	ND [0.002]						
580-62759-1	580-62759-4	OW-2-0916	8270D	09/27/2016 14:37	Hexachlorocyclopentadiene	ND [0.0019]						QL
580-62759-1	580-62759-5	OW-3-0916	8270D	09/27/2016 14:37	Hexachlorocyclopentadiene	ND [0.002]						QL
580-62759-1	580-62759-6	OW-4-0916	8270D	09/27/2016 14:37	Hexachlorocyclopentadiene	ND [0.002]						QL
580-62627-1	LCS 580-228277/5	LCS	8260C	09/26/2016 11:03	trans-1,2-Dichloroethene	0.0112	111	72	113	4	21	
580-62627-1	LCSD 580-228277/6	LCSD	8260C	09/26/2016 11:32	trans-1,2-Dichloroethene	0.0116	116	72	113	4	21	
580-62627-1	580-62627-3	MW-27B-0916	8260C	09/26/2016 13:55	trans-1,2-Dichloroethene	ND [0.003]						
580-62627-1	580-62627-6	MW-50A-0916	8260C	09/26/2016 15:20	trans-1,2-Dichloroethene	ND [0.003]						
580-62627-1	580-62627-7	MW-50B-0916	8260C	09/26/2016 15:48	trans-1,2-Dichloroethene	ND [0.003]						L
580-62627-1	580-62627-4	MW-74A-0916	8260C	09/26/2016 14:24	trans-1,2-Dichloroethene	ND [0.003]						
580-62627-1	580-62627-5	MW-74B-0916	8260C	09/26/2016 14:52	trans-1,2-Dichloroethene	ND [0.003]						
580-62627-1	580-62627-1	MW 82R-0916	8200C	09/20/2010 12:37	trans 1.2 Dichloroothono	ND [0.003]						
580-62627-1	580-62627-8	MW-878-0916	82600	09/26/2016 16:17	trans-1,2-Dichloroethene	ND [0.003]						
580-62627-1	580-62627-9	MW-87Z-0916	8260C	09/26/2016 16:45	trans-1,2-Dichloroethene	ND [0.003]						
580-62627-1	580-62627-10	TB-4-0916	8260C	09/26/2016 12:29	trans-1,2-Dichloroethene	ND [0.003]	1					
580-62627-1	LCS 580-228099/2-A	LCS	8270D	09/22/2016 14:28	4-Chloroaniline	ND [0.0004]	1	20	110	15	35	R
580-62627-1	LCSD 580-228099/3-A	LCSD	8270D	09/22/2016 14:28	4-Chloroaniline	ND [0.0004]	1	20	110	15	35	R
580-62627-1	580-62627-3	MW-27B-0916	8270D	09/22/2016 14:28	4-Chloroaniline	ND [0.00039]						R
580-62627-1	580-62627-6	MW-50A-0916	8270D	09/22/2016 14:28	4-Chloroaniline	ND [0.00038]						R
580-62627-1	580-62627-7	MW-50B-0916	8270D	09/22/2016 14:28	4-Chloroaniline	ND [0.0004]						R
580-62627-1	580-62627-4	MW-74A-0916	8270D	09/22/2016 14:28	4-Chloroaniline	ND [0.00038]	<u> </u>					R
580-62627-1	580-62627-5	MW-74B-0916	82/0D	09/22/2016 14:28	4-Chloroaniline	ND [0.00043]						R
580-62627-1	580-62627-2	MW-828-0916	82700	09/22/2010 14:28	4-Chloroaniline	ND [0.00038]						R
580-62627-1	580-62627-8	MW-878-0916	8270D	09/22/2016 14:28	4-Chloroaniline	ND [0.00039]	1	<u></u>				R

580-62 580-62627-1 Notes:

Recovery and RPD failing the control limit shown in **bold** text

MW-87Z-0916 8270D

Results of analytes that were not detected in field samples were not qualified in instances where a high recovery bias was observed in the associated LCS or LCSD samples as the bias conservatively ensures that the undetected sample result was below the DL reported.

09/22/2016 14:28 4-Chloroaniline

Results of analytes that were not detected in field samples were not qualified in those occurences where the RPD was above the control limit for the associated LCS/LCSD sample pair.

Acronyms: LCL

lower control limit LCS laboratory control sample

580-62627-9

LCSD laboratory control sample duplicate ND [0.00039

R

SDG	Lab Sample ID	Field Sample Identification	Analysis Method	Prep Date	Analyte	Result (mg/L)	Percent Recovery	LCS/LCSD LCL	LCS/LCSD UCL	RPD	LCS/LCSD RPD Limit	Flag
mg/L	milligrams per liter			· · ·	· · · · ·							
MB	Method Blank											
RPD	Relitive Percent Differe	ence										

RPD UCL upper control limit

## Attachment 3

MS/MSD Qualified Sample Data Table

					MS/MSD					
	Sample	Analysis		Result	Percent	MS/MSD	MS/MSD	MS/MSD	MS/MSD	
Field Sample	Туре	Method	Analyte	(mg/l)	Recovery	LCL	UCL	RPD	RPD Limit	Flag
APT-1-0916	MS	8260C	1,1-Dichloropropene	0.0122	122	75	120	1	35	
APT-1-0916	MSD	8260C	1,1-Dichloropropene	0.0123	123	75	120	1	35	
APT-1-0916	Parent	8260C	1,1-Dichloropropene	ND						
APT-1-0916	MS	8260C	1,4-Dichlorobenzene	0.0118	118	75	117	3	35	
APT-1-0916	MSD	8260C	1,4-Dichlorobenzene	0.0115	114	75	117	3	35	
APT-1-0916	Parent	8260C	1,4-Dichlorobenzene	ND						
APT-1-0916	MS	8270D	3,3'-Dichlorobenzidine	ND	5	20	121	NC	35	
APT-1-0916	MSD	8270D	3,3'-Dichlorobenzidine	ND	0	20	121	NC	35	
APT-1-0916	Parent	8270D	3,3'-Dichlorobenzidine	ND						R
APT-1-0916	MS	8270D	3-Nitroaniline	0.00106	55	22	124	40	35	
APT-1-0916	MSD	8270D	3-Nitroaniline	0.000701	36	22	124	40	35	
APT-1-0916	Parent	8270D	3-Nitroaniline	ND						ML
APT-1-0916	MS	8270D	4-Chloroaniline	ND	17	20	110	NC	35	
APT-1-0916	MSD	8270D	4-Chloroaniline	ND	0	20	110	NC	35	
APT-1-0916	Parent	8270D	4-Chloroaniline	ND						R
APT-1-0916	MS	8270D	Bis(2-ethylhexyl) phthalate	0.00554	288	22	150	57	35	
APT-1-0916	MSD	8270D	Bis(2-ethylhexyl) phthalate	0.00307	156	22	150	57	35	
APT-1-0916	Parent	8270D	Bis(2-ethylhexyl) phthalate	ND						
APT-1-0916	MS	8260C	Carbon disulfide	0.0124	123	63	122	0	35	
APT-1-0916	MSD	8260C	Carbon disulfide	0.0124	124	63	122	0	35	
APT-1-0916	Parent	8260C	Carbon disulfide	ND						
APT-1-0916	MS	8260C	Ethylbenzene	0.0126	125	75	119	2	35	
APT-1-0916	MSD	8260C	Ethylbenzene	0.0123	123	75	119	2	35	
APT-1-0916	Parent	8260C	Ethylbenzene	ND						
APT-1-0916	MS	8260C	m-Xylene & p-Xylene	0.012	120	75	119	2	35	
APT-1-0916	MSD	8260C	m-Xylene & p-Xylene	0.0122	122	75	119	2	35	
APT-1-0916	Parent	8260C	m-Xylene & p-Xylene	ND						
APT-1-0916	MS	8270D	N-Nitrosodiphenylamine	0.000687	36	40	124	14	35	
APT-1-0916	MSD	8270D	N-Nitrosodiphenylamine	0.000792	40	40	124	14	35	
APT-1-0916	Parent	8270D	N-Nitrosodiphenylamine	ND						ML
APT-1-0916	MS	8260C	N-Propylbenzene	0.0133	133	70	124	2	35	
APT-1-0916	MSD	8260C	N-Propylbenzene	0.0131	131	70	124	2	35	
APT-1-0916	Parent	8260C	N-Propylbenzene	ND						
APT-1-0916	MS	8260C	sec-Butylbenzene	0.0122	122	70	125	4	35	
APT-1-0916	MSD	8260C	sec-Butylbenzene	0.0127	127	70	125	4	35	
APT-1-0916	Parent	8260C	sec-Butylbenzene	ND						
APT-1-0916	MS	8260C	Toluene	0.0129	121	75	120	0	35	
APT-1-0916	MSD	8260C	Toluene	0.0129	121	75	120	0	35	
APT-1-0916	Parent	8260C	Toluene	ND						
APT-1-0916	MS	8260C	Trichloroethene	0.0529	143	70	125	5	35	
APT-1-0916	MSD	8260C	Trichloroethene	0.0503	118	70	125	5	35	
APT-1-0916	Parent	8260C	Trichloroethene	0.039						MH
APT-1-0916	MS	8260C	Vinyl chloride	0.0137	137	56	114	1	35	
APT-1-0916	MSD	8260C	Vinyl chloride	0.0139	139	56	114	1	35	
APT-1-0916	Parent	8260C	Vinyl chloride	ND						
TPW-1-0916	MS	8270D	3,3'-Dichlorobenzidine	ND	0	20	121	NC	35	R
TPW-1-0916	MSD	8270D	3,3'-Dichlorobenzidine	ND	0	20	121	NC	35	R
TPW-1-0916	Parent	8270D	3,3'-Dichlorobenzidine	ND						R
TPW-1-0916	MS	8270D	3-Nitroaniline	ND	18	22	124	22	35	
TPW-1-0916	IVISD	82/0D	3-Nitroaniline	0.00047	23	22	124	22	35	
TPW-1-0916	Parent	82/0D	3-Nitroaniline	ND						ML
1PW-1-0916	MS	82/0D	4-Chloroaniline	ND	0	20	110	NC	35	R
FPW-1-0916	MSD	8270D	4-Chloroaniline	ND	0	20	110	NC	35	R
TPW-1-0916	Parent	8270D	4-Chloroaniline	ND						R
FPW-1-0916	MS	8270D	Bis(2-ethylhexyl) phthalate	ND	119	22	150	77	35	
FPW-1-0916	MSD -	8270D	Bis(2-ethylhexyl) phthalate	0.00547	273	22	150	77	35	
TPW-1-0916	Parent	8270D	Bis(2-ethylhexyl) phthalate	ND	L		ļ			

	Sample	Analysis		Result	MS/MSD Percent	MS/MSD	MS/MSD	MS/MSD	MS/MSD	
Field Sample	Туре	Method	Analyte	(mg/l)	Recovery	LCL	UCL	RPD	RPD Limit	Flag
TPW-1-0916	MS	8270D	bis(chloroisopropyl) ether	ND	8	44	123	171	35	
TPW-1-0916	MSD	8270D	bis(chloroisopropyl) ether	0.00198	99	44	123	171	35	
TPW-1-0916	Parent	8270D	bis(chloroisopropyl) ether	ND						ML
TPW-1-0916	MS	8260C	Carbon tetrachloride	0.0121	121	65	124	3	35	
TPW-1-0916	MSD	8260C	Carbon tetrachloride	0.0125	125	65	124	3	35	
TPW-1-0916	Parent	8260C	Carbon tetrachloride	ND						
TPW-1-0916	MS	8260C	Chloroform	0.0121	121	80	119	1	35	
TPW-1-0916	MSD	8260C	Chloroform	0.0122	122	80	119	1	35	
TPW-1-0916	Parent	8260C	Chloroform	ND						
TPW-1-0916	MS	8260C	cis-1,2-Dichloroethene	0.0119	118	70	111	1	35	
TPW-1-0916	MSD	8260C	cis-1,2-Dichloroethene	0.012	119	70	111	1	35	
TPW-1-0916	Parent	8260C	cis-1,2-Dichloroethene	ND						
TPW-1-0916	MS	8260C	trans-1,2-Dichloroethene	0.0117	117	72	113	6	35	
TPW-1-0916	MSD	8260C	trans-1,2-Dichloroethene	0.0124	124	72	113	6	35	
TPW-1-0916	Parent	8260C	trans-1,2-Dichloroethene	ND						

#### Notes:

MS/MSD Recovery and RPD exceeding the control limit shown in **bold** text

Results of analytes that were not detected in field samples were not qualified in instances where a high recovery bias was observed in the associated MS or MSD samples as the bias conservatively ensures that the undetected sample result was below the DL reported. Results of analytes that were not detected in field samples were not qualified in those occurences where the RPD was above the control limit for the associated MS/MSD sample pair.

#### Acronyms:

LCL	lower control limit
mg/L	milligrams per liter
MB	Method Blank
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relitive Percent Difference
UCL	upper control limit



APPENDIX E ANALYTICAL LABORATORY REPORTS



Laboratory Report of Analysi
------------------------------

To: SLR Alaska-Anchorage 2700 Gambell St Suite 200 Anchorage, AK 99503 (907)222-1112

Report Number: 1164639

Client Project: Kenai Wells-August APT Event A

Dear Jason Gray,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Justin Nelson Sincerely, SGS North America Inc. 2016.09.02 17:37:37 -08'00' SGS North America Inc Environmental Services – Alaska Division Project Manager

Justin Nelson Project Manager Justin.Nelson@sgs.com Date

Print Date: 09/02/2016 5:22:40PM

SGS North America Inc.



**Case Narrative** 

## SGS Client: SLR Alaska-Anchorage SGS Project: 1164639 Project Name/Site: Kenai Wells-August APT Event A Project Contact: Jason Gray

Refer to sample receipt form for information on sample condition.

#### OW-4-0816 (1164639001) PS

8270D SIM - Pesticide LCS/LCSD recovery for endosulfan I (61.3%/52.2%) does not meet QC criteria. Sample was re-extracted outside of hold time with LCS/LCSD within QC criteria. Sample results are comparable. 8270D SIM - Pesticide surrogate recovery for terphenyl-d14 (51.9%) does not meet QC criteria. Sample was re-extracted outside of hold time with surrogate recoveries within QC criteria. Sample results are comparable. 2540B - Total Volatile Solids – Analyzed past hold time due to a laboratory error. Chlorophyll-a was anlayzed by ALS of Kelso, WA.

#### OW-2-0816 (1164639002) PS

8270D SIM - Pesticide LCS/LCSD recovery for endosulfan I (61.3%/52.2%) does not meet QC criteria. Sample was re-extracted outside of hold time with LCS/LCSD within QC criteria. Sample results are comparable. 8270D SIM - Pesticide surrogate recovery for terphenyl-d14 (47.1%) and 2-fluorobiphenyl (41.9%) does not meet QC criteria. Sample was re-extracted outside of hold time with surrogate recovery for terphenyl-d14 (44.4%) and 2-fluorobiphenyl (47.1%) outside QC criteria.

2540B - Total Volatile Solids – Analyzed past hold time due to a laboratory error.

#### 1164672001DUP (1346468) DUP

2540B - Total Volatile Solids - Analyzed past hold time due to a laboratory error. Sample duplicate RPD was outside of acceptance limits. There was insufficient volume remaining for reanalysis.

#### LCS for HBN 1741698 [XXX/36071 (1345540) LCS

8270D SIM - Pesticide LCS recovery for endosulfane I (61.3%) does not meet QC criteria.

#### LCSD for HBN 1741698 [XXX/3607 (1345541) LCSD

8270D SIM - Pesticide LCSD recovery for endosulfane I (52.2%) does not meet QC criteria.

#### LCSD for HBN 1741699 [XXX/3607 (1345544) LCSD

8270D - LCS/LCSD RPD for benzoic acid (24.8%) does not meet QC criteria.

#### LCSD for HBN 1741922 [VXX/2939 (1346659) LCSD

8260B - LCSD recovery for 1,2-dibromomethane (122%) does not meet QC criteria. This analyte was not detected above the LOQ in the associated samples.

#### MB for HBN 1742091 [XXX/36133] (1347406) MB

AK102/103 - DRO/RRO is detect in the MB greater than one half the LOQ, but less than the LOQ.

#### 1164672002(1346128MS) (1346129) MS

200.8LL - Metals MS recovery for zinc (50%) does not meet QC criteria. The post digestion spike was successful.

#### 1164728001MS (1347964) MS

4500N-D - Total Kjeldahl Nitrogen - MS recovery is outside of QC criteria (149%). Refer to LCS for accuracy requirements.

#### 1164672002(1346128MSD) (1346130) MSD

200.8LL - Metals MS recovery for iron (138%) does not meet QC criteria. The post digestion spike was successful.

#### 1164728001MSD (1347965) MSD

4500N-D - Total Kjeldahl Nitrogen - MSD recovery is outside of QC criteria (139%). Refer to LCS for accuracy requirements.

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	Report o	of Manual Integration	าร	
Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason
SW8270D				
1345543	LCS for HBN 1741699 [XXX/36072	XMS9556	1-Chloronaphthalene	RSP
1345544	LCSD for HBN 1741699 [XXX/3607	XMS9556	1-Chloronaphthalene	RSP

Manual Integration Reason Code Descriptions

#### Code Description

- O Original Chromatogram
- M Modified Chromatogram
- SS Skimmed surrogate
- BLG Closed baseline gap
- RP Reassign peak name
- PIR Pattern integration required
- IT Included tail
- SP Split peak
- RSP Removed split peak
- FPS Forced peak start/stop
- BLC Baseline correction
- PNF Peak not found by software

All DRO/RRO analysis are integrated per SOP.

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## Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <<u>http://www.sgs.com/en/Terms-and-Conditions.aspx></u>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

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SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
В	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.
Sample summaries which i All DRO/RRO analyses are	include a result for "Total Solids" have already been adjusted for moisture content.

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Note:

Sample Summary					
Client Sample ID	Lab Sample ID	<u>Collected</u>	Received	Matrix	
OW-4-0816	1164639001	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
OW-2-0816	1164639002	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
TB1-1145	1164639003	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
TB2-1145	1164639004	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
TB3-1145	1164639005	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
OW-4-0816	1164639006	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
OW-2-0816	1164639007	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
OW-3-0816	1164639008	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
OW-1-0816	1164639009	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
EBF-Lot H1558	1164639010	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
EBT-0816	1164639011	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
TB1-1353	1164639012	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
TB2-1353	1164639013	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
TB3-1353	1164639014	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
OW-3	1164639015	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	
OW-1	1164639016	08/10/2016	08/11/2016	Water (Surface, Eff., Ground)	

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Sample Summary			
Client Sample ID	Lab Sample ID Collected Received Matrix		
Method	Method Description		
SM21 2320B	Alkalinity as CaCO3 QC		
SM21 4500-NH3 G	Ammonia-N (W) SM21 4500-NH3 G		
EPA 410.4	Chemical Oxygen Demand		
SM21 2340B	Dissolved Hardness as CaCO3 ICP-MS-LowLv		
EPA 1631 E	Dissolved Low Level Mercury EPA 1631		
SM 5310B	Dissolved Organic Carbon		
AK102	DRO/RRO Low Volume Water		
AK103	DRO/RRO Low Volume Water		
AK101	Gasoline Range Organics (W)		
EPA 300.0	Ion Chromatographic Analysis		
EPA 300.0	Ion Chromatographic Analysis (W)		
EPA 1631 E	Low Level Mercury EPA 1631		
200.8 Low Level	Metals in Water by 200.8 ICP-MS LL		
200.8 Low Level	Metals in Water by 200.8 ICP-MS LL DIS		
SM21 4500P-B,E	Ortho Phosphorus SM4500P B,E (W)		
8270D SIM (PEST)	Pesticides 8270D SIM GC/MS		
SM21 4500-H B	pH Analysis		
SW8082A	SW8082 PCB's		
SW8270D	SW846-8270 SVOC by GC/MS (W) Liq/Liq ext		
SM21 4500-N D	TKN by Phenate (W)		
SM21 2540C	Total Dissolved Solids SM18 2540C		
SM 5310B	Total Organic Carbon		
SM21 4500P-B,E	Total Phosphorus (W)		
SM21 2540B	Total Residue		
SM21 2540D	Total Suspended Solids SM20 2540D		
SM21 2130B	Turbidity Analysis		
SW8260B	Volatile Organic Compounds (W) FULL		

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Detectable	Results	Summary
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Client Sample ID: OW-4-0816			
Lab Sample ID: 1164639001	Parameter	Result	<u>Units</u>
Metals by ICP/MS	Aluminum	2660	ug/L
	Antimony	7.75	ug/L
	Arsenic	131	ug/L
	Barium	83.1	ug/L
	Beryllium	0.215	ug/L
	Bismuth	0.161	ug/L
	Boron	30.1	ug/L
	Cadmium	0.100	ug/L
	Calcium	18500	ug/L
	Chromium	21.5	ug/L
	Cobalt	4.93	ug/L
	Copper	27.5	ug/L
	Iron	55000	ug/L
	Lead	10.7	ug/L
	Magnesium	7750	ua/L
	Manganese	357	ug/L
	Molvbdenum	2.05	ug/L
	Nickel	20.2	ug/l
	Potassium	7260	ug/L
	Selenium	0.575.1	ug/L
	Silver	0.210	ug/L
	Sodium	10700	ug/L
	Thallium	0.0393	ug/L
	Tin	0.219	ug/L
	Vanadium	131	ug/L
	Zinc	32.4	ug/L
Matala Danartmant	Zinc Moreun/	52. <del>4</del> 75 1	ug/L
Metals Department	Diesel Bange Organics	0 305 1	ng/L
Semivolatile Organic Fuels	Diesei Kange Organics	0.3355	mg/L
		0.4703	mg/∟
Volatile GC/MS	Triplerecthere	0.3903	ug/L
Weters Deverture at		76.0	uy/L mg/l
waters Department		70.9	mg/L
	Animonia-N Chemical Ovygen Demond	0.100	mg/L
	Chemical Oxygen Demand	30.0	mg/L
	Chionde	11.0	mg/L
	Fluoride	0.108J	mg/L
	Nitrate-N	0.105J	mg/L
	Ortho Phosphate-P	0.0587	mg/L
	рн Outfate	8.50	pH units
	Suitate	2.73	mg/L
	Total Dissolved Solids	74.0	mg/L
	Total Organic Carbon	2.47	mg/L
	Total Phosphorus	0.396	mg/L
	Total Solids	232	mg/L

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## **Detectable Results Summary**

Client Sample ID: OW-4-0816			
Lab Sample ID: 1164639001	Parameter	Result	Units
Waters Department	Total Suspended Solids	117	mg/L
	Turbidity	200	NTU

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Client Sample ID: OW-2-0816			
Lab Sample ID: 1164639002	Parameter	Result	<u>Units</u>
Metals by ICP/MS	Aluminum	3800	ug/L
	Antimony	1.71	ug/L
	Arsenic	49.5	ug/L
	Barium	61.4	ug/L
	Beryllium	0.0910	ug/L
	Bismuth	0.0971	ug/L
	Boron	121	ug/L
	Cadmium	0.0738	ug/L
	Calcium	7200	ug/L
	Chromium	16.8	ug/L
	Cobalt	2.03	ug/L
	Copper	13.0	ug/L
	Iron	16500	ug/L
	Lead	2.52	ug/L
	Magnesium	4530	ug/L
	Manganese	220	ug/L
	Molybdenum	5.35	ug/L
	Nickel	13.6	ug/L
	Potassium	7610	ug/L
	Silver	0.0429	ug/L
	Sodium	25700	ug/L
	Thallium	0.0275	ua/L
	Tin	0.201	ua/L
	Vanadium	19.3	ua/L
	Zinc	12.0	ua/L
Metals Department	Mercury	9.19	na/L
Semivolatile Organic Fuels	Residual Range Organics	0.192J	mg/L
Volatile GC/MS	Chloromethane	0.390J	ug/L
	Trichloroethene	0.470J	ua/L
Waters Department	Alkalinity	81.0	mg/L
	Ammonia-N	0.164	mg/L
	Chemical Oxygen Demand	23.5	mg/L
	Chloride	5.79	mg/L
	Fluoride	0.345	mg/L
	Ortho Phosphate-P	0.554	mg/L
	, Ha	8.80	pH units
	Sulfate	0.652	ma/L
	Total Dissolved Solids	119	ma/L
	Total Organic Carbon	2.79	ma/L
	Total Phosphorus	0.872	mg/L
	Total Solids	201	ma/L
	Total Suspended Solids	81.5	ma/L
	Turbidity	120	NTU

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## **Detectable Results Summary**

Client Sample ID: <b>TB1-1145</b>	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Lab Sample ID: 1164639003	Chloromethane	0.380J	ug/L
<b>Volatile GC/MS</b>	Dichlorodifluoromethane	0.810J	ug/L
Client Sample ID: <b>TB3-1145</b> Lab Sample ID: 1164639005 <b>Metals Department</b>	Parameter Mercury	<u>Result</u> 0.682J	<u>Units</u> ng/L
Client Sample ID: <b>OW-4-0816</b> Lab Sample ID: 1164639006 <b>Dissolved Metals</b> <b>Dissolved Metals by ICP/MS</b>	<u>Parameter</u> Mercury Aluminum Antimony Arsenic	<u>Result</u> 1.45 16.1 3.65 37.2	<u>Units</u> ng/L ug/L ug/L ug/L
	Barium	10.4	ug/L
	Boron	27.8	ug/L
	Calcium	15000	ug/L
	Cobalt	0.160	ug/L
	Copper	0.447J	ug/L
	Hardness as CaCO3	64.1	mg/L
	Iron	486	ug/L
	Lead	0.0879J	ug/L
	Magnesium	6490	ug/L
	Manganese	41.2	ug/L
	Molybdenum	0.882	ug/L
	Nickel	1.41	ug/L
	Potassium	6760	ug/L
	Silicon	10800	ug/L
	Sodium	9220	ug/L
	Vanadium	8.09	ug/L
	Zinc	1.60J	ug/L
Waters Department	Total Organic Carbon, Dissolved	1.34	mg/L

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## **Detectable Results Summary**

Client Sample ID: OW-2-0816			
Lab Sample ID: 1164639007	Parameter	Result	Units
Dissolved Metals	Mercury	0.932J	ng/L
Dissolved Metals by ICP/MS	Aluminum	45.9	ug/L
	Antimony	1.47	ug/L
	Arsenic	22.9	ug/L
	Barium	8.79	ug/L
	Boron	126	ug/L
	Calcium	6420	ug/L
	Chromium	0.223J	ug/L
	Cobalt	0.0659	ug/L
	Copper	0.327J	ug/L
	Hardness as CaCO3	29.9	mg/L
	Iron	360	ug/L
	Lead	0.130	ug/L
	Magnesium	3370	ug/L
	Manganese	28.9	ug/L
	Molybdenum	5.53	ug/L
	Nickel	0.629	ug/L
	Potassium	7030	ug/L
	Silicon	5950	ug/L
	Sodium	26300	ug/L
	Vanadium	2.46	ug/L
	Zinc	1.39J	ug/L
Waters Department	Total Organic Carbon, Dissolved	1.65	mg/L

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Client Sample ID: OW-3-0816

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#### **Detectable Results Summary**

Lab Sample ID: 1164639008	Parameter	Result	Units
Metals by ICP/MS	Aluminum	661	ug/L
-	Antimony	0.484	ug/L
	Arsenic	3.81	ug/L
	Barium	56.4	ug/L
	Boron	4.49J	ug/L
	Cadmium	0.0229J	ug/L
	Calcium	17100	ug/L
	Chromium	17.1	ug/L
	Cobalt	0.893	ug/L
	Copper	7.65	ug/L
	Iron	9570	ug/L
	Lead	0.517	ug/L
	Magnesium	6130	ug/L
	Manganese	496	ug/L
	Molybdenum	0.982	ug/L
	Nickel	12.1	ug/L
	Potassium	2160	ug/L
	Sodium	7920	ug/L
	Tin	0.0623J	ug/L
	Vanadium	2.56	ug/L
	Zinc	7.61	ug/L
Metals Department	Mercury	2.15	ng/L
Semivolatile Organic Fuels	Residual Range Organics	0.155J	mg/L
Waters Department	Alkalinity	60.0	mg/L
	Chloride	14.4	mg/L
	Fluoride	0.126J	mg/L
	рН	7.10	pH units
	Sulfate	5.29	mg/L
	Total Dissolved Solids	117	mg/L
	Total Suspended Solids	19.1	mg/L
	Turbidity	26.0	NTU

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Detectable	Results	Summary
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Client Sample ID: OW-1-0816			
Lab Sample ID: 1164639009	Parameter	Result	Units
Metals by ICP/MS	Aluminum	1940	ug/L
-	Antimony	0.362	ug/L
	Arsenic	6.83	ug/L
	Barium	120	ug/L
	Beryllium	0.0615	ug/L
	Bismuth	0.0314J	ug/L
	Boron	5.65	ug/L
	Cadmium	0.0507	ug/L
	Calcium	26700	ug/L
	Chromium	13.0	ug/L
	Cobalt	1.13	ug/L
	Copper	8.54	ug/L
	Iron	19200	ug/L
	Lead	1.46	ug/L
	Magnesium	7150	ug/L
	Manganese	1040	ug/L
	Molybdenum	0.456	ug/L
	Nickel	6.64	ug/L
	Potassium	2920	ug/L
	Silver	0.0158J	ug/L
	Sodium	9820	ug/L
	Thallium	0.0131J	ug/L
	Tin	0.104J	ug/L
	Vanadium	5.87	ug/L
	Zinc	15.8	ug/L
Metals Department	Mercury	7.16	ng/L
Semivolatile Organic Fuels	Residual Range Organics	0.160J	mg/L
Volatile GC/MS	Trichloroethene	3.39	ug/L
Waters Department	Alkalinity	70.9	mg/L
	Chloride	28.9	mg/L
	Fluoride	0.112J	mg/L
	рН	7.30	pH units
	Sulfate	3.48	mg/L
	Total Dissolved Solids	151	mg/L
	Total Suspended Solids	120	ma/l

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Turbidity

NTU

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	Detectable Results Summary							
Client Sample ID: EBF-Lot H1558								
Lab Sample ID: 1164639010	Parameter	Result	Units					
Dissolved Metals by ICP/MS	Aluminum	2.03	ug/L					
,	Barium	0.0550J	ug/L					
	Boron	8.16	ug/L					
	Chromium	0.239J	ug/L					
	Iron	6.33J	ug/L					
	Manganese	0.0925J	ug/L					
	Nickel	0.123J	ug/L					
	Silicon	66.4J	ug/L					
	Zinc	1.42J	ug/L					
Client Sample ID: EBT-0816								
Lab Sample ID: 1164639011	Parameter	Result	Units					
Metals by ICP/MS	Aluminum	3.07	ug/L					
	Barium	0.0559J	ug/L					
	Boron	8.09	ug/L					
	Iron	9.51J	ug/L					
	Manganese	0.0714J	ug/L					
	Nickel	0.0819J	ug/L					
	Vanadium	0.883J	ug/L					
	Zinc	1.47J	ug/L					
Client Sample ID: OW-3								
Lab Sample ID: 1164639015	Parameter	Result	Units					
Dissolved Metals	Mercury	0.557J	na/L					
Dissolved Metals by ICP/MS	Aluminum	2.53	ug/L					
	Antimony	0.377	ug/L					
	Arsenic	2.76	ug/L					
	Barium	46.9	ug/L					
	Boron	4.26J	ug/L					
	Calcium	15900	ug/L					
	Chromium	1.80	ug/L					
	Cobalt	0.386	ug/L					
	Copper	0.217J	ug/L					
	Hardness as CaCO3	65.0	mg/L					
	Iron	6200	ug/L					
	Magnesium	6150	ug/L					
	Manganese	450	ug/L					
	Molybdenum	0.623	ug/L					
	Nickel	5.30	ug/L					
	Potassium	2100	ug/L					
	Silicon	16000	ug/L					
	Sodium	8310	ug/L					
	Vanadium	1.79	ug/L					
	Zinc	3.01J	ug/L					
			5					

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#### **Detectable Results Summary**

Client Sample ID: **OW-1** Lab Sample ID: 1164639016 **Dissolved Metals Dissolved Metals by ICP/MS** 

Parameter	Result	Units
Mercury	0.501J	ng/L
Aluminum	1.23J	ug/L
Antimony	0.135	ug/L
Arsenic	1.27	ug/L
Barium	82.4	ug/L
Boron	4.23J	ug/L
Calcium	24100	ug/L
Cobalt	0.161	ug/L
Copper	0.262J	ug/L
Hardness as CaCO3	85.5	mg/L
Iron	5950	ug/L
Magnesium	6120	ug/L
Manganese	957	ug/L
Molybdenum	0.300	ug/L
Nickel	2.28	ug/L
Potassium	2390	ug/L
Silicon	14100	ug/L
Sodium	8660	ug/L
Vanadium	0.479J	ug/L
Zinc	2.83J	ug/L

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#### Results of OW-4-0816

Client Sample ID: **OW-4-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639001 Lab Project ID: 1164639 Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	2660	20.0	6.20	ug/L	25		08/19/16 10:41
Antimony	7.75	0.0500	0.0150	ug/L	2.5		08/19/16 09:53
Arsenic	131	0.800	0.200	ug/L	2.5		08/19/16 09:53
Barium	83.1	0.250	0.0400	ug/L	2.5		08/19/16 09:53
Beryllium	0.215	0.0500	0.0250	ug/L	2.5		08/19/16 09:53
Bismuth	0.161	0.0500	0.0150	ug/L	2.5		08/19/16 09:53
Boron	30.1	5.00	1.50	ug/L	2.5		08/19/16 09:53
Cadmium	0.100	0.0500	0.0150	ug/L	2.5		08/19/16 09:53
Calcium	18500	50.0	15.0	ug/L	2.5		08/19/16 09:53
Chromium	21.5	0.500	0.150	ug/L	2.5		08/19/16 09:53
Cobalt	4.93	0.0200	0.0100	ug/L	2.5		08/19/16 09:53
Copper	27.5	0.500	0.200	ug/L	2.5		08/19/16 09:53
Iron	55000	200	62.0	ug/L	25		08/19/16 10:41
Lead	10.7	0.100	0.0310	ug/L	2.5		08/19/16 09:53
Magnesium	7750	20.0	6.20	ug/L	2.5		08/19/16 09:53
Manganese	357	0.100	0.0310	ug/L	2.5		08/19/16 09:53
Molybdenum	2.05	0.0500	0.0150	ug/L	2.5		08/19/16 09:53
Nickel	20.2	0.620	0.0620	ug/L	2.5		08/19/16 09:53
Potassium	7260	50.0	15.0	ug/L	2.5		08/19/16 09:53
Selenium	0.575 J	1.00	0.310	ug/L	2.5		08/19/16 09:53
Silver	0.210	0.0200	0.00620	ug/L	2.5		08/19/16 09:53
Sodium	10700	100	31.0	ug/L	2.5		08/19/16 09:53
Thallium	0.0393	0.0200	0.00620	ug/L	2.5		08/19/16 09:53
Tin	0.219	0.200	0.0620	ug/L	2.5		08/19/16 09:53
Vanadium	131	1.00	0.310	ug/L	2.5		08/19/16 09:53
Zinc	32.4	3.10	0.400	ug/L	2.5		08/19/16 09:53

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 08/19/16 10:41 Container ID: 1164639001-D Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/02/2016 5:22:47PM

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Results of OW-4-0816							
Client Sample ID: <b>OW-4-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> Lab Sample ID: 1164639001 Lab Project ID: 1164639	t APT Event A	Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by Metals Department			_				
<u>Parameter</u> Mercury	<u>Result</u> Qual 75.1	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 08/29/16 15:04
Batch Information							
Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 08/29/16 15:04 Container ID: 1164639001-E			Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	MXX30134 : METHOD me: 08/26/1 /t./Vol.: 50 r Vol: 50 mL	16 15:00 mL		

Print Date: 09/02/2016 5:22:47PM

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Results of OW-4-0816

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Client Sample ID: **OW-4-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639001 Lab Project ID: 1164639

Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Organochlorinated Pesticides by GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	Limits	Date Analyzed
4,4'-DDD	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
4,4'-DDE	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
4,4'-DDT	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
Aldrin	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
alpha-BHC	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
alpha-Chlordane	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
beta-BHC	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
delta-BHC	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
Dieldrin	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
Endosulfan I	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
Endosulfan II	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
Endosulfan sulfate	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
Endrin	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
Endrin aldehyde	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
Endrin ketone	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
gamma-BHC (Lindane)	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
gamma-Chlordane	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
Heptachlor	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
Heptachlor epoxide	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
Methoxychlor	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:19
Toxaphene	1.02 U	2.04	0.633	ug/L	1		08/17/16 19:19
Surrogates							
2-Fluorobiphenyl (surr)	58.5	53-106		%	1		08/17/16 19:19
Terphenyl-d14 (surr)	51.9 *	58-132		%	1		08/17/16 19:19

#### **Batch Information**

Analytical Batch: XMS9554 Analytical Method: 8270D SIM (PEST) Analyst: DSH Analytical Date/Time: 08/17/16 19:19 Container ID: 1164639001-V Prep Batch: XXX36071 Prep Method: SW3520C Prep Date/Time: 08/17/16 10:13 Prep Initial Wt./Vol.: 980 mL Prep Extract Vol: 1 mL

Print Date: 09/02/2016 5:22:47PM

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## Results of OW-4-0816

Client Sample ID: **OW-4-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639001 Lab Project ID: 1164639 Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Polychlorinated Biphenyls

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	Units	DF	Limits	Date Analyzed
Aroclor-1016	0.200 U	0.400	0.120	ug/L	1		08/18/16 16:59
Aroclor-1221	0.500 U	1.00	0.310	ug/L	1		08/18/16 16:59
Aroclor-1232	0.0500 U	0.100	0.0310	ug/L	1		08/18/16 16:59
Aroclor-1242	0.0500 U	0.100	0.0310	ug/L	1		08/18/16 16:59
Aroclor-1248	0.0500 U	0.100	0.0310	ug/L	1		08/18/16 16:59
Aroclor-1254	0.0500 U	0.100	0.0310	ug/L	1		08/18/16 16:59
Aroclor-1260	0.0500 U	0.100	0.0310	ug/L	1		08/18/16 16:59
Surrogates							
Decachlorobiphenyl (surr)	97	40-135		%	1		08/18/16 16:59
Batch Information							

Analytical Batch: XGC9464 Analytical Method: SW8082A Analyst: S.G Analytical Date/Time: 08/18/16 16:59 Container ID: 1164639001-T Prep Batch: XXX36075 Prep Method: SW3520C Prep Date/Time: 08/17/16 15:07 Prep Initial Wt./Vol.: 1000 mL Prep Extract Vol: 1 mL

Print Date: 09/02/2016 5:22:47PM

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Results of OW-4-0816							
Client Sample ID: <b>OW-4-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> Lab Sample ID: 1164639001 Lab Project ID: 1164639	t APT Event A	Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%):					
Results by Semivolatile Organic Fuel	S						
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.395 J	<u>LOQ/CL</u> 0.577	<u>DL</u> 0.173	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 08/25/16 02:05
Surrogates 5a Androstane (surr)	88.2	50-150		%	1		08/25/16 02:05
Batch Information							
Analytical Batch: XFC12745 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 08/25/16 02:05 Container ID: 1164639001-O			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36133 : SW3520C me: 08/24/ [,] /t./Vol.: 26C Vol: 1 mL	; 16 09:07 ) mL		
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.476 J	<u>LOQ/CL</u> 0.481	<u>DL</u> 0.144	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/25/16 02:05
Surrogates							
n-Triacontane-d62 (surr)	95.7	50-150		%	1		08/25/16 02:05
Batch Information							
Analytical Batch: XFC12745 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 08/25/16 02:05 Container ID: 1164639001-O			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36133 : SW3520C me: 08/24/′ /t./Vol.: 260 Vol: 1 mL	) 16 09:07 0 mL		
Print Date: 09/02/2016 5:22:47PM						J flaggin	g is activated

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Results of OW-4-0816

Client Sample ID: **OW-4-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639001 Lab Project ID: 1164639 Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Semivolatile Organics GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1,2,4-Trichlorobenzene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
1,2-Dichlorobenzene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
1,3-Dichlorobenzene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
1,4-Dichlorobenzene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
1-Chloronaphthalene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
1-Methylnaphthalene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
2,4,5-Trichlorophenol	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
2,4,6-Trichlorophenol	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
2,4-Dichlorophenol	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
2,4-Dimethylphenol	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
2,4-Dinitrophenol	0.0257 U	0.0515	0.0155	mg/L	1		08/22/16 20:02
2,4-Dinitrotoluene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
2,6-Dichlorophenol	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
2,6-Dinitrotoluene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
2-Chloronaphthalene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
2-Chlorophenol	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
2-Methyl-4,6-dinitrophenol	0.0257 U	0.0515	0.0155	mg/L	1		08/22/16 20:02
2-Methylnaphthalene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
2-Methylphenol (o-Cresol)	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
2-Nitroaniline	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
2-Nitrophenol	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
3&4-Methylphenol (p&m-Cresol)	0.0103 U	0.0206	0.00639	mg/L	1		08/22/16 20:02
3,3-Dichlorobenzidine	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
3-Nitroaniline	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
4-Bromophenyl-phenylether	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
4-Chloro-3-methylphenol	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
4-Chloroaniline	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
4-Chlorophenyl-phenylether	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
4-Nitroaniline	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
4-Nitrophenol	0.0257 U	0.0515	0.0155	mg/L	1		08/22/16 20:02
Acenaphthene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Acenaphthylene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Aniline	0.0257 U	0.0515	0.0155	mg/L	1		08/22/16 20:02
Anthracene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Azobenzene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Benzo(a)Anthracene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Benzo[a]pyrene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02

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#### Results of OW-4-0816

Client Sample ID: **OW-4-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639001 Lab Project ID: 1164639 Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Semivolatile Organics GC/MS

Parameter	Result Qual			Linite	DE	Allowable	Date Analyzed
Renzo[b]Fluoranthene	0 00515 U	0.0103	0.00320	ma/l	1		08/22/16 20:02
Benzola h ilpervlene	0.00515 U	0.0103	0.00320	ma/l	1		08/22/16 20:02
Benzo[k]fluoranthene	0.00515 U	0.0103	0.00320	ma/l	1		08/22/16 20:02
Benzoic acid	0.0257 U	0.0515	0.0155	ma/l	1		08/22/16 20:02
Benzyl alcohol	0.00515 U	0.0103	0.00320	ma/L	1		08/22/16 20:02
Bis(2chloro1methylethyl)Ether	0.00515 U	0.0103	0.00320	ma/L	1		08/22/16 20:02
Bis(2-Chloroethoxy)methane	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Bis(2-Chloroethyl)ether	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
bis(2-Ethylhexyl)phthalate	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Butylbenzylphthalate	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Carbazole	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Chrysene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Dibenzo[a,h]anthracene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Dibenzofuran	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Diethylphthalate	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Dimethylphthalate	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Di-n-butylphthalate	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
di-n-Octylphthalate	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Fluoranthene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Fluorene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Hexachlorobenzene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Hexachlorobutadiene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Hexachlorocyclopentadiene	0.0155 U	0.0309	0.00969	mg/L	1		08/22/16 20:02
Hexachloroethane	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Indeno[1,2,3-c,d] pyrene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Isophorone	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Naphthalene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Nitrobenzene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
N-Nitrosodimethylamine	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
N-Nitroso-di-n-propylamine	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
N-Nitrosodiphenylamine	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Pentachlorophenol	0.0257 U	0.0515	0.0155	mg/L	1		08/22/16 20:02
Phenanthrene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Phenol	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Pyrene	0.00515 U	0.0103	0.00320	mg/L	1		08/22/16 20:02
Surrogates							
2,4,6-Tribromophenol (surr)	62	43-140		%	1		08/22/16 20:02

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## Results of OW-4-0816

Client Sample ID: **OW-4-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639001 Lab Project ID: 1164639 Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Semivolatile Organics GC/MS

						Allowable	
<u>Parameter</u>	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
2-Fluorobiphenyl (surr)	55.9	44-119		%	1		08/22/16 20:02
2-Fluorophenol (surr)	44.5	19-119		%	1		08/22/16 20:02
Nitrobenzene-d5 (surr)	52.6	44-120		%	1		08/22/16 20:02
Phenol-d6 (surr)	43.2	10-115		%	1		08/22/16 20:02
Terphenyl-d14 (surr)	89.4	50-134		%	1		08/22/16 20:02

## **Batch Information**

Analytical Batch: XMS9556 Analytical Method: SW8270D Analyst: DSH Analytical Date/Time: 08/22/16 20:02 Container ID: 1164639001-I Prep Batch: XXX36072 Prep Method: SW3520C Prep Date/Time: 08/17/16 10:13 Prep Initial Wt./Vol.: 970 mL Prep Extract Vol: 1 mL

Print Date: 09/02/2016 5:22:47PM

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Results of <b>OW-4-0816</b> Client Sample ID: <b>OW-4-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> Lab Sample ID: 1164639001 Lab Project ID: 1164639	t APT Event A	C R M Si La	ollection Da eceived Dat atrix: Water olids (%): ocation:	und)			
Results by Volatile Fuels							
Parameter Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/15/16 03:05
urrogates 4-Bromofluorobenzene (surr)	91.4	50-150		%	1		08/15/16 03:05
Batch Information Analytical Batch: VFC13222 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 08/15/16 03:05 Container ID: 1164639001-K		F F F	Prep Batch: \ Prep Method: Prep Date/Tin Prep Initial W Prep Extract \	VXX29345 SW5030E ne: 08/14/′ t./Vol.: 5 m Vol: 5 mL	3 16 06:00 IL		
Print Date: 09/02/2016 5:22:47PM						J flaggin	g is activated

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#### Results of OW-4-0816

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Client Sample ID: **OW-4-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639001 Lab Project ID: 1164639 Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Volatile GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:24
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:24
1,1,2-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:24
1,2-Dibromoethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:24
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:24
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:24
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:24
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:24
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:24
Benzene	0.200 U	0.400	0.120	ug/L	1		08/17/16 22:24
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:24
Bromoform	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Bromomethane	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:24
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:24
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:24
Chloroethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24

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#### Results of OW-4-0816

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Client Sample ID: **OW-4-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639001 Lab Project ID: 1164639 Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	<u>Allowable</u> Limits	Date Analyzed
Chloroform	0.500 U	1.00	0.300	ug/L	1		08/17/16 22:24
Chloromethane	0.390 J	1.00	0.310	ug/L	1		08/17/16 22:24
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:24
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:24
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Freon-113	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:24
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Methylene chloride	2.50 U	5.00	1.00	ug/L	1		08/17/16 22:24
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:24
Naphthalene	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:24
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/17/16 22:24
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Styrene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Toluene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Trichloroethene	13.1	1.00	0.310	ug/L	1		08/17/16 22:24
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:24
Vinyl chloride	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:24
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/17/16 22:24
Surrogates							
1,2-Dichloroethane-D4 (surr)	99.5	81-118		%	1		08/17/16 22:24
4-Bromofluorobenzene (surr)	101	85-114		%	1		08/17/16 22:24
Toluene-d8 (surr)	105	89-112		%	1		08/17/16 22:24

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#### Results of OW-4-0816

Client Sample ID: **OW-4-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639001 Lab Project ID: 1164639 Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Volatile GC/MS

#### **Batch Information**

Analytical Batch: VMS16087 Analytical Method: SW8260B Analyst: TJT Analytical Date/Time: 08/17/16 22:24 Container ID: 1164639001-H Prep Batch: VXX29390 Prep Method: SW5030B Prep Date/Time: 08/17/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

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Results of OW-4-0816								
Client Sample ID: <b>OW-4-0816</b> Client Project ID: <b>Kenai Wells-August APT Event A</b> Lab Sample ID: 1164639001 Lab Project ID: 1164639		Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Waters Department			<u> </u>					
<u>Parameter</u> Chloride Fluoride Nitrate-N Nitrite-N Sulfate	Result Qual 11.0 0.168 J 0.105 J 0.100 U 2.73	LOQ/CL 0.200 0.200 0.200 0.200 0.200 0.200	DL 0.0620 0.0620 0.0620 0.0620 0.0620	<u>Units</u> mg/L mg/L mg/L mg/L	DF 1 1 1 1	<u>Allowable</u> <u>Limits</u>	Date Analyzec 08/11/16 14:58 08/11/16 14:58 08/11/16 14:58 08/11/16 14:58 08/11/16 14:58	
Batch Information Analytical Batch: WIC5558 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 08/11/16 14:58 Container ID: 1164639001-B		Prep Batch: WXX11589 Prep Method: METHOD Prep Date/Time: 08/10/16 13:05 Prep Initial Wt./Vol.: 10 mL Prep Extract Vol: 10 mL						
Parameter Chemical Oxygen Demand	<u>Result Qual</u> 30.0	<u>LOQ/CL</u> 20.0	<u>DL</u> 6.20	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/16/16 15:3	
Batch Information Analytical Batch: WSP5345 Analytical Method: EPA 410.4 Analyst: KBE Analytical Date/Time: 08/16/16 15:30 Container ID: 1164639001-P								
<u>Parameter</u> Total Organic Carbon	Result Qual 2.47	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/17/16 12:2	
Batch Information								
Analytical Batch: WTC2618 Analytical Method: SM 5310B Analyst: VDL Analytical Date/Time: 08/17/16 12:20 Container ID: 1164639001-R								
<u>Parameter</u> Turbidity	<u>Result Qual</u> 200	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzec</u> 08/11/16 15:5	
int Date: 09/02/2016 5:22:47PM						J flaggin	g is activated	

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Results of OW-4-0816									
Client Sample ID: <b>OW-4-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> t Lab Sample ID: 1164639001 Lab Project ID: 1164639	t APT Event A	C R M S	ollection D eceived Da latrix: Wate olids (%): ocation:	on Date: 08/10/16 16:25 d Date: 08/11/16 11:00 Water (Surface, Eff., Ground) %): n:					
Results by Waters Department									
Batch Information									
Analytical Batch: WAT10711 Analytical Method: SM21 2130B Analyst: NEG Analytical Date/Time: 08/11/16 15:50 Container ID: 1164639001-A									
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 76.9	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 08/15/16 21:47		
Batch Information									
Analytical Batch: WTI4499 Analytical Method: SM21 2320B Analyst: ACF Analytical Date/Time: 08/15/16 21:47 Container ID: 1164639001-X									
<u>Parameter</u> Total Solids	<u>Result Qual</u> 232	<u>LOQ/CL</u> 10.0	<u>DL</u> 10.0	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 08/19/16 15:00		
Batch Information									
Analytical Batch: STS5157 Analytical Method: SM21 2540B Analyst: LLP Analytical Date/Time: 08/19/16 15:00 Container ID: 1164639001-S									
Parameter Total Dissolved Solids	<u>Result Qual</u> 74.0	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 08/15/16 14:17		
Batch Information									
Analytical Batch: STS5150 Analytical Method: SM21 2540C Analyst: LLP Analytical Date/Time: 08/15/16 14:17 Container ID: 1164639001-A									
Parameter	<u>Result Qual</u>	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Allowable</u> Limits	Date Analyzed		
Print Date: 09/02/2016 5:22:47PM						J flaggin	g is activated		
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Results of <b>OW-4-0816</b>							
Client Sample ID: <b>OW-4-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> Lab Sample ID: 1164639001 Lab Project ID: 1164639	t APT Event A	Ci Ri M Si Lo	ollection Da eceived Dat atrix: Water olids (%): ocation:	6 16:25 5 11:00 Eff., Gro	und)		
Results by Waters Department							
<u>Parameter</u> Total Suspended Solids	<u>Result Qual</u> 117	<u>LOQ/CL</u> 13.3	<u>DL</u> 4.13	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/15/16 08:39
Batch Information Analytical Batch: STS5149 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 08/15/16 08:39 Container ID: 1164639001-C							
Parameter pH	<u>Result Qual</u> 8.50	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzec</u> 08/15/16 21:4
Analytical Batch: WTI4497 Analytical Method: SM21 4500-H B Analyst: ACF Analytical Date/Time: 08/15/16 21:47 Container ID: 1164639001-X							
<u>Parameter</u> Total Kjeldahl Nitrogen	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.310	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	<u>Date Analyzed</u> 08/24/16 16:0
Batch Information Analytical Batch: WDA3843 Analytical Method: SM21 4500-N D Analyst: NEG Analytical Date/Time: 08/24/16 16:01 Container ID: 1164639001-P		F F F F	Prep Batch: V Prep Method: Prep Date/Tir Prep Initial W Prep Extract V	WXX11606 METHOD ne: 08/23/16 't./Vol.: 25 m Vol: 25 mL	) 18:00 L		
<u>Parameter</u> Ammonia-N	<u>Result Qual</u> 0.186	LOQ/CL 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 08/16/16 14:1
int Date: 09/02/2016 5:22:47PM						J flagging	g is activated
rint Date: 09/02/2016 5:22:47PM	00 West Potter Driv	ve Anchorage	, AK 95518			J flaggin	g is activate

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Results of OW-4-0816									
Client Sample ID: <b>OW-4-0816</b> Client Project ID: <b>Kenai Wells-August</b> Lab Sample ID: 1164639001 Lab Project ID: 1164639	APT Event A	Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%):							
Results by Waters Department									
Batch Information									
Analytical Batch: WDA3838 Analytical Method: SM21 4500-NH3 G Analyst: NEG Analytical Date/Time: 08/16/16 14:19 Container ID: 1164639001-P			Prep Batch: V Prep Method: Prep Date/Tim Prep Initial Wt Prep Extract V	WXX11601 METHOD ne: 08/16/ [.] /Vol.: 6 m /ol: 6 mL	) 16 13:00 nL				
Deservator	Desult Quel	1.00/01		Linita	DE	Allowable	Data Analyzad		
Parameter Ortho Phosphate-P	<u>Result Qual</u> 0.0587	0.0100	<u>DL</u> 0.00310	<u>Units</u> ma/l	<u>DF</u> 1	Limits	08/11/16 15:36		
Total Phosphorus	0.396	0.100	0.0310	mg/L	1		08/17/16 12:21		
Batch Information									
Analytical Batch: WDA3834 Analytical Method: SM21 4500P-B,E Analyst: NEG Analytical Date/Time: 08/11/16 15:36 Container ID: 1164639001-Q			Prep Batch: V Prep Method: Prep Date/Tim Prep Initial Wt Prep Extract V	VXX11592 SM21 450 ne: 08/11/ /Vol.: 25 /ol: 25 mL	2 00P-B,E 16 15:00 mL				
Analytical Batch: WDA3839 Analytical Method: SM21 4500P-B,E Analyst: NEG Analytical Date/Time: 08/17/16 12:21 Container ID: 1164639001-P			Prep Batch: V Prep Method: Prep Date/Tim Prep Initial Wt Prep Extract V	VXX11595 SM21 450 ne: 08/16/ ./Vol.: 2.5 /ol: 25 mL	00P-B,E 16 12:30 mL				
Print Date: 00/02/2046 5:22:47DM						L flamm'			

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#### Results of OW-2-0816

Client Sample ID: **OW-2-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639002 Lab Project ID: 1164639 Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Metals by ICP/MS

					Allowable	
Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
3800	20.0	6.20	ug/L	25		08/19/16 10:44
1.71	0.0500	0.0150	ug/L	2.5		08/19/16 09:56
49.5	0.800	0.200	ug/L	2.5		08/19/16 09:56
61.4	0.250	0.0400	ug/L	2.5		08/19/16 09:56
0.0910	0.0500	0.0250	ug/L	2.5		08/19/16 09:56
0.0971	0.0500	0.0150	ug/L	2.5		08/19/16 09:56
121	5.00	1.50	ug/L	2.5		08/19/16 09:56
0.0738	0.0500	0.0150	ug/L	2.5		08/19/16 09:56
7200	50.0	15.0	ug/L	2.5		08/19/16 09:56
16.8	0.500	0.150	ug/L	2.5		08/19/16 09:56
2.03	0.0200	0.0100	ug/L	2.5		08/19/16 09:56
13.0	0.500	0.200	ug/L	2.5		08/19/16 09:56
16500	20.0	6.20	ug/L	2.5		08/19/16 09:56
2.52	0.100	0.0310	ug/L	2.5		08/19/16 09:56
4530	20.0	6.20	ug/L	2.5		08/19/16 09:56
220	0.100	0.0310	ug/L	2.5		08/19/16 09:56
5.35	0.0500	0.0150	ug/L	2.5		08/19/16 09:56
13.6	0.620	0.0620	ug/L	2.5		08/19/16 09:56
7610	50.0	15.0	ug/L	2.5		08/19/16 09:56
0.500 U	1.00	0.310	ug/L	2.5		08/19/16 09:56
0.0429	0.0200	0.00620	ug/L	2.5		08/19/16 09:56
25700	1000	310	ug/L	25		08/19/16 10:44
0.0275	0.0200	0.00620	ug/L	2.5		08/19/16 09:56
0.201	0.200	0.0620	ug/L	2.5		08/19/16 09:56
19.3	1.00	0.310	ug/L	2.5		08/19/16 09:56
12.0	3.10	0.400	ug/L	2.5		08/19/16 09:56
	Result Qual38001.7149.561.40.09100.09711210.0738720016.82.0313.0165002.5245302205.3513.676100.500 U0.0429257000.20119.312.0	Result QualLOQ/CL380020.01.710.050049.50.80061.40.2500.09100.05000.09710.05001215.000.07380.0500720050.016.80.5002.030.020013.00.5001650020.02.520.100453020.02200.1005.350.050013.60.620761050.00.500 U1.000.04290.02002570010000.02750.020019.31.0012.03.10	Result QualLOQ/CLDL380020.06.201.710.05000.015049.50.8000.20061.40.2500.04000.09100.05000.02500.09710.05000.01501215.001.500.07380.05000.0150720050.015.016.80.5000.1502.030.02000.010013.00.5000.2001650020.06.202.520.1000.0310453020.06.202200.1000.03105.350.05000.015013.60.6200.0620761050.015.00.500 U1.000.3100.04290.02000.006202570010003100.02750.02000.0062019.31.000.31012.03.100.400	Result QualLOQ/CLDLUnits380020.06.20ug/L1.710.05000.0150ug/L49.50.8000.200ug/L61.40.2500.0400ug/L0.09100.05000.0250ug/L0.09710.05000.0150ug/L1215.001.50ug/L720050.015.0ug/L16.80.5000.150ug/L13.00.5000.200ug/L1453020.06.20ug/L15.520.1000.0310ug/L13.60.6200.0150ug/L13.60.6200.0150ug/L13.60.6200.0620ug/L13.60.6200.0620ug/L13.60.6200.0620ug/L13.60.02000.00620ug/L13.60.02000.00620ug/L0.04290.02000.00620ug/L0.02750.02000.00620ug/L19.31.000.310ug/L12.03.100.400ug/L	Result QualLOQ/CLDLUnitsDF380020.06.20ug/L251.710.05000.0150ug/L2.549.50.8000.200ug/L2.561.40.2500.0400ug/L2.50.09100.05000.0250ug/L2.50.09710.05000.0150ug/L2.51215.001.50ug/L2.50.07380.05000.0150ug/L2.5720050.015.0ug/L2.516.80.5000.150ug/L2.513.00.5000.0100ug/L2.51450020.06.20ug/L2.51550020.06.20ug/L2.51650020.06.20ug/L2.513.00.5000.0310ug/L2.515350.05000.0150ug/L2.513.60.6200.0620ug/L2.513.60.6200.0620ug/L2.5761050.015.0ug/L2.50.500 U1.000.310ug/L2.50.500 U1.000.310ug/L2.50.04290.02000.0620ug/L2.50.02750.02000.00620ug/L2.519.31.000.310ug/L2.512.03.100.400ug/L2.5	Result Qual         LOQ/CL         DL         Units         DF         Limits           3800         20.0         6.20         ug/L         25           1.71         0.0500         0.0150         ug/L         2.5           49.5         0.800         0.200         ug/L         2.5           61.4         0.250         0.0400         ug/L         2.5           0.0910         0.0500         0.0250         ug/L         2.5           0.0971         0.0500         0.0150         ug/L         2.5           121         5.00         1.50         ug/L         2.5           7200         50.0         15.0         ug/L         2.5           16.8         0.500         0.150         ug/L         2.5           13.0         0.500         0.200         ug/L         2.5           146500         20.0         6.20         ug/L         2.5           15.0         ug/L         2.5         2.5         2.5           16500         20.0         6.20         ug/L         2.5           13.6         0.620         ug/L         2.5         3.5           13.6         0.620         ug/

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 08/19/16 10:44 Container ID: 1164639002-D Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/02/2016 5:22:47PM

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SGS				S US/	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential Iwater Quality port - Event 2 I6-004 Rev. 0 16-Dec-16
Results of OW-2-0816							
Client Sample ID: <b>OW-2-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> Lab Sample ID: 1164639002 Lab Project ID: 1164639	t APT Event A		Collection Da Received Da Matrix: Wate Solids (%): Location:	und)			
Results by Metals Department							
<u>Parameter</u> Mercury	<u>Result</u> Qual 9.19	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 08/29/16 15:08
Batch Information							
Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 08/29/16 15:08 Container ID: 1164639002-E			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30134 I: METHOD me: 08/26/1 Vt./Vol.: 50 r Vol: 50 mL	16 15:00 mL		
rint Date: 09/02/2016 5:22:47PM						J flaggin	g is activated



Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Client Sample ID: **OW-2-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639002 Lab Project ID: 1164639

Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Organochlorinated Pesticides by GC/MS

						Allowable	
<u>Parameter</u>	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
4,4'-DDD	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
4,4'-DDE	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
4,4'-DDT	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
Aldrin	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
alpha-BHC	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
alpha-Chlordane	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
beta-BHC	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
delta-BHC	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
Dieldrin	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
Endosulfan I	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
Endosulfan II	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
Endosulfan sulfate	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
Endrin	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
Endrin aldehyde	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
Endrin ketone	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
gamma-BHC (Lindane)	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
gamma-Chlordane	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
Heptachlor	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
Heptachlor epoxide	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
Methoxychlor	0.0155 U	0.0309	0.00969	ug/L	1		08/17/16 19:35
Toxaphene	1.03 U	2.06	0.639	ug/L	1		08/17/16 19:35
Surrogates							
2-Fluorobiphenyl (surr)	41.9 *	53-106		%	1		08/17/16 19:35
Terphenyl-d14 (surr)	47.1 *	58-132		%	1		08/17/16 19:35

### **Batch Information**

Analytical Batch: XMS9554 Analytical Method: 8270D SIM (PEST) Analyst: DSH Analytical Date/Time: 08/17/16 19:35 Container ID: 1164639002-V Prep Batch: XXX36071 Prep Method: SW3520C Prep Date/Time: 08/17/16 10:13 Prep Initial Wt./Vol.: 970 mL Prep Extract Vol: 1 mL

Print Date: 09/02/2016 5:22:47PM

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Client Sample ID: **OW-2-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639002 Lab Project ID: 1164639 Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Polychlorinated Biphenyls

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	Units	DF	Limits	Date Analyzed
Aroclor-1016	0.208 U	0.417	0.125	ug/L	1		08/18/16 17:09
Aroclor-1221	0.520 U	1.04	0.323	ug/L	1		08/18/16 17:09
Aroclor-1232	0.0520 U	0.104	0.0323	ug/L	1		08/18/16 17:09
Aroclor-1242	0.0520 U	0.104	0.0323	ug/L	1		08/18/16 17:09
Aroclor-1248	0.0520 U	0.104	0.0323	ug/L	1		08/18/16 17:09
Aroclor-1254	0.0520 U	0.104	0.0323	ug/L	1		08/18/16 17:09
Aroclor-1260	0.0520 U	0.104	0.0323	ug/L	1		08/18/16 17:09
Surrogates							
Decachlorobiphenyl (surr)	96	40-135		%	1		08/18/16 17:09
Batch Information							

Analytical Batch: XGC9464 Analytical Method: SW8082A Analyst: S.G Analytical Date/Time: 08/18/16 17:09 Container ID: 1164639002-T Prep Batch: XXX36075 Prep Method: SW3520C Prep Date/Time: 08/17/16 15:07 Prep Initial Wt./Vol.: 960 mL Prep Extract Vol: 1 mL

Print Date: 09/02/2016 5:22:47PM

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Results of OW-2-0816							
Client Sample ID: <b>OW-2-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> Lab Sample ID: 1164639002 Lab Project ID: 1164639	at APT Event A		Collection Da Received Da Matrix: Wate Solids (%): Location:	16 11:45 16 11:00 Eff., Gro	und)		
Results by Semivolatile Organic Fue	s						
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.278 U	<u>LOQ/CL</u> 0.556	<u>DL</u> 0.167	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 08/24/16 19:32
<b>Surrogates</b> 5a Androstane (surr)	61.5	50-150		%	1		08/24/16 19:32
Batch Information							
Analytical Batch: XFC12742 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 08/24/16 19:32 Container ID: 1164639002-N			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36128 I: SW3520C me: 08/23/1 /t./Vol.: 270 Vol: 1 mL	) 16 16:57 ) mL		
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.192 J	<u>LOQ/CL</u> 0.463	<u>DL</u> 0.139	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/24/16 19:32
Surrogates							
n-Triacontane-d62 (surr)	66.2	50-150		%	1		08/24/16 19:32
Batch Information							
Analytical Batch: XFC12742 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 08/24/16 19:32 Container ID: 1164639002-N			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36128 l: SW3520C me: 08/23/1 Vt./Vol.: 270 Vol: 1 mL	) 16 16:57 ) mL		
Print Date: 09/02/2016 5:22:47PM						J flaggin	g is activated

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Client Sample ID: **OW-2-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639002 Lab Project ID: 1164639 Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Semivolatile Organics GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
1,2,4-Trichlorobenzene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
1,2-Dichlorobenzene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
1,3-Dichlorobenzene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
1,4-Dichlorobenzene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
1-Chloronaphthalene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
1-Methylnaphthalene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
2,4,5-Trichlorophenol	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
2,4,6-Trichlorophenol	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
2,4-Dichlorophenol	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
2,4-Dimethylphenol	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
2,4-Dinitrophenol	0.0255 U	0.0510	0.0153	mg/L	1		08/22/16 20:20
2,4-Dinitrotoluene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
2,6-Dichlorophenol	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
2,6-Dinitrotoluene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
2-Chloronaphthalene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
2-Chlorophenol	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
2-Methyl-4,6-dinitrophenol	0.0255 U	0.0510	0.0153	mg/L	1		08/22/16 20:20
2-Methylnaphthalene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
2-Methylphenol (o-Cresol)	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
2-Nitroaniline	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
2-Nitrophenol	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
3&4-Methylphenol (p&m-Cresol)	0.0102 U	0.0204	0.00633	mg/L	1		08/22/16 20:20
3,3-Dichlorobenzidine	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
3-Nitroaniline	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
4-Bromophenyl-phenylether	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
4-Chloro-3-methylphenol	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
4-Chloroaniline	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
4-Chlorophenyl-phenylether	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
4-Nitroaniline	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
4-Nitrophenol	0.0255 U	0.0510	0.0153	mg/L	1		08/22/16 20:20
Acenaphthene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Acenaphthylene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Aniline	0.0255 U	0.0510	0.0153	mg/L	1		08/22/16 20:20
Anthracene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Azobenzene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Benzo(a)Anthracene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Benzo[a]pyrene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20

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#### Results of OW-2-0816

Client Sample ID: **OW-2-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639002 Lab Project ID: 1164639 Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Allowable Limits	Date Analyzed
Benzo[b]Fluoranthene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Benzo[g,h,i]perylene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Benzo[k]fluoranthene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Benzoic acid	0.0255 U	0.0510	0.0153	mg/L	1		08/22/16 20:20
Benzyl alcohol	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Bis(2chloro1methylethyl)Ether	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Bis(2-Chloroethoxy)methane	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Bis(2-Chloroethyl)ether	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
bis(2-Ethylhexyl)phthalate	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Butylbenzylphthalate	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Carbazole	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Chrysene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Dibenzo[a,h]anthracene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Dibenzofuran	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Diethylphthalate	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Dimethylphthalate	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Di-n-butylphthalate	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
di-n-Octylphthalate	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Fluoranthene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Fluorene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Hexachlorobenzene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Hexachlorobutadiene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Hexachlorocyclopentadiene	0.0153 U	0.0306	0.00959	mg/L	1		08/22/16 20:20
Hexachloroethane	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Indeno[1,2,3-c,d] pyrene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Isophorone	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Naphthalene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Nitrobenzene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
N-Nitrosodimethylamine	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
N-Nitroso-di-n-propylamine	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
N-Nitrosodiphenylamine	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Pentachlorophenol	0.0255 U	0.0510	0.0153	mg/L	1		08/22/16 20:20
Phenanthrene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Phenol	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Pyrene	0.00510 U	0.0102	0.00316	mg/L	1		08/22/16 20:20
Surrogates							
2,4,6-Tribromophenol (surr)	61.8	43-140		%	1		08/22/16 20:20

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Client Sample ID: **OW-2-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639002 Lab Project ID: 1164639 Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Semivolatile Organics GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
2-Fluorobiphenyl (surr)	55.6	44-119		%	1		08/22/16 20:20
2-Fluorophenol (surr)	43.3	19-119		%	1		08/22/16 20:20
Nitrobenzene-d5 (surr)	51.5	44-120		%	1		08/22/16 20:20
Phenol-d6 (surr)	43.2	10-115		%	1		08/22/16 20:20
Terphenyl-d14 (surr)	92.7	50-134		%	1		08/22/16 20:20

## **Batch Information**

Analytical Batch: XMS9556 Analytical Method: SW8270D Analyst: DSH Analytical Date/Time: 08/22/16 20:20 Container ID: 1164639002-I Prep Batch: XXX36072 Prep Method: SW3520C Prep Date/Time: 08/17/16 10:13 Prep Initial Wt./Vol.: 980 mL Prep Extract Vol: 1 mL

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Results of <b>OW-2-0816</b> Client Sample ID: <b>OW-2-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> Lab Sample ID: 1164639002 Lab Project ID: 1164639	t APT Event A	Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by Volatile Fuels									
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 08/15/16 04:02		
<b>urrogates</b> 4-Bromofluorobenzene (surr)	92.5	50-150		%	1		08/15/16 04:02		
Satch InformationAnalytical Batch: VFC13222Analytical Method: AK101Analyst: STAnalytical Date/Time: 08/15/16 04:02Container ID: 1164639002-K		F	Prep Batch: \ Prep Method: Prep Date/Tir Prep Initial W Prep Extract \	VXX29345 SW5030E ne: 08/14/ t./Vol.: 5 m Vol: 5 mL	8 16 06:00 L				
int Date: 09/02/2016 5:22:47PM						J flaggin	g is activated		

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Client Sample ID: **OW-2-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639002 Lab Project ID: 1164639 Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:40
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:40
1,1,2-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:40
1,2-Dibromoethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:40
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:40
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:40
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:40
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:40
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:40
Benzene	0.200 U	0.400	0.120	ug/L	1		08/17/16 22:40
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:40
Bromoform	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Bromomethane	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:40
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:40
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:40
Chloroethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40

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Client Sample ID: **OW-2-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639002 Lab Project ID: 1164639 Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

Parameter	Pecult Qual			Linite	DE	Allowable	Date Analyzed
Chloroform	0.500 U	1.00	0.300	ua/l	1	Linits	08/17/16 22:40
Chloromethane	0.390 J	1.00	0.310	ug/L	1		08/17/16 22:40
cis-1 2-Dichloroethene	0.500 U	1.00	0.310	ua/l	1		08/17/16 22:40
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ua/L	1		08/17/16 22:40
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:40
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Freon-113	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:40
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Methylene chloride	2.50 U	5.00	1.00	ug/L	1		08/17/16 22:40
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:40
Naphthalene	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:40
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/17/16 22:40
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Styrene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Toluene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Trichloroethene	0.470 J	1.00	0.310	ug/L	1		08/17/16 22:40
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:40
Vinyl chloride	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:40
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/17/16 22:40
Surrogates							
1,2-Dichloroethane-D4 (surr)	99.8	81-118		%	1		08/17/16 22:40
4-Bromofluorobenzene (surr)	101	85-114		%	1		08/17/16 22:40
Toluene-d8 (surr)	102	89-112		%	1		08/17/16 22:40

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### Results of OW-2-0816

Client Sample ID: **OW-2-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639002 Lab Project ID: 1164639 Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

### **Batch Information**

Analytical Batch: VMS16087 Analytical Method: SW8260B Analyst: TJT Analytical Date/Time: 08/17/16 22:40 Container ID: 1164639002-H Prep Batch: VXX29390 Prep Method: SW5030B Prep Date/Time: 08/17/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

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Results of OW-2-0816								
Client Sample ID: <b>OW-2-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> Lab Sample ID: 1164639002 Lab Project ID: 1164639	Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%):							
Results by Waters Department			·					
Parameter Chloride Fluoride Nitrate-N Nitrite-N Sulfate	Result Qual 5.79 0.345 0.100 U 0.100 U 0.652	LOQ/CL 0.200 0.200 0.200 0.200 0.200 0.200	DL 0.0620 0.0620 0.0620 0.0620 0.0620	<u>Units</u> mg/L mg/L mg/L mg/L	<u>DF</u> 1 1 1 1	<u>Allowable</u> Limits	Date Analyzed 08/11/16 15:21 08/11/16 15:21 08/11/16 15:21 08/11/16 15:21 08/11/16 15:21	
Batch Information Analytical Batch: WIC5558 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 08/11/16 15:21 Container ID: 1164639002-B		F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11589 : METHOD ne: 08/10/1 't./Vol.: 10 n Vol: 10 mL	16 13:05 nL			
Parameter Chemical Oxygen Demand	<u>Result Qual</u> 23.5	<u>LOQ/CL</u> 20.0	<u>DL</u> 6.20	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/16/16 15:30	
Batch Information Analytical Batch: WSP5345 Analytical Method: EPA 410.4 Analyst: KBE Analytical Date/Time: 08/16/16 15:30 Container ID: 1164639002-P								
<u>Parameter</u> Total Organic Carbon	<u>Result Qual</u> 2.79	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/17/16 16:45	
Batch Information Analytical Batch: WTC2620 Analytical Method: SM 5310B Analyst: VDL Analytical Date/Time: 08/17/16 16:45 Container ID: 1164639002-R								
<u>Parameter</u> Turbidity	<u>Result Qual</u> 120	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	Allowable Limits	<u>Date Analyzed</u> 08/11/16 15:50	
Print Date: 09/02/2016 5:22:47PM						J flaggin	g is activated	

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Results of <b>OW-2-0816</b>								
Client Sample ID: <b>OW-2-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> t Lab Sample ID: 1164639002 Lab Project ID: 1164639	APT Event A	C R M S L	ollection Da eceived Da atrix: Wate olids (%): ocation:	ate: 08/10/ ate: 08/11/ [,] er (Surface,	16 11:45 16 11:00 Eff., Gro	5 bund)		
Results by Waters Department			]					
Batch Information								
Analytical Batch: WAT10711 Analytical Method: SM21 2130B Analyst: NEG Analytical Date/Time: 08/11/16 15:50 Container ID: 1164639002-A								
Parameter Alkalinity	<u>Result Qual</u> 81.0	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyze 08/15/16 21:5	
Analytical Batch: WTI4499 Analytical Method: SM21 2320B Analyst: ACF Analytical Date/Time: 08/15/16 21:53 Container ID: 1164639002-X								
Parameter Total Solids	<u>Result Qual</u> 201	<u>LOQ/CL</u> 10.0	<u>DL</u> 10.0	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyze 08/19/16 15:0	
Batch Information								
Analytical Batch: STS5157 Analytical Method: SM21 2540B Analyst: LLP Analytical Date/Time: 08/19/16 15:00 Container ID: 1164639002-S								
Parameter Total Dissolved Solids	<u>Result</u> Qual 119	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyze</u> 08/15/16 14:1	
Batch Information Analytical Batch: STS5150 Analytical Method: SM21 2540C Analyst: LLP Analytical Date/Time: 08/15/16 14:17 Container ID: 1164639002-A								
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Allowable Limits	Date Analyze	

<b>5GS</b>		USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16						
Results of OW-2-0816								
Client Sample ID: <b>OW-2-0816</b> Client Project ID: <b>Kenai Wells-August</b> Lab Sample ID: 1164639002 Lab Project ID: 1164639	APT Event A	Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Waters Department								
Parameter Total Suspended Solids	<u>Result</u> Qual 81.5	<u>LOQ/CL</u> 5.00	<u>DL</u> 1.55	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed	
Batch Information Analytical Batch: STS5149 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 08/15/16 08:39 Container ID: 1164639002-C								
Parameter pH	<u>Result Qual</u> 8.80	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzec</u> 08/15/16 21:53	
Analytical Batch: WTI4497 Analytical Method: SM21 4500-H B Analyst: ACF Analytical Date/Time: 08/15/16 21:53 Container ID: 1164639002-X								
<u>Parameter</u> Total Kjeldahl Nitrogen	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 08/24/16 16:0	
Batch Information Analytical Batch: WDA3843 Analytical Method: SM21 4500-N D Analyst: NEG Analytical Date/Time: 08/24/16 16:03 Container ID: 1164639002-P		F F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11606 METHOD ne: 08/23/16 't./Vol.: 25 m Vol: 25 mL	3 18:00 L			
<u>Parameter</u> Ammonia-N	<u>Result Qual</u> 0.164	LOQ/CL 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/16/16 14:2	
int Date: 09/02/2016 5:22:47PM						J flaggin	g is activated	

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Results of OW-2-0816									
Client Sample ID: <b>OW-2-0816</b> Client Project ID: <b>Kenai Wells-Au</b> Lab Sample ID: 1164639002 Lab Project ID: 1164639	gust APT Event A	Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%):							
Results by Waters Department									
Batch Information									
Analytical Batch: WDA3838 Analytical Method: SM21 4500-NH3 Analyst: NEG Analytical Date/Time: 08/16/16 14:2 Container ID: 1164639002-P		Prep Batch: N Prep Method: Prep Date/Tin Prep Initial W Prep Extract N							
Parameter Ortho Phosphate-P	<u>Result Qual</u> 0.554	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 10	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 08/11/16 15:57		
Total Phosphorus	0.872	0.100	0.0310	mg/L	1		08/17/16 12:22		
Batch Information									
Analytical Batch: WDA3834 Analytical Method: SM21 4500P-B, Analyst: NEG Analytical Date/Time: 08/11/16 15:5 Container ID: 1164639002-Q	E 57		Prep Batch: M Prep Method: Prep Date/Tin Prep Initial W Prep Extract M	WXX11592 SM21 450 ne: 08/11/ t./Vol.: 25 Vol: 25 mL	00P-B,E 16 15:00 mL				
Analytical Batch: WDA3839 Analytical Method: SM21 4500P-B, Analyst: NEG Analytical Date/Time: 08/17/16 12:2 Container ID: 1164639002-P	E 22		Prep Batch: \ Prep Method: Prep Date/Tin Prep Initial W Prep Extract \	WXX11595 SM21 450 ne: 08/16/ t./Vol.: 2.5 Vol: 25 mL	00P-B,E 16 12:30 mL				
Print Date: 09/02/2016 5:22:47PM						J flaggin	q is activated		

### Results of TB1-1145

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Client Sample ID: **TB1-1145** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639003 Lab Project ID: 1164639 Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 20:30
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 20:30
1,1,2-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		08/12/16 20:30
1,2-Dibromoethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 20:30
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		08/12/16 20:30
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/12/16 20:30
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		08/12/16 20:30
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		08/12/16 20:30
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		08/12/16 20:30
Benzene	0.200 U	0.400	0.120	ug/L	1		08/12/16 20:30
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 20:30
Bromoform	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Bromomethane	5.00 U	10.0	3.10	ug/L	1		08/12/16 20:30
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		08/12/16 20:30
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/12/16 20:30
Chloroethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30

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### Results of TB1-1145

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Client Sample ID: **TB1-1145** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639003 Lab Project ID: 1164639 Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	Date Analyzed
Chloroform	0.500 U	1.00	0.300	ug/L	1		08/12/16 20:30
Chloromethane	0.380 J	1.00	0.310	ug/L	1		08/12/16 20:30
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		08/12/16 20:30
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 20:30
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Dichlorodifluoromethane	0.810 J	1.00	0.310	ug/L	1		08/12/16 20:30
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Freon-113	5.00 U	10.0	3.10	ug/L	1		08/12/16 20:30
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Methylene chloride	2.50 U	5.00	1.00	ug/L	1		08/12/16 20:30
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		08/12/16 20:30
Naphthalene	5.00 U	10.0	3.10	ug/L	1		08/12/16 20:30
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/12/16 20:30
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Styrene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Toluene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		08/12/16 20:30
Vinyl chloride	0.500 U	1.00	0.310	ug/L	1		08/12/16 20:30
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/12/16 20:30
Surrogates							
1,2-Dichloroethane-D4 (surr)	98.5	81-118		%	1		08/12/16 20:30
4-Bromofluorobenzene (surr)	101	85-114		%	1		08/12/16 20:30
Toluene-d8 (surr)	102	89-112		%	1		08/12/16 20:30

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#### Results of TB1-1145

Client Sample ID: **TB1-1145** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639003 Lab Project ID: 1164639 Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

#### **Batch Information**

Analytical Batch: VMS16072 Analytical Method: SW8260B Analyst: TJT Analytical Date/Time: 08/12/16 20:30 Container ID: 1164639003-A Prep Batch: VXX29363 Prep Method: SW5030B Prep Date/Time: 08/12/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

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Results of TB2-1145									
Client Sample ID: <b>TB2-1145</b> Client Project ID: <b>Kenai Wells-August</b> Lab Sample ID: 1164639004 Lab Project ID: 1164639	t APT Event A	Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%):							
Results by Volatile Fuels									
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/24/16 01:15		
urrogates 4-Bromofluorobenzene (surr)	94.6	50-150		%	1		08/24/16 01:15		
Batch Information									
Analytical Batch: VFC13249 Analytical Method: AK101 Analyst: ST		F	Prep Batch: N Prep Method: Prep Date/Tin	VXX29408 SW5030E ne: 08/23/ ²	6 06:00				
Analytical Date/Time: 08/24/16 01:15 Container ID: 1164639004-A		I	Prep Initial W	t./Vol.: 5 m	L				

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Results of TB3-1145							
Client Sample ID: <b>TB3-1145</b> Client Project ID: <b>Kenai Wells-August</b> Lab Sample ID: 1164639005 Lab Project ID: 1164639	APT Event A	C R M S L					
Results by metals Department							
Parameter Mercury	<u>Result Qual</u> 0.682 J	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 08/29/16 15:12
Batch Information							
Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 08/29/16 15:12 Container ID: 1164639005-A		i i i i i i i i i i i i i i i i i i i	Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30134 I: METHOD Ime: 08/26/1 Vt./Vol.: 50 r Vol: 50 mL	l6 15:00 nL		

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Results of <b>OW-4-0816</b> Client Sample ID: <b>OW-4-0816</b> Client Project ID: <b>Kenai Wells-August</b> Lab Sample ID: 1164639006 Lab Project ID: 1164639	Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by <b>Dissolved Metals</b> <u>Parameter</u> Mercury	<u>Result Qual</u> 1.45	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 08/29/16 15:17	
Batch Information Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 08/29/16 15:17 Container ID: 1164639006-B		F F F F	Prep Batch: Prep Method Prep Date/Tin Prep Initial W Prep Extract	MXX30134 : METHOD me: 08/26/1 /t./Vol.: 50 r Vol: 50 mL	16 15:00 mL			

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#### Results of OW-4-0816

Client Sample ID: **OW-4-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639006 Lab Project ID: 1164639 Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Aluminum	16.1	2.00	0.620	ug/L	2.5		08/19/16 09:58
Antimony	3.65	0.0500	0.0150	ug/L	2.5		08/19/16 09:58
Arsenic	37.2	0.800	0.200	ug/L	2.5		08/19/16 09:58
Barium	10.4	0.250	0.0400	ug/L	2.5		08/19/16 09:58
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		08/19/16 09:58
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 09:58
Boron	27.8	5.00	1.50	ug/L	2.5		08/19/16 09:58
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 09:58
Calcium	15000	50.0	15.0	ug/L	2.5		08/19/16 09:58
Chromium	0.250 U	0.500	0.150	ug/L	2.5		08/19/16 09:58
Cobalt	0.160	0.0200	0.0100	ug/L	2.5		08/19/16 09:58
Copper	0.447 J	0.500	0.200	ug/L	2.5		08/19/16 09:58
Iron	486	20.0	6.20	ug/L	2.5		08/19/16 09:58
Lead	0.0879 J	0.100	0.0310	ug/L	2.5		08/19/16 09:58
Magnesium	6490	20.0	6.20	ug/L	2.5		08/19/16 09:58
Manganese	41.2	0.100	0.0310	ug/L	2.5		08/19/16 09:58
Molybdenum	0.882	0.0500	0.0150	ug/L	2.5		08/19/16 09:58
Nickel	1.41	0.620	0.0620	ug/L	2.5		08/19/16 09:58
Potassium	6760	50.0	15.0	ug/L	2.5		08/19/16 09:58
Selenium	0.500 U	1.00	0.310	ug/L	2.5		08/19/16 09:58
Silicon	10800	100	31.0	ug/L	2.5		08/19/16 09:58
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 09:58
Sodium	9220	100	31.0	ug/L	2.5		08/19/16 09:58
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 09:58
Tin	0.100 U	0.200	0.0620	ug/L	2.5		08/19/16 09:58
Vanadium	8.09	1.00	0.310	ug/L	2.5		08/19/16 09:58
Zinc	1.60 J	3.10	0.400	ug/L	2.5		08/19/16 09:58
Potch Information							
		г	Pron Rotaby	17730004			
Analytical Method: 200.8 Low Level		F	Prep Method:	E200.2			
Analyst: VDL		F	rep Date/Tim	e: 08/18/10	6 07:36		
Analytical Date/Time: 08/19/16 09:58		F	Prep Initial Wt.	/Vol.: 50 m	۱L		
Container ID: 1164639006-A		F	rep Extract V	oi: 10 mL			

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<u>Parameter</u> Hardness as CaCO3	<u>Result Qual</u> 64.1	<u>LOQ/CL</u> 1.00	<u>DL</u> 1.00	<u>Units</u> mg/L	<u>DF</u> 2.5	<u>Allowable</u> Limits	Date Analyzed 08/19/16 09:58	



#### Results of OW-4-0816

Client Sample ID: **OW-4-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639006 Lab Project ID: 1164639 Collection Date: 08/10/16 16:25 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Dissolved Metals by ICP/MS

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 08/19/16 09:58 Container ID: 1164639006-A Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

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Results of <b>OW-4-0816</b> Client Sample ID: <b>OW-4-0816</b> Client Project ID: <b>Kenai Wells-August APT Event A</b> Lab Sample ID: 1164639006 Lab Project ID: 1164639		C R M S					
Results by <b>Waters Department</b> <u>Parameter</u> Total Organic Carbon,Dissolved	<u>Result Qual</u> 1.34	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyze
Analytical Batch: WTC2620 Analytical Method: SM 5310B Analyst: VDL Analytical Date/Time: 08/17/16 17:12 Container ID: 1164639006-C							
rint Date: 09/02/2016 5:22:47PM						J flaggin	g is activated

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Results of OW-2-0816	-						
Client Sample ID: <b>OW-2-0816</b> Client Project ID: <b>Kenai Wells-August APT Event A</b> Lab Sample ID: 1164639007 Lab Project ID: 1164639		C F N S L	Collection Date: 0 Received Date: 0 Matrix: Water (Sur Solids (%): Location:		16 11:45 16 11:00 Eff., Gro	und)	
Parameter Mercury	<u>Result Qual</u> 0.932 J	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 08/29/16 15:21
Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 08/29/16 15:21 Container ID: 1164639007-B			Prep Method Prep Date/Tii Prep Initial W Prep Extract	<ul> <li>METHOD</li> <li>me: 08/26/⁷</li> <li>t/Vol.: 50 mL</li> </ul>	16 15:00 mL		

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#### Results of OW-2-0816

Client Sample ID: **OW-2-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639007 Lab Project ID: 1164639 Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

Parameter	Result Qual	100/01	וח	l Inits	DE	Allowable	Date Analyzed	
Aluminum	45.9	2 00	0.620	ua/l	2.5	LIIIIII	08/19/16 10:18	
Antimony	1 47	0.0500	0.020	ug/L	2.5		08/19/16 10:18	
Arsenic	22.9	0.800	0.200	ug/L	2.5		08/19/16 10:18	
Barium	8.79	0.250	0.0400	ua/L	2.5		08/19/16 10:18	
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		08/19/16 10:18	
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:18	
Boron	126	5.00	1.50	ug/L	2.5		08/19/16 10:18	
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:18	
Calcium	6420	50.0	15.0	ug/L	2.5		08/19/16 10:18	
Chromium	0.223 J	0.500	0.150	ug/L	2.5		08/19/16 10:18	
Cobalt	0.0659	0.0200	0.0100	ug/L	2.5		08/19/16 10:18	
Copper	0.327 J	0.500	0.200	ug/L	2.5		08/19/16 10:18	
Iron	360	20.0	6.20	ug/L	2.5		08/19/16 10:18	
Lead	0.130	0.100	0.0310	ug/L	2.5		08/19/16 10:18	
Magnesium	3370	20.0	6.20	ug/L	2.5		08/19/16 10:18	
Manganese	28.9	0.100	0.0310	ug/L	2.5		08/19/16 10:18	
Molybdenum	5.53	0.0500	0.0150	ug/L	2.5		08/19/16 10:18	
Nickel	0.629	0.620	0.0620	ug/L	2.5		08/19/16 10:18	
Potassium	7030	50.0	15.0	ug/L	2.5		08/19/16 10:18	
Selenium	0.500 U	1.00	0.310	ug/L	2.5		08/19/16 10:18	
Silicon	5950	100	31.0	ug/L	2.5		08/19/16 10:18	
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 10:18	
Sodium	26300	200	62.0	ug/L	5		08/19/16 10:53	
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 10:18	
Tin	0.100 U	0.200	0.0620	ug/L	2.5		08/19/16 10:18	
Vanadium	2.46	1.00	0.310	ug/L	2.5		08/19/16 10:18	
Zinc	1.39 J	3.10	0.400	ug/L	2.5		08/19/16 10:18	
Batch Information								
Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 08/19/16 10:18 Container ID: 1164639007-A	Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL							



Client Sample ID: **OW-2-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639007 Lab Project ID: 1164639 Collection Date: 08/10/16 11:45 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Dissolved Metals by ICP/MS

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 08/19/16 10:18 Container ID: 1164639007-A Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

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Results of <b>OW-2-0816</b> Client Sample ID: <b>OW-2-0816</b> Client Project ID: <b>Kenai Wells-August APT Event A</b> Lab Sample ID: 1164639007 Lab Project ID: 1164639		C R M S L	ollection Da eceived Da latrix: Wate olids (%): ocation:	; pund)			
Results by Waters Department Parameter Total Organic Carbon,Dissolved	<u>Result Qual</u> 1.65	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 08/17/16 17:26
Batch Information Analytical Batch: WTC2620 Analytical Method: SM 5310B Analyst: VDL Analytical Date/Time: 08/17/16 17:26 Container ID: 1164639007-C							
int Date: 09/02/2016 5:22:47PM	0 West Potter Dri	ve Anchorade	, AK 95518			J flaggin	g is activated
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#### Results of OW-3-0816

Client Sample ID: **OW-3-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639008 Lab Project ID: 1164639 Collection Date: 08/10/16 17:50 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	661	4.00	1.24	ug/L	5		08/19/16 10:56
Antimony	0.484	0.0500	0.0150	ug/L	2.5		08/19/16 10:21
Arsenic	3.81	0.800	0.200	ug/L	2.5		08/19/16 10:21
Barium	56.4	0.250	0.0400	ug/L	2.5		08/19/16 10:21
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		08/19/16 10:21
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:21
Boron	4.49 J	5.00	1.50	ug/L	2.5		08/19/16 10:21
Cadmium	0.0229 J	0.0500	0.0150	ug/L	2.5		08/19/16 10:21
Calcium	17100	50.0	15.0	ug/L	2.5		08/19/16 10:21
Chromium	17.1	0.500	0.150	ug/L	2.5		08/19/16 10:21
Cobalt	0.893	0.0200	0.0100	ug/L	2.5		08/19/16 10:21
Copper	7.65	0.500	0.200	ug/L	2.5		08/19/16 10:21
Iron	9570	20.0	6.20	ug/L	2.5		08/19/16 10:21
Lead	0.517	0.100	0.0310	ug/L	2.5		08/19/16 10:21
Magnesium	6130	20.0	6.20	ug/L	2.5		08/19/16 10:21
Manganese	496	0.100	0.0310	ug/L	2.5		08/19/16 10:21
Molybdenum	0.982	0.0500	0.0150	ug/L	2.5		08/19/16 10:21
Nickel	12.1	0.620	0.0620	ug/L	2.5		08/19/16 10:21
Potassium	2160	50.0	15.0	ug/L	2.5		08/19/16 10:21
Selenium	0.500 U	1.00	0.310	ug/L	2.5		08/19/16 10:21
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 10:21
Sodium	7920	100	31.0	ug/L	2.5		08/19/16 10:21
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 10:21
Tin	0.0623 J	0.200	0.0620	ug/L	2.5		08/19/16 10:21
Vanadium	2.56	1.00	0.310	ug/L	2.5		08/19/16 10:21
Zinc	7.61	3.10	0.400	ug/L	2.5		08/19/16 10:21

### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 08/19/16 10:56 Container ID: 1164639008-D Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/02/2016 5:22:47PM

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SGS				s US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00207	Confidential Iwater Quality port - Event 2 I6-004 Rev. 0 16-Dec-16		
Results of OW-3-0816									
Client Sample ID: <b>OW-3-0816</b> Client Project ID: <b>Kenai Wells-August APT Event A</b> Lab Sample ID: 1164639008 Lab Project ID: 1164639		Collection Date: 08/10/16 17:50 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by Metals Department			_						
<u>Parameter</u> Mercury	<u>Result</u> Qual 2.15	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 08/29/16 15:30		
Batch Information									
Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 08/29/16 15:30 Container ID: 1164639008-E			Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	MXX30134 : METHOD me: 08/26/ /t./Vol.: 50 Vol: 50 mL	16 15:00 mL				

Print Date: 09/02/2016 5:22:47PM

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SGS				s US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
Results of OW-3-0816							
Client Sample ID: <b>OW-3-0816</b> Client Project ID: <b>Kenai Wells-August APT Event A</b> Lab Sample ID: 1164639008 Lab Project ID: 1164639			Collection Da Received Da Matrix: Wate Solids (%): Location:	ate: 08/10/ ite: 08/11/ [.] r (Surface,	16 17:50 16 11:00 Eff., Gro	und)	
Results by Semivolatile Organic Fue	s						
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.283 U	<u>LOQ/CL</u> 0.566	<u>DL</u> 0.170	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/24/16 19:42
Surrogates	00	50 450		0/	4		00/04/40 40:40
5a Androstane (surr)	86	50-150		%	1		08/24/16 19:42
Batch Information Analytical Batch: XFC12742 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 08/24/16 19:42 Container ID: 1164639008-N			Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	XXX36128 : SW3520C me: 08/23/1 /t./Vol.: 265 Vol: 1 mL	; 16 16:57 5 mL		
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.155 J	<u>LOQ/CL</u> 0.472	<u>DL</u> 0.142	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/24/16 19:42
Surrogates							
n-Triacontane-d62 (surr)	94.8	50-150		%	1		08/24/16 19:42
Batch Information							
Analytical Batch: XFC12742 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 08/24/16 19:42 Container ID: 1164639008-N		Prep Batch: XXX36128 Prep Method: SW3520C Prep Date/Time: 08/23/16 16:57 Prep Initial Wt./Vol.: 265 mL Prep Extract Vol: 1 mL					
Print Date: 09/02/2016 5:22:47PM						J flaggin	g is activated

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Client Sample ID: **OW-3-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639008 Lab Project ID: 1164639 Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 08/10/16 17:50 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Semivolatile Organics GC/MS

						Allowable	
<u>Parameter</u>	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	Limits	Date Analyzed
1,2,4-Trichlorobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
1,2-Dichlorobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
1,3-Dichlorobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
1,4-Dichlorobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
1-Chloronaphthalene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
1-Methylnaphthalene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
2,4,5-Trichlorophenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
2,4,6-Trichlorophenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
2,4-Dichlorophenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
2,4-Dimethylphenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
2,4-Dinitrophenol	0.0253 U	0.0505	0.0152	mg/L	1		08/22/16 20:38
2,4-Dinitrotoluene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
2,6-Dichlorophenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
2,6-Dinitrotoluene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
2-Chloronaphthalene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
2-Chlorophenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
2-Methyl-4,6-dinitrophenol	0.0253 U	0.0505	0.0152	mg/L	1		08/22/16 20:38
2-Methylnaphthalene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
2-Methylphenol (o-Cresol)	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
2-Nitroaniline	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
2-Nitrophenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
3&4-Methylphenol (p&m-Cresol)	0.0101 U	0.0202	0.00626	mg/L	1		08/22/16 20:38
3,3-Dichlorobenzidine	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
3-Nitroaniline	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
4-Bromophenyl-phenylether	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
4-Chloro-3-methylphenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
4-Chloroaniline	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
4-Chlorophenyl-phenylether	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
4-Nitroaniline	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
4-Nitrophenol	0.0253 U	0.0505	0.0152	mg/L	1		08/22/16 20:38
Acenaphthene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Acenaphthylene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Aniline	0.0253 U	0.0505	0.0152	mg/L	1		08/22/16 20:38
Anthracene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Azobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Benzo(a)Anthracene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Benzo[a]pyrene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38

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# Results of OW-3-0816

Client Sample ID: **OW-3-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639008 Lab Project ID: 1164639 Collection Date: 08/10/16 17:50 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	<u>Allowable</u> Limits	Date Analyzed
Benzo[b]Fluoranthene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Benzo[g,h,i]perylene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Benzo[k]fluoranthene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Benzoic acid	0.0253 U	0.0505	0.0152	mg/L	1		08/22/16 20:38
Benzyl alcohol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Bis(2chloro1methylethyl)Ether	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Bis(2-Chloroethoxy)methane	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Bis(2-Chloroethyl)ether	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
bis(2-Ethylhexyl)phthalate	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Butylbenzylphthalate	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Carbazole	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Chrysene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Dibenzo[a,h]anthracene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Dibenzofuran	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Diethylphthalate	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Dimethylphthalate	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Di-n-butylphthalate	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
di-n-Octylphthalate	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Fluoranthene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Fluorene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Hexachlorobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Hexachlorobutadiene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Hexachlorocyclopentadiene	0.0152 U	0.0303	0.00949	mg/L	1		08/22/16 20:38
Hexachloroethane	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Indeno[1,2,3-c,d] pyrene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Isophorone	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Naphthalene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Nitrobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
N-Nitrosodimethylamine	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
N-Nitroso-di-n-propylamine	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
N-Nitrosodiphenylamine	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Pentachlorophenol	0.0253 U	0.0505	0.0152	mg/L	1		08/22/16 20:38
Phenanthrene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Phenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Pyrene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 20:38
Surrogates							
2,4,6-Tribromophenol (surr)	71	43-140		%	1		08/22/16 20:38

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#### Results of OW-3-0816

Client Sample ID: **OW-3-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639008 Lab Project ID: 1164639 Collection Date: 08/10/16 17:50 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Semivolatile Organics GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
2-Fluorobiphenyl (surr)	63.4	44-119		%	1		08/22/16 20:38
2-Fluorophenol (surr)	50.7	19-119		%	1		08/22/16 20:38
Nitrobenzene-d5 (surr)	57.8	44-120		%	1		08/22/16 20:38
Phenol-d6 (surr)	48.8	10-115		%	1		08/22/16 20:38
Terphenyl-d14 (surr)	96	50-134		%	1		08/22/16 20:38

#### **Batch Information**

Analytical Batch: XMS9556 Analytical Method: SW8270D Analyst: DSH Analytical Date/Time: 08/22/16 20:38 Container ID: 1164639008-I Prep Batch: XXX36072 Prep Method: SW3520C Prep Date/Time: 08/17/16 10:13 Prep Initial Wt./Vol.: 990 mL Prep Extract Vol: 1 mL

Print Date: 09/02/2016 5:22:47PM

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SGS				S US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential Iwater Quality port - Event 2 I6-004 Rev. 0 16-Dec-16
Results of <b>OW-3-0816</b> Client Sample ID: <b>OW-3-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> Lab Sample ID: 1164639008 Lab Project ID: 1164639	st APT Event A	Ci Ri M Si Lo	ollection Da eceived Dat atrix: Water olids (%): ocation:	te: 08/10/ te: 08/11/ (Surface,	16 17:50 16 11:00 Eff., Grou	und)	
Results by Volatile Fuels			]				
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/14/16 22:06
u <b>rrogates</b> 4-Bromofluorobenzene (surr)	109	50-150		%	1		08/14/16 22:06
Analytical Method: AK101 Analyst: ST Analytical Date/Time: 08/14/16 22:06 Container ID: 1164639008-K		F F	Prep Method: Prep Date/Tir Prep Initial W Prep Extract \	SW5030E ne: 08/14/ t./Vol.: 5 m Vol: 5 mL	3 16 06:00 IL		
int Date: 09/02/2016 5:22:47PM						J flaggin	g is activated

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#### Results of OW-3-0816

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Client Sample ID: **OW-3-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639008 Lab Project ID: 1164639 Collection Date: 08/10/16 17:50 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:56
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:56
1,1,2-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:56
1,2-Dibromoethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:56
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:56
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:56
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:56
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:56
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:56
Benzene	0.200 U	0.400	0.120	ug/L	1		08/17/16 22:56
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:56
Bromoform	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
Bromomethane	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:56
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:56
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:56
Chloroethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56

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#### Results of OW-3-0816

SG

Client Sample ID: **OW-3-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639008 Lab Project ID: 1164639 Collection Date: 08/10/16 17:50 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

Parameter	Posult Qual			Unite	DE	Allowable	Data Analyzad
Chloroform		1.00	0.300		1	LITIUS	08/17/16 22:56
Chloromethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
cis-1 2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
cis-1.3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:56
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		08/17/16 22:56
Dibromomethane	0.500 U	1.00	0.310	ua/l	1		08/17/16 22:56
Dichlorodifluoromethane	0.500 U	1.00	0.310	ua/l	1		08/17/16 22:56
Ethylbenzene	0.500 U	1.00	0.310	ua/l	1		08/17/16 22:56
Freon-113	5.00 U	10.0	3.10	ua/L	1		08/17/16 22:56
Hexachlorobutadiene	0.500 U	1.00	0.310	ua/L	1		08/17/16 22:56
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ua/L	1		08/17/16 22:56
Methylene chloride	2.50 U	5.00	1.00	ua/L	1		08/17/16 22:56
Methyl-t-butyl ether	5.00 U	10.0	3.10	ua/L	1		08/17/16 22:56
Naphthalene	5.00 U	10.0	3.10	ua/L	1		08/17/16 22:56
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
n-Propylbenzene	0.500 U	1.00	0.310	ua/L	1		08/17/16 22:56
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/17/16 22:56
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
Styrene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
Toluene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		08/17/16 22:56
Vinyl chloride	0.500 U	1.00	0.310	ug/L	1		08/17/16 22:56
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/17/16 22:56
Surrogates							
1,2-Dichloroethane-D4 (surr)	97.2	81-118		%	1		08/17/16 22:56
4-Bromofluorobenzene (surr)	101	85-114		%	1		08/17/16 22:56
Toluene-d8 (surr)	103	89-112		%	1		08/17/16 22:56

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#### Results of OW-3-0816

Client Sample ID: **OW-3-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639008 Lab Project ID: 1164639 Collection Date: 08/10/16 17:50 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

#### **Batch Information**

Analytical Batch: VMS16087 Analytical Method: SW8260B Analyst: TJT Analytical Date/Time: 08/17/16 22:56 Container ID: 1164639008-G Prep Batch: VXX29390 Prep Method: SW5030B Prep Date/Time: 08/17/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

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SGS				S US	LNG Fa Sampling a AL-FG-GF	acilities Ground and Testing Re RZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
Results of OW-3-0816							
Client Sample ID: <b>OW-3-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> Lab Sample ID: 1164639008 Lab Project ID: 1164639	t APT Event A	C R M Si La	ollection Da eceived Da latrix: Water olids (%): ocation:	und)			
Results by waters Department						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Allowable Limits	Date Analyzed
Chloride	14.4	0.200	0.0620	mg/L	1		08/11/16 15:43
Fluoride	0.126 J	0.200	0.0620	mg/L	1		08/11/16 15:4
Nitrate-N	0.100 U	0.200	0.0620	mg/L	1		08/11/16 15:43
Nitrite-N	0.100 U	0.200	0.0620	- mg/L	1		08/11/16 15:4
Sulfate	5.29	0.200	0.0620	mg/L	1		08/11/16 15:4
Batch Information							
Analytical Batch: WIC5558 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 08/11/16 15:43 Container ID: 1164639008-B		F F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11589 : METHOD me: 08/10/1 (t./Vol.: 10 n Vol: 10 mL	16 13:05 mL		
Parameter Turbidity	Result Qual	LOQ/CL 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	DF 1	Allowable Limits	Date Analyzed
Analytical Batch: WAT10711 Analytical Method: SM21 2130B Analyst: NEG Analytical Date/Time: 08/11/16 15:50 Container ID: 1164639008-A							
						Allowable	
Parameter Alkalinity	60.0	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Limits</u>	08/15/16 22:0
Potch Information							
Analytical Batch: WTI4499 Analytical Method: SM21 2320B Analyst: ACF Analytical Date/Time: 08/15/16 22:00 Container ID: 1164639008-B							
	D # C .		<u> </u>			Allowable	<b>D</b> ( <b>A</b> )
rational Dissolved Solids	<u>rtesuit Quai</u> 117	<u>100/01</u> 10.0	<u>DL</u> 3.10	mg/L	<u>DF</u> 1	Limits	08/16/16 12:42
int Date: 09/02/2016 5:22:47PM						J flaggin	g is activated
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						Membe	er of SGS Group

SGS		Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16						
Results of OW-3-0816								
Client Sample ID: <b>OW-3-0816</b> Client Project ID: <b>Kenai Wells-Aug</b> Lab Sample ID: 1164639008 Lab Project ID: 1164639	ust APT Event A	C R M S	ollection Da eceived Da latrix: Wate olids (%): ocation:	ate: 08/10/1 te: 08/11/10 r (Surface, E	6 17:50 6 11:00 Eff., Gro	) bund)		
Results by Waters Department								
Batch Information								
Analytical Batch: STS5152 Analytical Method: SM21 2540C Analyst: LLP Analytical Date/Time: 08/16/16 12:42 Container ID: 1164639008-C	1							
<u>Parameter</u> Total Suspended Solids	<u>Result Qual</u> 19.1	<u>LOQ/CL</u> 1.44	<u>DL</u> 0.446	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 08/15/16 08:39	
Batch Information Analytical Batch: STS5149 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 08/15/16 08:39 Container ID: 1164639008-C								
Parameter pH	<u>Result Qual</u> 7.10	LOQ/CL 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/15/16 22:00	
Analytical Batch: WTI4497 Analytical Method: SM21 4500-H B Analyst: ACF Analytical Date/Time: 08/15/16 22:00 Container ID: 1164639008-B								
Print Date: 09/02/2016 5:22:47PM						J flaggin	g is activated	
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#### Results of OW-1-0816

Client Sample ID: **OW-1-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639009 Lab Project ID: 1164639 Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	1940	20.0	6.20	ug/L	25		08/19/16 10:59
Antimony	0.362	0.0500	0.0150	ug/L	2.5		08/19/16 10:24
Arsenic	6.83	0.800	0.200	ug/L	2.5		08/19/16 10:24
Barium	120	0.250	0.0400	ug/L	2.5		08/19/16 10:24
Beryllium	0.0615	0.0500	0.0250	ug/L	2.5		08/19/16 10:24
Bismuth	0.0314 J	0.0500	0.0150	ug/L	2.5		08/19/16 10:24
Boron	5.65	5.00	1.50	ug/L	2.5		08/19/16 10:24
Cadmium	0.0507	0.0500	0.0150	ug/L	2.5		08/19/16 10:24
Calcium	26700	50.0	15.0	ug/L	2.5		08/19/16 10:24
Chromium	13.0	0.500	0.150	ug/L	2.5		08/19/16 10:24
Cobalt	1.13	0.0200	0.0100	ug/L	2.5		08/19/16 10:24
Copper	8.54	0.500	0.200	ug/L	2.5		08/19/16 10:24
ron	19200	20.0	6.20	ug/L	2.5		08/19/16 10:24
_ead	1.46	0.100	0.0310	ug/L	2.5		08/19/16 10:24
Magnesium	7150	20.0	6.20	ug/L	2.5		08/19/16 10:24
Manganese	1040	0.100	0.0310	ug/L	2.5		08/19/16 10:24
Vlolybdenum	0.456	0.0500	0.0150	ug/L	2.5		08/19/16 10:24
Nickel	6.64	0.620	0.0620	ug/L	2.5		08/19/16 10:24
Potassium	2920	50.0	15.0	ug/L	2.5		08/19/16 10:24
Selenium	0.500 U	1.00	0.310	ug/L	2.5		08/19/16 10:24
Silver	0.0158 J	0.0200	0.00620	ug/L	2.5		08/19/16 10:24
Sodium	9820	100	31.0	ug/L	2.5		08/19/16 10:24
Thallium	0.0131 J	0.0200	0.00620	ug/L	2.5		08/19/16 10:24
Гin	0.104 J	0.200	0.0620	ug/L	2.5		08/19/16 10:24
/anadium	5.87	1.00	0.310	ug/L	2.5		08/19/16 10:24
Zinc	15.8	3.10	0.400	ug/L	2.5		08/19/16 10:24
Silver Sodium Fhallium Fin Vanadium Zinc	0.0158 J 9820 0.0131 J 0.104 J 5.87 15.8	0.0200 100 0.0200 0.200 1.00 3.10	0.00620 31.0 0.00620 0.0620 0.310 0.400	ug/L ug/L ug/L ug/L ug/L ug/L	2.5 2.5 2.5 2.5 2.5 2.5		08/19/16 10: 08/19/16 10: 08/19/16 10: 08/19/16 10: 08/19/16 10: 08/19/16 10:

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 08/19/16 10:59 Container ID: 1164639009-D Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

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Results of OW-1-0816							
Client Sample ID: <b>OW-1-0816</b> Client Project ID: <b>Kenai Wells-August</b> Lab Sample ID: 1164639009 Lab Project ID: 1164639	t APT Event A	C R M S L	Collection Da Received Da Matrix: Water Solids (%): ocation:	ate: 08/10/ te: 08/11/ [,] r (Surface,	16 13:53 16 11:00 Eff., Grou	und)	
Results by Metals Department							
<u>Parameter</u> Mercury	<u>Result</u> Qual 7.16	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 08/29/16 15:35
Batch Information							
Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 08/29/16 15:35 Container ID: 1164639009-E			Prep Batch: Prep Method Prep Date/Tir Prep Initial W Prep Extract	MXX30134 : METHOD me: 08/26/1 /t./Vol.: 50 r Vol: 50 mL	l6 15:00 nL		

Print Date: 09/02/2016 5:22:47PM

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Results of OW-1-0816							
Client Sample ID: <b>OW-1-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> Lab Sample ID: 1164639009 Lab Project ID: 1164639	t APT Event A						
Results by Semivolatile Organic Fuel	s						
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.294 U	<u>LOQ/CL</u> 0.588	<u>DL</u> 0.176	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/24/16 19:53
Surrogates	77.0	E0 1E0		0/	1		09/24/16 10:52
5a Androstane (surr)	77.8	50-150		%	1		08/24/16 19:53
Batch Information Analytical Batch: XFC12742 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 08/24/16 19:53 Container ID: 1164639009-N			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36128 : SW3520C me: 08/23/1 /t./Vol.: 255 Vol: 1 mL	; 16 16:57 5 mL		
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.160 J	<u>LOQ/CL</u> 0.490	<u>DL</u> 0.147	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/24/16 19:53
Surrogates							
n-Triacontane-d62 (surr)	83.5	50-150		%	1		08/24/16 19:53
Batch Information							
Analytical Batch: XFC12742 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 08/24/16 19:53 Container ID: 1164639009-N			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36128 : SW3520C me: 08/23/1 /t./Vol.: 255 Vol: 1 mL	;  6 16:57 5 mL		
Print Date: 09/02/2016 5:22:47PM						J flaggin	g is activated

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Results of OW-1-0816

Client Sample ID: **OW-1-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639009 Lab Project ID: 1164639 Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Semivolatile Organics GC/MS

Parameter     Result Qual     LQQ/CL     DL     Units     DE     Lintts     Date Analyzed       1.2-4-Tichlorobenzene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       1.3-Dichlorobenzene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       1Chioropaphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4.6-Trichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4.6-Trichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4.6-Trichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4-Dirichorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4-Dirichorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.6-Dirichorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/							Allowable	
1,2,4-Tichklorobenzene   0.0520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     1,3-Dichklorobenzene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     1,4-Dichklorobenzene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     1,4-Dichklorobenzene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2,4,5-Trichklorophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2,4,5-Trichklorophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2,4-Dinktorophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2,4-Dinktorophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2,4-Dinktorophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2,4-Dinktorophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2,4-Dinktrophenol   0.00520 U   0.0104   0.00323	Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
1.2-Dichlorobenzene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     1.3-Dichlorobenzene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     1.4-Dichlorobenzene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2.4-Si-Trichlorophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2.4-Dichlorophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2.4-Dichlyrophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2.4-Dichlyrophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2.4-Dichlyrophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2.4-Dichlorophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2.4-Dichlyrophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     2.4-Dichlyrophenol   0.00520 U   0.0104   0.00323   mg/L	1,2,4-Trichlorobenzene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
1.3-Dichlorobenzene     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       1.4-Dichlorobenzene     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       1Methylnaphthalene     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.4.6-Trichlorophenol     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.4.0-Trichlorophenol     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.4.0-Trichlorophenol     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.4-Dirktorophenol     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.4-Dirktorophenol     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.4-Dirktorobuene     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.6-Dinktorobeneol     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.Chiorophenol     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16	1,2-Dichlorobenzene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
1.4-Dichlorobenzene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       1-Methynaphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4,5-Trichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4,5-Trichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4-Dinethylphenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4-Dinethylphenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4-Dinthylphenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4-Dinthylphenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.6-Dintrotoluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2Methylaphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55	1,3-Dichlorobenzene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
1-Chiconaphthalene     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.4,5-Trichlorophenol     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.4,5-Trichlorophenol     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.4,5-Trichlorophenol     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.4-Dinitrophenol     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.4-Dinitrophenol     0.00520 U     0.0164     0.00323 mg/L     1     08/22/16 20:55       2.4-Dinitrotoluene     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.6-Dichitrotoluene     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.Chicorophenol     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.Methylaphthalene     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:55       2.Methylaphthalene     0.00520 U     0.0104     0.00323 mg/L     1     08/22/16 20:	1,4-Dichlorobenzene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
1-Methylnaphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4.5-Trichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4.5-Trichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4-Dichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4-Dinklorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4-Dinklorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.6-Dichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.6-Dichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.6-Methyl-A-G-dinitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2Methyl-A-G-dinitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16	1-Chloronaphthalene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
2,4,5-Trichlorophenol   0.00520 U   0.0104   0.00323   mg/L   1   0.8/22/16 20:55     2,4-Dirchlorophenol   0.00520 U   0.0104   0.00323   mg/L   1   0.8/22/16 20:55     2,4-Dirchlorophenol   0.00520 U   0.0104   0.00323   mg/L   1   0.8/22/16 20:55     2,4-Dinitrophenol   0.00520 U   0.0104   0.00323   mg/L   1   0.8/22/16 20:55     2,4-Dinitrophenol   0.00520 U   0.0104   0.00323   mg/L   1   0.8/22/16 20:55     2,6-Dinitrobluene   0.00520 U   0.0104   0.00323   mg/L   1   0.8/22/16 20:55     2,6-Dinitrobluene   0.00520 U   0.0104   0.00323   mg/L   1   0.8/22/16 20:55     2,6-Lointorophenol   0.00520 U   0.0104   0.00323   mg/L   1   0.8/22/16 20:55     2-Methylhaphtalene   0.00520 U   0.0104   0.00323   mg/L   1   0.8/22/16 20:55     2-Methylhenol (o-Cresol)   0.00520 U   0.0104   0.00323   mg/L   1   0.8/22/16 20:55     2-Nitroaniline   0.00520 U   0.0104   0.00323 <t< td=""><td>1-Methylnaphthalene</td><td>0.00520 U</td><td>0.0104</td><td>0.00323</td><td>mg/L</td><td>1</td><td></td><td>08/22/16 20:55</td></t<>	1-Methylnaphthalene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
2,4,6-Trichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,4-Dinthylphenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,4-Dinthylphenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,4-Dintirotoluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,6-Dichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,6-Dinitrotoluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Chloronphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Chlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Methylphenol (o-Cresol)     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3.4-Methylphenol (p.Cresol)     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55	2,4,5-Trichlorophenol	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
2,4-Dichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,4-Dinitrophenol     0.00261 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,4-Dinitrobluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,6-Dinitrobluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,6-Dinitrobluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,6-Dinitrobluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,6-Chiorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,Methyl-4,6-dinitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,Methyl-4,6-dinitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,Methylphenol (p-Cresol)     0.010520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55 <td>2,4,6-Trichlorophenol</td> <td>0.00520 U</td> <td>0.0104</td> <td>0.00323</td> <td>mg/L</td> <td>1</td> <td></td> <td>08/22/16 20:55</td>	2,4,6-Trichlorophenol	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
2.4-Dimethylphenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.4-Dinitrophenol     0.0251 U     0.0156     mg/L     1     08/22/16 20:55       2.4-Dinitrotoluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.6-Dichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.6-Dichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.Chlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.Methylaphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.Methylaphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.Nitroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3.4-Methylphenol (p.m-Cresol)     0.0104U     0.00323     mg/L     1     08/22/16 20:55       3.4-Methylphenol (p.m-Cresol) <td>2,4-Dichlorophenol</td> <td>0.00520 U</td> <td>0.0104</td> <td>0.00323</td> <td>mg/L</td> <td>1</td> <td></td> <td>08/22/16 20:55</td>	2,4-Dichlorophenol	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
2.4-Dinitrophenol     0.0261 U     0.0521     0.0156     mg/L     1     08/22/16 20:55       2.4-Dinitrotoluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.6-Dinitrotoluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.6-Dinitrotoluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.Chloronaphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.Methyl-4,6-dinitrophenol     0.0261 U     0.0156     mg/L     1     08/22/16 20:55       2.Methylphenol (o-Cresol)     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.Nitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3.4-Methylphenol (p&m-Cresol)     0.0104 U     0.00323     mg/L     1     08/22/16 20:55       3.4-Methylphenol (p&m-Cresol)     0.0104 U     0.00323     mg/L     1     08/22/16 20:55       3.3-Dichorobenzidine	2,4-Dimethylphenol	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
2.4-Dinitrotoluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.6-Dichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2.6-Dichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Chlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Methyl-4.6-dinitrophenol     0.0520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Methyl-4.6-dinitrophenol     0.0520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Methyl-4.6-dinitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Nitroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3-Dichlorobenzidine     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3-Dichlorobenzidine     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55 <td>2,4-Dinitrophenol</td> <td>0.0261 U</td> <td>0.0521</td> <td>0.0156</td> <td>mg/L</td> <td>1</td> <td></td> <td>08/22/16 20:55</td>	2,4-Dinitrophenol	0.0261 U	0.0521	0.0156	mg/L	1		08/22/16 20:55
2,6-Dichlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2,6-Dinitrotoluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Chlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Chlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Methyl-4,6-dinitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Methylphenol (o-Cresol)     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Nitroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3.4Nitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3.3-Dichlorobenzidine     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Strophenol-phenyl-phenylether     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55	2,4-Dinitrotoluene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
2,6-Dinitrotoluene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Chloronaphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Chlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Methyl-4,6-dinitrophenol     0.0261 U     0.0152     0.0156     mg/L     1     08/22/16 20:55       2-Methylphenol (o-Cresol)     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Nitroanline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3-Nitroanline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3.4-Methylphenol (p&m-Cresol)     0.0104 U     0.0028     0.00646     mg/L     1     08/22/16 20:55       3.3-Dichlorobenzidine     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Bromophenyl-phenylether     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55	2,6-Dichlorophenol	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
2-Chloronaphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Chlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Methyl-4,6-dinitrophenol     0.0261 U     0.0521     0.0156     mg/L     1     08/22/16 20:55       2-Methylaphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Methylphenol (o-Cresol)     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Nitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3-Wethylphenol (p&m-Cresol)     0.0104 U     0.0208     0.00646     mg/L     1     08/22/16 20:55       3-Nitroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chloro-3-methylphenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chloroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55	2,6-Dinitrotoluene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
2-Chlorophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Methyl-4,6-dinitrophenol     0.0261 U     0.0152     0.0156     mg/L     1     08/22/16 20:55       2-Methylpaphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Nitroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Nitroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3-Nitroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3,3-Dichlorobenzidine     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Bromophenyl-phenylether     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chloroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chloroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55	2-Chloronaphthalene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
2-Methyl-4,6-dinitrophenol     0.0261 U     0.0521     0.0156     mg/L     1     08/22/16 20:55       2-Methylnaphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Methylphenol (o-Cresol)     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Nitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3-Nitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3,3-Dichlorobenzidine     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3,3-Dichlorobenzidine     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Bromophenyl-phenylether     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chloroa-illine     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chloroanilline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55	2-Chlorophenol	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
2-Methylnaphthalene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Methylphenol (o-Cresol)     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Nitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3-Nitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3,3-Dichlorobenzidine     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3,3-Dichlorobenzidine     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3,-Nitroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chloro-3-methylphenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chloroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chloroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55	2-Methyl-4,6-dinitrophenol	0.0261 U	0.0521	0.0156	mg/L	1		08/22/16 20:55
2-Methylphenol (o-Cresol)     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Nitroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Nitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3&4-Methylphenol (p&m-Cresol)     0.0104 U     0.0208     0.00646     mg/L     1     08/22/16 20:55       3,3-Dichlorobenzidine     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Bromophenyl-phenylether     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chloro-3-methylphenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chlorophenyl-phenylether     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chlorophenyl-phenylether     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Nitroaniline     0.00520 U     0.0104     0.00323     mg/L     1 <td< td=""><td>2-Methylnaphthalene</td><td>0.00520 U</td><td>0.0104</td><td>0.00323</td><td>mg/L</td><td>1</td><td></td><td>08/22/16 20:55</td></td<>	2-Methylnaphthalene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
2-Nitroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       2-Nitrophenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       3&4-Methylphenol (p&m-Cresol)     0.0104 U     0.0208     0.00646     mg/L     1     08/22/16 20:55       3,3-Dichlorobenzidine     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Bromophenyl-phenylether     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chloro-3-methylphenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chloro-3-methylphenol     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Chlorophenyl-phenylether     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       4-Nitroaniline     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       Acenaphthene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55<	2-Methylphenol (o-Cresol)	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
2-Nitrophenol0.00520 U0.01040.00323mg/L108/22/16 20:553&4-Methylphenol (p&m-Cresol)0.0104 U0.02080.00646mg/L108/22/16 20:553,3-Dichlorobenzidine0.00520 U0.01040.00323mg/L108/22/16 20:553-Nitroaniline0.00520 U0.01040.00323mg/L108/22/16 20:554-Bromophenyl-phenylether0.00520 U0.01040.00323mg/L108/22/16 20:554-Chloro-3-methylphenol0.00520 U0.01040.00323mg/L108/22/16 20:554-Chlorophenyl-phenylether0.00520 U0.01040.00323mg/L108/22/16 20:554-Chloroaniline0.00520 U0.01040.00323mg/L108/22/16 20:554-Chlorophenyl-phenylether0.00520 U0.01040.00323mg/L108/22/16 20:554-Nitroaniline0.00520 U0.01040.00323mg/L108/22/16 20:554-Nitrophenol0.0261 U0.05210.0156mg/L108/22/16 20:55Acenaphthene0.00520 U0.01040.00323mg/L108/22/16 20:55Acenaphthylene0.00520 U0.01040.00323mg/L108/22/16 20:55Aniline0.00520 U0.01040.00323mg/L108/22/16 20:55Anthracene0.00520 U0.01040.00323mg/L108/22/16 20:55Acenaphthylene0.00520 U0.01040.00323mg/L	2-Nitroaniline	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
3&4-Methylphenol (p&m-Cresol)0.0104 U0.02080.00646mg/L108/22/16 20:553,3-Dichlorobenzidine0.00520 U0.01040.00323mg/L108/22/16 20:553-Nitroaniline0.00520 U0.01040.00323mg/L108/22/16 20:554-Bromophenyl-phenylether0.00520 U0.01040.00323mg/L108/22/16 20:554-Chloro-3-methylphenol0.00520 U0.01040.00323mg/L108/22/16 20:554-Chlorophenyl-phenylether0.00520 U0.01040.00323mg/L108/22/16 20:554-Chlorophenyl-phenylether0.00520 U0.01040.00323mg/L108/22/16 20:554-Chlorophenyl-phenylether0.00520 U0.01040.00323mg/L108/22/16 20:554-Nitroaniline0.00520 U0.01040.00323mg/L108/22/16 20:554-Nitroaniline0.00520 U0.01040.00323mg/L108/22/16 20:554-Nitroaniline0.00520 U0.01040.00323mg/L108/22/16 20:55Acenaphthene0.00520 U0.01040.00323mg/L108/22/16 20:55Acenaphthylene0.00520 U0.01040.00323mg/L108/22/16 20:55Aniline0.00520 U0.01040.00323mg/L108/22/16 20:55Arbracene0.00520 U0.01040.00323mg/L108/22/16 20:55Benzo(a)Anthracene0.00520 U0.01040.	2-Nitrophenol	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
3,3-Dichlorobenzidine   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     3-Nitroaniline   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Bromophenyl-phenylether   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Chloro-3-methylphenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Chloroaniline   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Chlorophenyl-phenylether   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Chlorophenyl-phenylether   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Nitroaniline   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Nitrophenol   0.0261 U   0.0521   0.0156   mg/L   1   08/22/16 20:55     Acenaphthylene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Aniline   0.0261 U   0.0521   0.0156   mg/L	3&4-Methylphenol (p&m-Cresol)	0.0104 U	0.0208	0.00646	mg/L	1		08/22/16 20:55
3-Nitroaniline   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Bromophenyl-phenylether   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Chloro-3-methylphenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Chloroaniline   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Chlorophenyl-phenylether   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Nitroaniline   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Nitrophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Nitrophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Acenaphthylene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Aniline   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Archapene   0.00520 U   0.0104   0.00323   mg/L   1 <td< td=""><td>3,3-Dichlorobenzidine</td><td>0.00520 U</td><td>0.0104</td><td>0.00323</td><td>mg/L</td><td>1</td><td></td><td>08/22/16 20:55</td></td<>	3,3-Dichlorobenzidine	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
4-Bromophenyl-phenylether   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Chloro-3-methylphenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Chloroaniline   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Chlorophenyl-phenylether   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Nitroaniline   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Nitrophenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Nitrophenol   0.0261 U   0.0521   0.0156   mg/L   1   08/22/16 20:55     Acenaphthylene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Aniline   0.0261 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Anthracene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Azobenzene   0.00520 U   0.0104   0.00323   mg/L   1   08/22	3-Nitroaniline	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
4-Chloro-3-methylphenol   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Chloroaniline   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Chlorophenyl-phenylether   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Nitroaniline   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Nitrophenol   0.0261 U   0.0521   0.0156   mg/L   1   08/22/16 20:55     Acenaphthene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Acenaphthene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Acenaphthylene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Anthracene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Acobenzene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Benzo(a)Anthracene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/1	4-Bromophenyl-phenylether	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
4-Chloroaniline0.00520 U0.01040.00323mg/L108/22/16 20:554-Chlorophenyl-phenylether0.00520 U0.01040.00323mg/L108/22/16 20:554-Nitroaniline0.00520 U0.01040.00323mg/L108/22/16 20:554-Nitrophenol0.0261 U0.05210.0156mg/L108/22/16 20:55Acenaphthene0.00520 U0.01040.00323mg/L108/22/16 20:55Acenaphthylene0.00520 U0.01040.00323mg/L108/22/16 20:55Aniline0.0261 U0.05210.0156mg/L108/22/16 20:55Anthracene0.00520 U0.01040.00323mg/L108/22/16 20:55Anthracene0.00520 U0.01040.00323mg/L108/22/16 20:55Benzo(a)Anthracene0.00520 U0.01040.00323mg/L108/22/16 20:55Benzo[a]pyrene0.00520 U0.01040.00323mg/L108/22/16 20:55	4-Chloro-3-methylphenol	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
4-Chlorophenyl-phenylether0.00520 U0.01040.00323mg/L108/22/16 20:554-Nitroaniline0.00520 U0.01040.00323mg/L108/22/16 20:554-Nitrophenol0.0261 U0.05210.0156mg/L108/22/16 20:55Acenaphthene0.00520 U0.01040.00323mg/L108/22/16 20:55Acenaphthylene0.00520 U0.01040.00323mg/L108/22/16 20:55Aniline0.0261 U0.05210.0156mg/L108/22/16 20:55Anthracene0.00520 U0.01040.00323mg/L108/22/16 20:55Azobenzene0.00520 U0.01040.00323mg/L108/22/16 20:55Benzo(a)Anthracene0.00520 U0.01040.00323mg/L108/22/16 20:55Benzo[a]pyrene0.00520 U0.01040.00323mg/L108/22/16 20:55Benzo[a]pyrene0.00520 U0.01040.00323mg/L108/22/16 20:55	4-Chloroaniline	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
4-Nitroaniline   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     4-Nitrophenol   0.0261 U   0.0521   0.0156   mg/L   1   08/22/16 20:55     Acenaphthene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Acenaphthylene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Aniline   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Anthracene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Azobenzene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Benzo(a)Anthracene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Benzo[a]pyrene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55	4-Chlorophenyl-phenylether	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
4-Nitrophenol   0.0261 U   0.0521   0.0156   mg/L   1   08/22/16 20:55     Acenaphthene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Acenaphthylene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Aniline   0.0261 U   0.0521   0.0156   mg/L   1   08/22/16 20:55     Anthracene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Azobenzene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Benzo(a)Anthracene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Benzo[a]pyrene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55	4-Nitroaniline	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Acenaphthene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Acenaphthylene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Aniline   0.0261 U   0.0521   0.0156   mg/L   1   08/22/16 20:55     Anthracene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Azobenzene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Benzo(a)Anthracene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Benzo[a]pyrene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55	4-Nitrophenol	0.0261 U	0.0521	0.0156	mg/L	1		08/22/16 20:55
Acenaphthylene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       Aniline     0.0261 U     0.0521     0.0156     mg/L     1     08/22/16 20:55       Anthracene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       Azobenzene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       Benzo(a)Anthracene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       Benzo[a]pyrene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55	Acenaphthene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Aniline   0.0261 U   0.0521   0.0156   mg/L   1   08/22/16 20:55     Anthracene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Azobenzene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Benzo(a)Anthracene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55     Benzo[a]pyrene   0.00520 U   0.0104   0.00323   mg/L   1   08/22/16 20:55	Acenaphthylene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Anthracene0.00520 U0.01040.00323mg/L108/22/16 20:55Azobenzene0.00520 U0.01040.00323mg/L108/22/16 20:55Benzo(a)Anthracene0.00520 U0.01040.00323mg/L108/22/16 20:55Benzo[a]pyrene0.00520 U0.01040.00323mg/L108/22/16 20:55	Aniline	0.0261 U	0.0521	0.0156	mg/L	1		08/22/16 20:55
Azobenzene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       Benzo(a)Anthracene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       Benzo[a]pyrene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55	Anthracene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Benzo(a)Anthracene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55       Benzo[a]pyrene     0.00520 U     0.0104     0.00323     mg/L     1     08/22/16 20:55	Azobenzene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Benzo[a]pyrene 0.00520 U 0.0104 0.00323 mg/L 1 08/22/16 20:55	Benzo(a)Anthracene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
	Benzo[a]pyrene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55

Print Date: 09/02/2016 5:22:47PM

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#### Results of OW-1-0816

Client Sample ID: **OW-1-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639009 Lab Project ID: 1164639 Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Semivolatile Organics GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Benzo[b]Fluoranthene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Benzo[g,h,i]perylene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Benzo[k]fluoranthene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Benzoic acid	0.0261 U	0.0521	0.0156	mg/L	1		08/22/16 20:55
Benzyl alcohol	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Bis(2chloro1methylethyl)Ether	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Bis(2-Chloroethoxy)methane	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Bis(2-Chloroethyl)ether	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
bis(2-Ethylhexyl)phthalate	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Butylbenzylphthalate	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Carbazole	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Chrysene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Dibenzo[a,h]anthracene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Dibenzofuran	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Diethylphthalate	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Dimethylphthalate	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Di-n-butylphthalate	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
di-n-Octylphthalate	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Fluoranthene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Fluorene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Hexachlorobenzene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Hexachlorobutadiene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Hexachlorocyclopentadiene	0.0157 U	0.0313	0.00979	mg/L	1		08/22/16 20:55
Hexachloroethane	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Indeno[1,2,3-c,d] pyrene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Isophorone	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Naphthalene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Nitrobenzene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
N-Nitrosodimethylamine	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
N-Nitroso-di-n-propylamine	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
N-Nitrosodiphenylamine	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Pentachlorophenol	0.0261 U	0.0521	0.0156	mg/L	1		08/22/16 20:55
Phenanthrene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Phenol	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Pyrene	0.00520 U	0.0104	0.00323	mg/L	1		08/22/16 20:55
Surrogates							
2,4,6-Tribromophenol (surr)	73.5	43-140		%	1		08/22/16 20:55

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#### Results of OW-1-0816

Client Sample ID: **OW-1-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639009 Lab Project ID: 1164639 Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Semivolatile Organics GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
2-Fluorobiphenyl (surr)	58.4	44-119		%	1		08/22/16 20:55
2-Fluorophenol (surr)	45.4	19-119		%	1		08/22/16 20:55
Nitrobenzene-d5 (surr)	52.6	44-120		%	1		08/22/16 20:55
Phenol-d6 (surr)	44	10-115		%	1		08/22/16 20:55
Terphenyl-d14 (surr)	101	50-134		%	1		08/22/16 20:55

## **Batch Information**

Analytical Batch: XMS9556 Analytical Method: SW8270D Analyst: DSH Analytical Date/Time: 08/22/16 20:55 Container ID: 1164639009-I Prep Batch: XXX36072 Prep Method: SW3520C Prep Date/Time: 08/17/16 10:13 Prep Initial Wt./Vol.: 960 mL Prep Extract Vol: 1 mL

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SGS				LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16	
Results of <b>OW-1-0816</b> Client Sample ID: <b>OW-1-0816</b> Client Project ID: <b>Kenai Wells-Augus</b> Lab Sample ID: 1164639009	t APT Event A	Ci Ri M	ollection Da eceived Dat atrix: Water	te: 08/10/ te: 08/11/ (Surface,	16 13:53 16 11:00 Eff., Grou	und)	
Lab Project ID: 1164639		Se Lo	olids (%): ocation:				
Results by Volatile Fuels							
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 08/14/16 22:25
u <b>rrogates</b> 4-Bromofluorobenzene (surr)	108	50-150		%	1		08/14/16 22:25
Satch Information Analytical Batch: VFC13224 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 08/14/16 22:25 Container ID: 1164639009-K		F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	VXX29347 SW5030E ne: 08/14/ t./Vol.: 5 m Vol: 5 mL	3 16 06:00 IL		
rint Date: 09/02/2016 5:22:47PM						J flaggin	g is activated

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#### Results of OW-1-0816

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Client Sample ID: **OW-1-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639009 Lab Project ID: 1164639 Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:44
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:44
1,1,2-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:44
1,2-Dibromoethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:44
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:44
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:44
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:44
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:44
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:44
Benzene	0.200 U	0.400	0.120	ug/L	1		08/12/16 19:44
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:44
Bromoform	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Bromomethane	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:44
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:44
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:44
Chloroethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44

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#### Results of OW-1-0816

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Client Sample ID: **OW-1-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639009 Lab Project ID: 1164639 Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	<u>Allowable</u> Limits	Date Analyzed
Chloroform	0.500 U	1.00	0.300	ug/L	1		08/12/16 19:44
Chloromethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:44
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:44
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Freon-113	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:44
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Methylene chloride	2.50 U	5.00	1.00	ug/L	1		08/12/16 19:44
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:44
Naphthalene	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:44
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/12/16 19:44
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Styrene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Toluene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Trichloroethene	3.39	1.00	0.310	ug/L	1		08/12/16 19:44
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:44
Vinyl chloride	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:44
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/12/16 19:44
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		08/12/16 19:44
4-Bromofluorobenzene (surr)	103	85-114		%	1		08/12/16 19:44
Toluene-d8 (surr)	100	89-112		%	1		08/12/16 19:44

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#### Results of OW-1-0816

Client Sample ID: **OW-1-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639009 Lab Project ID: 1164639 Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

#### **Batch Information**

Analytical Batch: VMS16073 Analytical Method: SW8260B Analyst: TJT Analytical Date/Time: 08/12/16 19:44 Container ID: 1164639009-F Prep Batch: VXX29364 Prep Method: SW5030B Prep Date/Time: 08/12/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

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SGS		Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16						
Results of OW-1-0816								
Client Sample ID: <b>OW-1-0816</b> Client Project ID: <b>Kenai Wells-August</b> Lab Sample ID: 1164639009 Lab Project ID: 1164639	APT Event A	Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Waters Department								
<u>Parameter</u> Chloride Fluoride	<u>Result Qual</u> 28.9 0.112 J	<u>LOQ/CL</u> 2.00 0.200	<u>DL</u> 0.620 0.0620	<u>Units</u> mg/L mg/L	<u>DF</u> 10 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 08/11/16 19:4 08/11/16 16:0	
vitrate-N Sulfate	0.100 U 3.48	0.200 0.200	0.0620 0.0620	mg/L mg/L	1 1		08/11/16 16:0 08/11/16 16:0	
Batch Information								
Analytical Batch: WIC5558 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 08/11/16 19:48 Container ID: 1164639009-B		F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11589 METHOD ne: 08/10/1 't./Vol.: 10 r Vol: 10 mL	6 13:05 nL			
<u>Parameter</u> Furbidity	<u>Result</u> Qual 110	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyze</u> 08/11/16 15:5	
Analytical Batch: WAT10711 Analytical Method: SM21 2130B Analyst: NEG Analytical Date/Time: 08/11/16 15:50 Container ID: 1164639009-A								
Parameter Alkalinity	<u>Result Qual</u> 70.9	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyze</u> 08/15/16 22:0	
Batch Information								
Analytical Batch: WTI4499 Analytical Method: SM21 2320B Analyst: ACF Analytical Date/Time: 08/15/16 22:07 Container ID: 1164639009-Q								
<u>Parameter</u> Total Dissolved Solids	<u>Result Qual</u> 151	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	<u>Date Analyzed</u> 08/15/16 14:1	
int Date: 09/02/2016 5:22:47PM						J flaggin	g is activated	
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SGS				Sa USA	LNG F Impling : L-FG-Gl	acilities Ground and Testing Re RZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16		
Results of OW-1-0816									
Client Sample ID: <b>OW-1-0816</b> Client Project ID: <b>Kenai Wells-Aug</b> Lab Sample ID: 1164639009 Lab Project ID: 1164639	ust APT Event A	t A Collection Date: 08/10/16 13:53 t A Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by Waters Department			_						
Batch Information									
Analytical Batch: STS5150 Analytical Method: SM21 2540C Analyst: LLP Analytical Date/Time: 08/15/16 14:17 Container ID: 1164639009-A	,								
Parameter Total Suspended Solids	<u>Result Qual</u> 120	<u>LOQ/CL</u> 3.64	<u>DL</u> 1.13	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/15/16 08:39		
Analytical Batch: STS5149 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 08/15/16 08:39 Container ID: 1164639009-C	)								
<u>Parameter</u> pH	<u>Result Qual</u> 7.30	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/15/16 22:07		
Batch Information Analytical Batch: WTI4497 Analytical Method: SM21 4500-H B Analyst: ACF Analytical Date/Time: 08/15/16 22:07 Container ID: 1164639009-Q	,								
Print Date: 09/02/2016 5:22:47PM						J flaggin	g is activated		
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#### Results of EBF-Lot H1558

Client Sample ID: **EBF-Lot H1558** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639010 Lab Project ID: 1164639 Collection Date: 08/10/16 10:10 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	2.03	2.00	0.620	ug/L	2.5		08/19/16 10:27
Antimony	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:27
Arsenic	0.400 U	0.800	0.200	ug/L	2.5		08/19/16 10:27
Barium	0.0550 J	0.250	0.0400	ug/L	2.5		08/19/16 10:27
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		08/19/16 10:27
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:27
Boron	8.16	5.00	1.50	ug/L	2.5		08/19/16 10:27
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:27
Calcium	25.0 U	50.0	15.0	ug/L	2.5		08/19/16 10:27
Chromium	0.239 J	0.500	0.150	ug/L	2.5		08/19/16 10:27
Cobalt	0.0100 U	0.0200	0.0100	ug/L	2.5		08/19/16 10:27
Copper	0.250 U	0.500	0.200	ug/L	2.5		08/19/16 10:27
Iron	6.33 J	20.0	6.20	ug/L	2.5		08/19/16 10:27
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		08/19/16 10:27
Magnesium	10.0 U	20.0	6.20	ug/L	2.5		08/19/16 10:27
Manganese	0.0925 J	0.100	0.0310	ug/L	2.5		08/19/16 10:27
Molybdenum	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:27
Nickel	0.123 J	0.620	0.0620	ug/L	2.5		08/19/16 10:27
Potassium	25.0 U	50.0	15.0	ug/L	2.5		08/19/16 10:27
Selenium	0.500 U	1.00	0.310	ug/L	2.5		08/19/16 10:27
Silicon	66.4 J	100	31.0	ug/L	2.5		08/19/16 10:27
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 10:27
Sodium	50.0 U	100	31.0	ug/L	2.5		08/19/16 10:27
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 10:27
Tin	0.100 U	0.200	0.0620	ug/L	2.5		08/19/16 10:27
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		08/19/16 10:27
Zinc	1.42 J	3.10	0.400	ug/L	2.5		08/19/16 10:27
Batch Information							
Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 08/19/16 10:27 Container ID: 1164639010-A		F F F F	Prep Batch: M Prep Method: Prep Date/Tim Prep Initial Wt. Prep Extract V	IXX30094 E200.2 e: 08/18/10 /Vol.: 50 m ol: 10 mL	6 07:36 1L		



#### Results of EBF-Lot H1558

Client Sample ID: **EBF-Lot H1558** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639010 Lab Project ID: 1164639 Collection Date: 08/10/16 10:10 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Dissolved Metals by ICP/MS

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 08/19/16 10:27 Container ID: 1164639010-A Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/02/2016 5:22:47PM

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Results of EBT-0816

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

# Client Sample ID: **EBT-0816** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639011 Lab Project ID: 1164639

Collection Date: 08/10/16 10:00 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	3.07	2.00	0.620	ug/L	2.5		08/19/16 10:29
Antimony	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:29
Arsenic	0.400 U	0.800	0.200	ug/L	2.5		08/19/16 10:29
Barium	0.0559 J	0.250	0.0400	ug/L	2.5		08/19/16 10:29
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		08/19/16 10:29
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:29
Boron	8.09	5.00	1.50	ug/L	2.5		08/19/16 10:29
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:29
Calcium	25.0 U	50.0	15.0	ug/L	2.5		08/19/16 10:29
Chromium	0.250 U	0.500	0.150	ug/L	2.5		08/19/16 10:29
Cobalt	0.0100 U	0.0200	0.0100	ug/L	2.5		08/19/16 10:29
Copper	0.250 U	0.500	0.200	ug/L	2.5		08/19/16 10:29
Iron	9.51 J	20.0	6.20	ug/L	2.5		08/19/16 10:29
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		08/19/16 10:29
Magnesium	10.0 U	20.0	6.20	ug/L	2.5		08/19/16 10:29
Manganese	0.0714 J	0.100	0.0310	ug/L	2.5		08/19/16 10:29
Molybdenum	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:29
Nickel	0.0819 J	0.620	0.0620	ug/L	2.5		08/19/16 10:29
Potassium	25.0 U	50.0	15.0	ug/L	2.5		08/19/16 10:29
Selenium	0.500 U	1.00	0.310	ug/L	2.5		08/19/16 10:29
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 10:29
Sodium	50.0 U	100	31.0	ug/L	2.5		08/19/16 10:29
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 10:29
Tin	0.100 U	0.200	0.0620	ug/L	2.5		08/19/16 10:29
Vanadium	0.883 J	1.00	0.310	ug/L	2.5		08/19/16 10:29
Zinc	1.47 J	3.10	0.400	ug/L	2.5		08/19/16 10:29

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 08/19/16 10:29 Container ID: 1164639011-A Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/02/2016 5:22:47PM

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#### Results of TB1-1353

SG

Client Sample ID: **TB1-1353** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639012 Lab Project ID: 1164639 Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:11
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:11
1,1,2-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:11
1,2-Dibromoethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:11
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:11
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:11
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:11
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:11
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:11
Benzene	0.200 U	0.400	0.120	ug/L	1		08/12/16 19:11
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:11
Bromoform	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Bromomethane	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:11
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:11
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:11
Chloroethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11

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#### Results of TB1-1353

SG

Client Sample ID: **TB1-1353** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639012 Lab Project ID: 1164639 Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	Date Analyzed
Chloroform	0.500 U	1.00	0.300	ug/L	1		08/12/16 19:11
Chloromethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:11
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		08/12/16 19:11
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Freon-113	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:11
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
lsopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Methylene chloride	2.50 U	5.00	1.00	ug/L	1		08/12/16 19:11
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:11
Naphthalene	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:11
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/12/16 19:11
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Styrene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Toluene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		08/12/16 19:11
Vinyl chloride	0.500 U	1.00	0.310	ug/L	1		08/12/16 19:11
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/12/16 19:11
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/12/16 19:11
4-Bromofluorobenzene (surr)	102	85-114		%	1		08/12/16 19:11
Toluene-d8 (surr)	99.3	89-112		%	1		08/12/16 19:11

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#### Results of TB1-1353

Client Sample ID: **TB1-1353** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639012 Lab Project ID: 1164639 Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

#### **Batch Information**

Analytical Batch: VMS16073 Analytical Method: SW8260B Analyst: TJT Analytical Date/Time: 08/12/16 19:11 Container ID: 1164639012-A Prep Batch: VXX29364 Prep Method: SW5030B Prep Date/Time: 08/12/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

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Results of <b>TB2-1353</b> Client Sample ID: <b>TB2-1353</b> Client Project ID: <b>Kenai Wells-Augus</b> Lab Sample ID: 1164639013 Lab Project ID: 1164639	t APT Event A	C R M S						
Results by Volatile Fuels								
Parameter Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 08/24/16 06:57	
<b>urrogates</b> 4-Bromofluorobenzene (surr)	92.4	50-150		%	1		08/24/16 06:57	
Batch InformationAnalytical Batch: VFC13249Analytical Method: AK101Analyst: STAnalytical Date/Time: 08/24/16 06:57Container ID: 1164639013-A			Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	VXX29408 SW5030E ne: 08/23/ t./Vol.: 5 m Vol: 5 mL	3 16 06:00 IL			
int Date: 09/02/2016 5:22:47PM						J flaggin	g is activated	

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Results of TB3-1353								
Client Sample ID: <b>TB3-1353</b> Client Project ID: <b>Kenai Wells-August</b> Lab Sample ID: 1164639014 Lab Project ID: 1164639	t APT Event A	(       	Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by Metals Department								
Parameter Mercury	<u>Result</u> Qual 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 08/29/16 16:02	
Batch Information								
Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 08/29/16 16:02 Container ID: 1164639014-A			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30134 : METHOD me: 08/26/ [.] /t./Vol.: 50 Vol: 50 mL	) 16 15:00 mL			

Print Date: 09/02/2016 5:22:47PM

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SGS				s US	LNG Fa Sampling a AL-FG-GF	ncilities Ground nd Testing Re 2ZZ-00-0020	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
Results of <b>OW-3</b>							
Client Sample ID: <b>OW-3</b> Client Project ID: <b>Kenai Wells-August APT Event A</b> Lab Sample ID: 1164639015 Lab Project ID: 1164639		Collection Date: 08/10/16 17:50 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by <b>Dissolved Metals</b>							
Parameter Mercury	<u>Result</u> Qual 0.557 J	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 08/29/16 15:39
Batch Information							
Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 08/29/16 15:39 Container ID: 1164639015-B			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30134 I: METHOD me: 08/26/ [,] /t./Vol.: 50 Vol: 50 mL	16 15:00 mL		

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#### Results of OW-3

Client Sample ID: **OW-3** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639015 Lab Project ID: 1164639 Collection Date: 08/10/16 17:50 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

Parameter	Result Qual	100/01		Linite	DE	Allowable	Date Analyzed
Aluminum	2 53	2 00	0.620	<u>ua/l</u>	2.5	LITIIIS	08/19/16 10:32
Antimony	0.377	0.0500	0.0150	ug/L	2.5		08/19/16 10:32
Arsenic	2.76	0.800	0.200	ua/L	2.5		08/19/16 10:32
Barium	46.9	0.250	0.0400	ua/L	2.5		08/19/16 10:32
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		08/19/16 10:32
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:32
Boron	4.26 J	5.00	1.50	ug/L	2.5		08/19/16 10:32
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:32
Calcium	15900	50.0	15.0	ug/L	2.5		08/19/16 10:32
Chromium	1.80	0.500	0.150	ug/L	2.5		08/19/16 10:32
Cobalt	0.386	0.0200	0.0100	ug/L	2.5		08/19/16 10:32
Copper	0.217 J	0.500	0.200	ug/L	2.5		08/19/16 10:32
Iron	6200	20.0	6.20	ug/L	2.5		08/19/16 10:32
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		08/19/16 10:32
Magnesium	6150	20.0	6.20	ug/L	2.5		08/19/16 10:32
Manganese	450	0.100	0.0310	ug/L	2.5		08/19/16 10:32
Molybdenum	0.623	0.0500	0.0150	ug/L	2.5		08/19/16 10:32
Nickel	5.30	0.620	0.0620	ug/L	2.5		08/19/16 10:32
Potassium	2100	50.0	15.0	ug/L	2.5		08/19/16 10:32
Selenium	0.500 U	1.00	0.310	ug/L	2.5		08/19/16 10:32
Silicon	16000	100	31.0	ug/L	2.5		08/19/16 10:32
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 10:32
Sodium	8310	100	31.0	ug/L	2.5		08/19/16 10:32
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 10:32
Tin	0.100 U	0.200	0.0620	ug/L	2.5		08/19/16 10:32
Vanadium	1.79	1.00	0.310	ug/L	2.5		08/19/16 10:32
Zinc	3.01 J	3.10	0.400	ug/L	2.5		08/19/16 10:32
Batch Information							
Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 08/19/16 10:32 Container ID: 1164639015-A			Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL				
Parameter	Result Qual	LOQ/CL	DL	Units	DE	<u>Allowable</u> Limits	Date Analyzed

Hardness as CaCO3

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1.00

1.00

2.5

mg/L

65.0

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08/19/16 10:32



### Results of OW-3

Client Sample ID: **OW-3** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639015 Lab Project ID: 1164639 Collection Date: 08/10/16 17:50 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Dissolved Metals by ICP/MS

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 08/19/16 10:32 Container ID: 1164639015-A Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/02/2016 5:22:47PM

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SGS				s US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-0020	Confidential dwater Quality port - Event 2 16-004 Rev. 0 16-Dec-16
Results of <b>OW-1</b>							
Client Sample ID: <b>OW-1</b> Client Project ID: <b>Kenai Wells-August APT Event A</b> Lab Sample ID: 1164639016 Lab Project ID: 1164639		Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by <b>Dissolved Metals</b>			_				
Parameter Mercury	<u>Result Qual</u> 0.501 J	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/29/16 16:06
Batch Information							
Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 08/29/16 16:06 Container ID: 1164639016-B			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30134 : METHOD me: 08/26/ [,] /t./Vol.: 50 Vol: 50 mL	n 16 15:00 mL		

Print Date: 09/02/2016 5:22:47PM

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#### Results of OW-1

Client Sample ID: **OW-1** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639016 Lab Project ID: 1164639 Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

Parameter     Result Qual     LOQ/CL     DL     Units     DF       Aluminum     1.23 J     2.00     0.620     ug/L     2.5       Antimony     0.135     0.0500     0.0150     ug/L     2.5       Arsenic     1.27     0.800     0.200     ug/L     2.5       Barium     82.4     0.250     0.0400     ug/L     2.5       Beryllium     0.0250 U     0.0500     0.0250     ug/L     2.5       Boron     4.23 J     5.00     1.50     ug/L     2.5       Cadmium     0.0250 U     0.500     0.0150     ug/L     2.5       Cadmium     0.0250 U     0.500     0.150     ug/L     2.5       Cadmium     0.0250 U     0.500     0.150     ug/L     2.5       Calcium     24100     50.0     1.50     ug/L     2.5       Cobalt     0.611     0.0200     ug/L     2.5     1       Copper     0.262 J     0.500     0.0100     ug/L     2.5 <th>Limits Date Analyzed</th>	Limits Date Analyzed
Aluminum   1.23 J   2.00   0.620   ug/L   2.5     Antimony   0.135   0.0500   0.0150   ug/L   2.5     Arsenic   1.27   0.800   0.200   ug/L   2.5     Barium   82.4   0.250   0.0400   ug/L   2.5     Beryllium   0.0250 U   0.0500   0.0250   ug/L   2.5     Bismuth   0.0250 U   0.0500   0.0150   ug/L   2.5     Boron   4.23 J   5.00   1.50   ug/L   2.5     Cadmium   0.0250 U   0.0500   0.0150   ug/L   2.5     Cadmium   0.0250 U   0.0500   0.0150   ug/L   2.5     Cadmium   0.0250 U   0.0500   0.0150   ug/L   2.5     Calcium   24100   50.0   15.0   ug/L   2.5     Cobalt   0.161   0.0200   0.0100   ug/L   2.5     Copper   0.262 J   0.500   0.200   ug/L   2.5     Magnesium   6120   20.0   6.20   ug/L   2.5	<u> </u>
Antimony   0.135   0.0500   0.0150   ug/L   2.5     Arsenic   1.27   0.800   0.200   ug/L   2.5     Barium   82.4   0.250   0.0400   ug/L   2.5     Beryllium   0.0250 U   0.0500   0.0250   ug/L   2.5     Bismuth   0.0250 U   0.0500   0.0150   ug/L   2.5     Boron   4.23 J   5.00   1.50   ug/L   2.5     Cadmium   0.0250 U   0.0500   0.0150   ug/L   2.5     Cadmium   0.0250 U   0.0500   0.0150   ug/L   2.5     Cadmium   0.0250 U   0.0500   0.0150   ug/L   2.5     Cadmium   0.0250 U   0.500   0.150   ug/L   2.5     Cadeium   0.2650 U   0.500   0.150   ug/L   2.5     Cobalt   0.161   0.0200   0.0100   ug/L   2.5     Iron   5950   20.0   6.20   ug/L   2.5     Magnesium   6120   20.0   6.20   ug/L   2.5	08/19/16 10:35
Arsenic     1.27     0.800     0.200     ug/L     2.5       Barium     82.4     0.250     0.0400     ug/L     2.5       Beryllium     0.0250 U     0.0500     0.0250     ug/L     2.5       Bismuth     0.0250 U     0.0500     0.0150     ug/L     2.5       Boron     4.23 J     5.00     1.50     ug/L     2.5       Cadmium     0.0250 U     0.0500     0.0150     ug/L     2.5       Cadmium     0.0250 U     0.0500     0.0150     ug/L     2.5       Cadmium     0.0250 U     0.500     0.0150     ug/L     2.5       Calcium     24100     50.0     15.0     ug/L     2.5       Cabalt     0.161     0.0200     0.0100     ug/L     2.5       Copper     0.262 J     0.500     0.200     ug/L     2.5       Magnesium     6120     2.0     6.20     ug/L     2.5       Magnese     957     0.100     0.0310     ug/L     2.5 <td>08/19/16 10:35</td>	08/19/16 10:35
Barium     82.4     0.250     0.0400     ug/L     2.5       Beryllium     0.0250 U     0.0500     0.0250 ug/L     2.5       Bismuth     0.0250 U     0.0500     0.0150 ug/L     2.5       Boron     4.23 J     5.00     1.50 ug/L     2.5       Cadmium     0.0250 U     0.0500     0.0150 ug/L     2.5       Cadmium     0.0250 U     0.0500     0.0150 ug/L     2.5       Cadmium     0.0250 U     0.0500     0.0150 ug/L     2.5       Calcium     24100     50.0     15.0     ug/L     2.5       Chromium     0.250 U     0.500     0.150     ug/L     2.5       Cobalt     0.161     0.0200     0.0100     ug/L     2.5       Iron     5950     20.0     6.20     ug/L     2.5       Magnesium     6120     20.0     6.20     ug/L     2.5       Magnese     957     0.100     0.0310     ug/L     2.5       Nickel     2.28     0.620     0.0620	08/19/16 10:35
Beryllium     0.0250 U     0.0500     0.0250 ug/L     2.5       Bismuth     0.0250 U     0.0500     0.0150 ug/L     2.5       Boron     4.23 J     5.00     1.50 ug/L     2.5       Cadmium     0.0250 U     0.0500     0.0150 ug/L     2.5       Cadmium     0.0250 U     0.0500     0.0150 ug/L     2.5       Calcium     24100     50.0     15.0 ug/L     2.5       Chromium     0.250 U     0.500     0.150 ug/L     2.5       Cobalt     0.161     0.0200     0.0100 ug/L     2.5       Copper     0.262 J     0.500     0.200 ug/L     2.5       Iron     5950     20.0     6.20     ug/L     2.5       Magnesium     6120     20.0     6.20     ug/L     2.5       Magnese     957     0.100     0.0310     ug/L     2.5       Nickel     2.28     0.620     ug/L     2.5       Selenium     0.500 U     1.00     0.310     ug/L     2.5       S	08/19/16 10:35
Bismuth     0.0250 U     0.0500     0.0150     ug/L     2.5       Boron     4.23 J     5.00     1.50     ug/L     2.5       Cadmium     0.0250 U     0.0500     0.0150     ug/L     2.5       Calcium     24100     50.0     15.0     ug/L     2.5       Calcium     0.250 U     0.500     0.150     ug/L     2.5       Cobalt     0.161     0.0200     0.0100     ug/L     2.5       Cobalt     0.161     0.0200     0.0100     ug/L     2.5       Copper     0.262 J     0.500     0.200     ug/L     2.5       Lead     0.0500 U     0.100     0.0310     ug/L     2.5       Magnesium     6120     20.0     6.20     ug/L     2.5       Magnese     957     0.100     0.0310     ug/L     2.5       Molybdenum     0.300     0.500 U     0.0620     ug/L     2.5       Selenium     2390     50.0     15.0     ug/L     2.5	08/19/16 10:35
Boron     4.23 J     5.00     1.50     ug/L     2.5       Cadmium     0.0250 U     0.0500     0.0150     ug/L     2.5       Calcium     24100     50.0     15.0     ug/L     2.5       Chromium     0.250 U     0.500     0.150     ug/L     2.5       Cobalt     0.161     0.0200     0.0100     ug/L     2.5       Copper     0.262 J     0.500     0.200     ug/L     2.5       Iron     5950     20.0     6.20     ug/L     2.5       Lead     0.0500 U     0.100     0.0310     ug/L     2.5       Magnesium     6120     20.0     6.20     ug/L     2.5       Magnese     957     0.100     0.0310     ug/L     2.5       Nickel     2.28     0.620     ug/L     2.5       Selenium     0.500 U     1.00     0.310     ug/L     2.5       Silicon     14100     100     31.0     ug/L     2.5       Silicon <t< td=""><td>08/19/16 10:35</td></t<>	08/19/16 10:35
Cadmium0.0250 U0.05000.0150ug/L2.5Calcium2410050.015.0ug/L2.5Chromium0.250 U0.5000.150ug/L2.5Cobalt0.1610.02000.0100ug/L2.5Copper0.262 J0.5000.200ug/L2.5Iron595020.06.20ug/L2.5Lead0.0500 U0.1000.0310ug/L2.5Magnesium612020.06.20ug/L2.5Molybdenum0.3000.05000.0150ug/L2.5Nickel2.280.6200.0620ug/L2.5Potassium239050.015.0ug/L2.5Selenium0.500 U1.000.310ug/L2.5Silicon1410010031.0ug/L2.5Silicon866010031.0ug/L2.5Thallium0.0100 U0.02000.00620ug/L2.5Sodium866010031.0ug/L2.5Thallium0.0100 U0.02000.00620ug/L2.5	08/19/16 10:35
Calcium2410050.015.0ug/L2.5Chromium0.250 U0.5000.150ug/L2.5Cobalt0.1610.02000.0100ug/L2.5Copper0.262 J0.5000.200ug/L2.5Iron595020.06.20ug/L2.5Lead0.0500 U0.1000.0310ug/L2.5Magnesium612020.06.20ug/L2.5Magnese9570.1000.0310ug/L2.5Nickel2.280.6200.0620ug/L2.5Potassium0.3000.05000.0150ug/L2.5Selenium0.500 U1.000.310ug/L2.5Silicon1410010031.0ug/L2.5Silver0.0100 U0.02000.00620ug/L2.5Sodium866010031.0ug/L2.5Thallium0.0100 U0.02000.00620ug/L2.5	08/19/16 10:35
Chromium0.250 U0.5000.150ug/L2.5Cobalt0.1610.02000.0100ug/L2.5Copper0.262 J0.5000.200ug/L2.5Iron595020.06.20ug/L2.5Lead0.0500 U0.1000.0310ug/L2.5Magnesium612020.06.20ug/L2.5Magnese9570.1000.0310ug/L2.5Molybdenum0.3000.05000.0150ug/L2.5Nickel2.280.6200.0620ug/L2.5Selenium0.500 U1.000.310ug/L2.5Silicon1410010031.0ug/L2.5Silver0.0100 U0.02000.00620ug/L2.5Sodium866010031.0ug/L2.5Thallium0.0100 U0.20000.00620ug/L2.5	08/19/16 10:35
Cobalt0.1610.02000.0100ug/L2.5Copper0.262 J0.5000.200ug/L2.5Iron595020.06.20ug/L2.5Lead0.0500 U0.1000.0310ug/L2.5Magnesium612020.06.20ug/L2.5Manganese9570.1000.0310ug/L2.5Molybdenum0.3000.05000.0150ug/L2.5Nickel2.280.6200.0620ug/L2.5Potassium239050.015.0ug/L2.5Selenium0.500 U1.0031.0ug/L2.5Silicon1410010031.0ug/L2.5Sodium866010031.0ug/L2.5Thallium0.0100 U0.02000.0620ug/L2.5	08/19/16 10:35
Copper0.262 J0.5000.200ug/L2.5Iron595020.06.20ug/L2.5Lead0.0500 U0.1000.0310ug/L2.5Magnesium612020.06.20ug/L2.5Manganese9570.1000.0310ug/L2.5Molybdenum0.3000.05000.0150ug/L2.5Nickel2.280.6200.0620ug/L2.5Potassium239050.015.0ug/L2.5Selenium0.500 U1.000.310ug/L2.5Silicon1410010031.0ug/L2.5Sodium866010031.0ug/L2.5Thallium0.0100 U0.02000.00620ug/L2.5	08/19/16 10:35
Iron595020.06.20ug/L2.5Lead0.0500 U0.1000.0310ug/L2.5Magnesium612020.06.20ug/L2.5Manganese9570.1000.0310ug/L2.5Molybdenum0.3000.05000.0150ug/L2.5Nickel2.280.6200.0620ug/L2.5Potassium239050.015.0ug/L2.5Selenium0.500 U1.000.310ug/L2.5Silicon1410010031.0ug/L2.5Sodium866010031.0ug/L2.5Thallium0.0100 U0.02000.00620ug/L2.5	08/19/16 10:35
Lead0.0500 U0.1000.0310ug/L2.5Magnesium612020.06.20ug/L2.5Manganese9570.1000.0310ug/L2.5Molybdenum0.3000.05000.0150ug/L2.5Nickel2.280.6200.0620ug/L2.5Potassium239050.015.0ug/L2.5Selenium0.500 U1.000.310ug/L2.5Silicon1410010031.0ug/L2.5Sodium866010031.0ug/L2.5Thallium0.0100 U0.02000.00620ug/L2.5	08/19/16 10:35
Magnesium612020.06.20ug/L2.5Manganese9570.1000.0310ug/L2.5Molybdenum0.3000.05000.0150ug/L2.5Nickel2.280.6200.0620ug/L2.5Potassium239050.015.0ug/L2.5Selenium0.500 U1.000.310ug/L2.5Silicon1410010031.0ug/L2.5Silver0.0100 U0.02000.00620ug/L2.5Sodium866010031.0ug/L2.5Thallium0.0100 U0.02000.00620ug/L2.5	08/19/16 10:35
Manganese     957     0.100     0.0310     ug/L     2.5       Molybdenum     0.300     0.0500     0.0150     ug/L     2.5       Nickel     2.28     0.620     0.0620     ug/L     2.5       Potassium     2390     50.0     15.0     ug/L     2.5       Selenium     0.500 U     1.00     0.310     ug/L     2.5       Silicon     14100     100     31.0     ug/L     2.5       Silver     0.0100 U     0.0200     0.00620     ug/L     2.5       Sodium     8660     100     31.0     ug/L     2.5       Thallium     0.0100 U     0.0200     0.00620     ug/L     2.5	08/19/16 10:35
Molybdenum     0.300     0.0500     0.0150     ug/L     2.5       Nickel     2.28     0.620     ug/L     2.5       Potassium     2390     50.0     15.0     ug/L     2.5       Selenium     0.500 U     1.00     0.310     ug/L     2.5       Silicon     14100     100     31.0     ug/L     2.5       Silver     0.0100 U     0.0200     0.00620     ug/L     2.5       Sodium     8660     100     31.0     ug/L     2.5       Thallium     0.0100 U     0.0200     0.00620     ug/L     2.5	08/19/16 10:35
Nickel     2.28     0.620     0.0620     ug/L     2.5       Potassium     2390     50.0     15.0     ug/L     2.5       Selenium     0.500 U     1.00     0.310     ug/L     2.5       Silicon     14100     100     31.0     ug/L     2.5       Silver     0.0100 U     0.0200     0.00620     ug/L     2.5       Sodium     8660     100     31.0     ug/L     2.5       Thallium     0.0100 U     0.0200     0.00620     ug/L     2.5	08/19/16 10:35
Potassium     2390     50.0     15.0     ug/L     2.5       Selenium     0.500 U     1.00     0.310     ug/L     2.5       Silicon     14100     100     31.0     ug/L     2.5       Silver     0.0100 U     0.0200     0.00620     ug/L     2.5       Sodium     8660     100     31.0     ug/L     2.5       Thallium     0.0100 U     0.0200     0.00620     ug/L     2.5	08/19/16 10:35
Selenium     0.500 U     1.00     0.310     ug/L     2.5       Silicon     14100     100     31.0     ug/L     2.5       Silver     0.0100 U     0.0200     0.00620     ug/L     2.5       Sodium     8660     100     31.0     ug/L     2.5       Thallium     0.0100 U     0.0200     0.00620     ug/L     2.5	08/19/16 10:35
Silicon     14100     100     31.0     ug/L     2.5       Silver     0.0100 U     0.0200     0.00620     ug/L     2.5       Sodium     8660     100     31.0     ug/L     2.5       Thallium     0.0100 U     0.0200     0.00620     ug/L     2.5	08/19/16 10:35
Silver     0.0100 U     0.0200     0.00620     ug/L     2.5       Sodium     8660     100     31.0     ug/L     2.5       Thallium     0.0100 U     0.0200     0.00620     ug/L     2.5	08/19/16 10:35
Sodium     8660     100     31.0     ug/L     2.5       Thallium     0.0100 U     0.0200     0.00620     ug/L     2.5	08/19/16 10:35
Thallium     0.0100 U     0.0200     0.00620 ug/L     2.5	08/19/16 10:35
<b>T</b> 0.000 0.000 <i>t</i> 0.000	08/19/16 10:35
lin 0.100 0.200 0.0620 ug/L 2.5	08/19/16 10:35
Vanadium 0.479 J 1.00 0.310 ug/L 2.5	08/19/16 10:35
Zinc 2.83 J 3.10 0.400 ug/L 2.5	08/19/16 10:35
Batch Information	
Analytical Batch: MMS9498Prep Batch: MXX30094Analytical Method: 200.8 Low LevelPrep Method: E200.2Analyst: VDLPrep Date/Time: 08/18/16 07:36Analytical Date/Time: 08/19/16 10:35Prep Initial Wt./Vol.: 50 mLContainer ID: 1164639016-APrep Extract Vol: 10 mL	
Parameter Result Qual LOQ/CL DL Units DF   Hardness as CaCO3 85.5 1.00 1.00 mg/l 2.5	Allowable Limits Date Analyzed 08/19/16 10:35

Print Date: 09/02/2016 5:22:47PM

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## Results of OW-1

Client Sample ID: **OW-1** Client Project ID: **Kenai Wells-August APT Event A** Lab Sample ID: 1164639016 Lab Project ID: 1164639 Collection Date: 08/10/16 13:53 Received Date: 08/11/16 11:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Dissolved Metals by ICP/MS

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 08/19/16 10:35 Container ID: 1164639016-A Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/02/2016 5:22:47PM

E-98

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### Method Blank

Blank ID: MB for HBN 1741781 [MXX/30094] Blank Lab ID: 1345941 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1164639001, 1164639002, 1164639006, 1164639007, 1164639008, 1164639009, 1164639010, 1164639011, 1164639015, 1164639016

#### Results by 200.8 Low Level Parameter Results LOQ/CL DL Units Aluminum 1.00U 2.00 0.620 ug/L Antimony 0.0250U 0.0500 0.0150 ug/L Arsenic 0.400U 0.800 0.200 ug/L Barium 0.125U 0.250 0.0400 ug/L Beryllium 0.0250U 0.0500 0.0250 ug/L Bismuth 0.0250U 0.0500 0.0150 ug/L Boron 2.50U 5.00 1.50 ug/L Cadmium 0.0250U 0.0500 0.0150 ug/L Calcium 25.0U 50.0 15.0 ug/L Chromium 0.250U 0.500 0.150 ug/L Cobalt 0.0100U 0.0200 0.0100 ug/L Copper 0.250U 0.500 0.200 ug/L Iron 10.0U 20.0 6.20 ug/L Lead 0.0500U 0.100 0.0310 ug/L Magnesium 10.0U 20.0 6.20 ug/L Manganese 0.0500U 0.100 0.0310 ug/L Molybdenum 0.0250U 0.0500 0.0150 ug/L Nickel 0.0979J 0.620 0.0620 ug/L 25.0U 50.0 15.0 Potassium ug/L Selenium 0.500U 1.00 0.310 ug/L Silicon 31.3J 100 31.0 ug/L Silver 0.0100U 0.0200 0.00620 ug/L Sodium 50.0U 100 31.0 ug/L 0.0200 Thallium 0.0100U 0.00620 ug/L Tin 0.100U 0.200 0.0620 ug/L Vanadium 0.500U 1.00 0.310 ug/L

#### **Batch Information**

Zinc

Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Analytical Date/Time: 8/19/2016 9:35:36AM

1.65J

Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 8/18/2016 7:36:47AM Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

ug/L

0.400

Print Date: 09/02/2016 5:23:04PM

SGS North America Inc.

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3.10



#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1164639 [MXX30094] Blank Spike Lab ID: 1345942 Date Analyzed: 08/19/2016 09:38

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1164639001, 1164639002, 1164639006, 1164639007, 1164639008, 1164639009, 1164639010, 1164639011, 1164639015, 1164639016

Results by 200.8 Low Level							
Blank Spike (ug/L)							
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>			
Aluminum	50	51.5	103	(85-115)			
Antimony	5	5.39	108	(85-115)			
Arsenic	25	25.1	101	(85-115)			
Barium	25	25.0	100	(85-115)			
Beryllium	12.5	12.9	103	(85-115)			
Bismuth	12.5	12.8	102	(85-115)			
Boron	50	49.1	98	(85-115)			
Cadmium	12.5	12.9	103	(85-115)			
Calcium	5000	4700	94	(85-115)			
Chromium	12.5	11.5	92	(85-115)			
Cobalt	12.5	12.8	103	(85-115)			
Copper	25	23.6	95	(85-115)			
Iron	500	486	97	(85-115)			
Lead	5	5.10	102	(85-115)			
Magnesium	5000	5120	102	(85-115)			
Manganese	50	49.3	99	(85-115)			
Molybdenum	12.5	12.9	103	(85-115)			
Nickel	12.5	12.5	100	(85-115)			
Potassium	5000	5190	104	(85-115)			
Selenium	25	25.5	102	(85-115)			
Silicon	2500	2590	104	(85-115)			
Silver	5	5.03	101	(85-115)			
Sodium	5000	5220	104	(85-115)			
Thallium	2.5	2.56	103	(85-115)			
Tin	12.5	12.8	102	(85-115)			
Vanadium	25	24.5	98	(85-115)			
Zinc	50	52.4	105	(85-115)			

# **Batch Information**

Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/2016 07:36 Spike Init Wt./Vol.: 50 ug/L Extract Vol: 10 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 09/02/2016 5:23:07PM

SGS North America Inc.

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## Matrix Spike Summary

Original Sample ID: 1346128 MS Sample ID: 1346129 MS MSD Sample ID: 1346130 MSD Analysis Date: 08/19/2016 9:41 Analysis Date: 08/19/2016 9:44 Analysis Date: 08/19/2016 9:47 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639001, 1164639002, 1164639006, 1164639007, 1164639008, 1164639009, 1164639010, 1164639011, 1164639015, 1164639016

Results by 200.8 Low Level										
		Mat	rix Spike (u	g/L)	Spike	Duplicate	(ug/L)			
Parameter	Sample	<u>Spike</u>	Result	<u>Rec (%)</u>	Spike	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Aluminum	4.84	50.0	50.8	92	50.0	53.8	98	70-130	5.60	(< 20)
Antimony	0.0516	5.00	5.28	105	5.00	5.44	108	70-130	2.90	(< 20)
Arsenic	0.418J	25.0	24.4	96	25.0	25.5	100	70-130	4.70	(< 20)
Barium	2.82	25.0	27.8	100	25.0	28.4	102	70-130	1.90	(< 20)
Beryllium	0.0250U	12.5	11.5	92	12.5	12.3	98	70-130	6.20	(< 20)
Bismuth	0.0250U	12.5	12.1	97	12.5	12.6	101	70-130	3.90	(< 20)
Boron	6.30	50.0	50.8	89	50.0	52.5	92	70-130	3.20	(< 20)
Cadmium	0.892	12.5	13.3	100	12.5	13.7	102	70-130	2.40	(< 20)
Calcium	8330	5000	12600	85	5000	12800	90	70-130	2.20	(< 20)
Chromium	0.250U	12.5	11.1	89	12.5	11.5	92	70-130	3.60	(< 20)
Cobalt	0.228	12.5	12.6	99	12.5	13.1	103	70-130	3.60	(< 20)
Copper	0.331J	25.0	22.9	90	25.0	23.9	94	70-130	4.30	(< 20)
Iron	3880	500	4420	107	500	4570	138 *	70-130	3.50	(< 20)
Lead	2.78	5.00	7.71	99	5.00	7.91	103	70-130	2.50	(< 20)
Magnesium	3610	5000	7710	82	5000	8140	91	70-130	5.50	(< 20)
Manganese	112	50.0	152	81	50.0	159	94	70-130	4.20	(< 20)
Molybdenum	0.0733	12.5	12.6	100	12.5	13.0	103	70-130	2.70	(< 20)
Nickel	0.579J	12.5	12.6	96	12.5	13.3	102	70-130	5.60	(< 20)
Potassium	3180	5000	8120	99	5000	8480	106	70-130	4.40	(< 20)
Selenium	0.500U	25.0	23.7	95	25.0	24.3	97	70-130	2.70	(< 20)
Silver	0.0100U	5.00	5.16	103	5.00	5.21	104	70-130	0.97	(< 20)
Sodium	4590	5000	8740	83	5000	9470	97	70-130	7.90	(< 20)
Thallium	0.0100U	2.50	2.47	99	2.50	2.50	100	70-130	1.30	(< 20)
Tin	0.100U	12.5	12.3	99	12.5	12.9	103	70-130	4.00	(< 20)
Vanadium	0.500U	25.0	24.3	97	25.0	24.7	99	70-130	1.60	(< 20)
Zinc	483	50.0	508	50 *	50.0	531	96	70-130	4.40	(< 20)

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Analytical Date/Time: 8/19/2016 9:44:19AM Prep Batch: MXX30094 Prep Method: LL Digest for Metals on ICP-MS Prep Date/Time: 8/18/2016 7:36:47AM Prep Initial Wt./Vol.: 50.00mL Prep Extract Vol: 10.00mL

Print Date: 09/02/2016 5:23:08PM

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Blank ID: MB for HBN 1742357 [MXX/30134] Blank Lab ID: 1348656 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1164639001, 1164639002, 1164639005, 1164639006, 1164639007, 1164639008, 1164639009, 1164639014, 1164639015, 1164639016

## Results by EPA 1631 E

	-				
Parameter	Results	LOQ/CL	DL	Units	
Mercury	0.500U	1.00	0.500	ng/L	
Batch Information					
Analytical Batch: MC	CV5734	Prep Bat	tch: MXX30134	ŀ	
Analytical Method: E	EPA 1631 E	Prep Me	thod: METHOE	)	
Instrument:		Prep Da	te/Time: 8/26/2	016 3:00:00PM	
Analyst: NEG		Prep Init	ial Wt./Vol.: 50	mL	
Analytical Date/Time	: 8/29/2016 2:50:32PM	Prep Ext	ract Vol: 50 ml	_	

Print Date: 09/02/2016 5:23:13PM

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Blank ID: MB for HBN 1742357 [MXX/30134] Blank Lab ID: 1348657 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1164639001, 1164639002, 1164639005, 1164639006, 1164639007, 1164639008, 1164639009, 1164639014, 1164639015, 1164639016

## Results by EPA 1631 E

	-				
Parameter	<u>Results</u>	LOQ/CL	<u>DL</u>	<u>Units</u>	
Mercury	0.500U	1.00	0.500	ng/L	
Batch Information					
Analytical Batch: M		Prep Ba	tch: MXX30134	Ļ	
Analytical Method: E	EPA 1631 E	Prep Me	thod: METHOE	)	
Instrument:		Prep Da	te/Time: 8/26/2	016 3:00:00PM	
Analyst: NEG		Prep Init	ial Wt./Vol.: 50	mL	
Analytical Date/Time	: 8/29/2016 3:26:22PM	Prep Ex	tract Vol: 50 mL	_	

Print Date: 09/02/2016 5:23:13PM

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Blank ID: MB for HBN 1742357 [MXX/30134] Blank Lab ID: 1348660 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1164639001, 1164639002, 1164639005, 1164639006, 1164639007, 1164639008, 1164639009, 1164639014, 1164639015, 1164639016

## Results by EPA 1631 E

	_				
Parameter	<u>Results</u>	LOQ/CL	<u>DL</u>	<u>Units</u>	
Mercury	0.500U	1.00	0.500	ng/L	
Batch Information					
Analytical Batch: M		Prep Bat	tch: MXX30134	ļ	
Analytical Method: I	EPA 1631 E	Prep Me	thod: METHOE	)	
Instrument:		Prep Da	te/Time: 8/26/2	016 3:00:00PM	
Analyst: NEG		Prep Init	ial Wt./Vol.: 50	mL	
Analytical Date/Time	e: 8/29/2016 3:53:15PM	Prep Ext	tract Vol: 50 mL	-	

Print Date: 09/02/2016 5:23:13PM

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Blank ID: MB for HBN 1742357 [MXX/30134] Blank Lab ID: 1348665 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1164639001, 1164639002, 1164639005, 1164639006, 1164639007, 1164639008, 1164639009, 1164639014, 1164639015, 1164639016

## Results by EPA 1631 E

<u>Parameter</u> Mercury	<u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	
Batch Information					
Analytical Batch: MC	CV5734	Prep Bat	tch: MXX30134		
Analytical Method: E	EPA 1631 E	Prep Me	thod: METHOD	)	
Instrument:		Prep Da	te/Time: 8/26/2	016 3:00:00PM	
Analyst: NEG		Prep Init	ial Wt./Vol.: 50	mL	
Analytical Date/Time	: 8/29/2016 5:01:01PM	Prep Ext	ract Vol: 50 mL		

Print Date: 09/02/2016 5:23:13PM

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Blank ID: MB for HBN 1742357 [MXX/30134] Blank Lab ID: 1348667 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1164639001, 1164639002, 1164639005, 1164639006, 1164639007, 1164639008, 1164639009, 1164639014, 1164639015, 1164639016

## Results by EPA 1631 E

Results	LOQ/CL	<u>DL</u>	<u>Units</u>	
0.5000	1.00	0.500	ng/L	
5734	Prep Ba	tch: MXX30134		
A 1631 E	Prep Me	thod: METHOD		
	Prep Da	te/Time: 8/26/2	016 3:00:00PM	
	Prep Init	ial Wt./Vol.: 50	mL	
3/29/2016 5:19:03PM	Prep Ex	tract Vol: 50 mL		
	Results 0.500U 5734 A 1631 E 8/29/2016 5:19:03PM	Results         LOQ/CL           0.500U         1.00           5734         Prep Ba           A 1631 E         Prep Me           Prep Da         Prep Init           8/29/2016         5:19:03PM	Results 0.500ULOQ/CL 1.00DL 0.5005734 A 1631 EPrep Batch: MXX30134 Prep Method: METHOD Prep Date/Time: 8/26/20 Prep Initial Wt./Vol.: 50 Prep Extract Vol: 50 mL	Results 0.500ULOQ/CL 1.00DL 0.500Units ng/L5734 A 1631 EPrep Batch: MXX30134 Prep Method: METHOD Prep Date/Time: 8/26/2016 3:00:00PM Prep Initial Wt./Vol.: 50 mL5/29/2016 5:19:03PMPrep Extract Vol: 50 mL

Print Date: 09/02/2016 5:23:13PM

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Blank ID: MB for HBN 1742357 [MXX/30134] Blank Lab ID: 1348668 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1164639001, 1164639002, 1164639005, 1164639006, 1164639007, 1164639008, 1164639009, 1164639014, 1164639015, 1164639016

## Results by EPA 1631 E

	_				
Parameter	<u>Results</u>	LOQ/CL	<u>DL</u>	<u>Units</u>	
Mercury	0.500U	1.00	0.500	ng/L	
Batch Information					
Analytical Batch: M		Prep Ba	tch: MXX30134	ļ	
Analytical Method: I	EPA 1631 E	Prep Me	thod: METHOE	)	
Instrument:		Prep Da	te/Time: 8/26/2	016 3:00:00PM	
Analyst: NEG		Prep Init	ial Wt./Vol.: 50	mL	
Analytical Date/Time	e: 8/29/2016 4:20:09PM	Prep Ex	tract Vol: 50 mL	-	

Print Date: 09/02/2016 5:23:13PM

SGS	-			LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summa	ry			
Blank Spike ID: LCS Blank Spike Lab ID: Date Analyzed: 08/	for HBN 1164639 1348654 29/2016 14:41	[MXX3013	4]	
QC for Samples:	1164639001, 11646 1164639014, 11646	639002, 1164 639015, 1164	4639005, 11646 4639016	Matrix: Water (Surface, Eff., Ground) 639006, 1164639007, 1164639008, 1164639009,
Results by <b>FPA 163</b> 1	l F		_	
		Blank Snik	e (ng/L)	
<u>Parameter</u> Mercury	<u>Spike</u> 25	<u>Result</u> 24.9	<u>Rec (%)</u> 100	<u>CL</u> (77-123)
Batch Information	]			
Analytical Batch: MC Analytical Method: E Instrument: Analyst: NEG	:V5734 IPA 1631 E			Prep Batch: <b>MXX30134</b> Prep Method: <b>METHOD</b> Prep Date/Time: <b>08/26/2016 15:00</b> Spike Init Wt./Vol.: 25 ng/L Extract Vol: 50 mL Dupe Init Wt./Vol.: Extract Vol:

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SGS						Sa USA	LNG Facili ampling and L-FG-GRZZ	ities Groun Testing Ro Z-00-0020	Confider dwater Qua eport - Ever 16-004 Rev 16-Dec	itial ality nt 2 v. 0 -16
Matrix Spike Summary	,									
Original Sample ID: 116 MS Sample ID: 134865 MSD Sample ID: 13486 QC for Samples: 11646 11646	34639015 58 MS 659 MSD 639001, 11646390 639014, 11646390	02, 116463 15, 116463	39005, 116 39016	4639006, 11	Analysis Analysis Analysis Matrix: 6463900	Date: 04 Date: 04 Date: 04 Date: 04 Water (Si 7, 1164639	8/29/2016 8/29/2016 8/29/2016 urface, Eff. 9008, 11646	15:39 15:44 15:48 , Ground) 339009,		
Results by EPA 1631 E		Ma	atrix Spike	(na/L)	Snik	e Duplicat	e (na/L)			
larameter lercury	<u>Sample</u> 0.557J	<u>Spike</u> 25.0	<u>Result</u> 24.3	<u>Rec (%)</u> 95	<u>Spike</u> 25.0	<u>Result</u> 24.3	<u>Rec (%)</u> 95	<u>CL</u> 71-125	<u>RPD (%)</u> 0.04	<u>RPD Cl</u> (< 24 )
Analytical Method: EP/ Instrument: Analyst: NEG Analytical Date/Time: 8	A 1631 E 3/29/2016 3:44:17	7PM		Preg Preg Preg	<ul> <li>Method:</li> <li>Date/Tin</li> <li>Initial With</li> <li>Extract N</li> </ul>	Digestion ne: 8/26/2 t./Vol.: 50. /ol: 50.00	Low Level 016 3:00:0 00mL mL	Mercury (\ 00PM	NV)	
int Date: 09/02/2016 5:23:16	6PM	) West Pot	ter Drive Ai	nchorage, Al	< 95518					
SGS North An	t 90	07.562.234	3 <b>f</b> 907.56	1.5301 www	.us.sgs.co	om				_



Print Date: 09/02/2016 5:23:16PM

- Method Blank	Method Blank Blank ID: MB for HBN 1741534 [STS/5149] Blank Lab ID: 1344758				
Blank ID: MB for HBN 1741 Blank Lab ID: 1344758			k: Water (Surfa	ace, Eff., Ground)	
QC for Samples: 1164639001, 1164639002, 11	64639008, 1164639009				
Results by SM21 2540D					
Parameter Total Suspended Solids	<u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.310	<u>Units</u> mg/L	
Batch Information					
Analytical Batch: STS5149 Analytical Method: SM21 2 Instrument: Analyst: LLP Analytical Date/Time: 8/15	2540D /2016 8:39:26AM				

Print Date: 09/02/2016 5:23:18PM

SGS

Ouplicate Sample Summary									
Driginal Sample ID: 1164639001 Duplicate Sample ID: 1344813			Analysis Date: 08/15/2016 08:39 Matrix: Water (Surface, Eff., Ground)						
QC for Samples:									
1164639001, 1164639002, 1	164639008, 11646	339009							
Results by SM21 2540D									
NAME_	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL				
Total Suspended Solids	117	119	mg/L	1.10	(< 5)				
Batch Information									
Analytical Batch: STS5149 Analytical Method: SM21 2540 Instrument: Analyst: LLP	0D								

Print Date: 09/02/2016 5:23:19PM

SGS North America Inc.

SGS

Duplicate Sample Summary							
Original Sample ID: 11646390 Duplicate Sample ID: 1344814	Original Sample ID: 1164639002 Duplicate Sample ID: 1344814		Analysis Date: 08/15/2016 08:39 Matrix: Water (Surface, Eff., Ground)				
QC for Samples:							
1164639002, 1164639008, 110	64639009						
Results by SM21 2540D							
NAME	<u>Original</u>	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL		
Total Suspended Solids	81.5	79.5	mg/L	2.50	(< 5)		
Batch Information Analytical Batch: STS5149 Analytical Method: SM21 25400 Instrument: Analyst: LLP	D						

Print Date: 09/02/2016 5:23:19PM

SGS



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1164639 [STS5149] Blank Spike Lab ID: 1344759 Date Analyzed: 08/15/2016 08:39 Spike Duplicate ID: LCSD for HBN 1164639 [STS5149] Spike Duplicate Lab ID: 1344760 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639001, 1164639002, 1164639008, 1164639009

Results by SM21 2540D									
		Blank Spike	e (mg/L)	5	Spike Duplic	cate (mg/L)			
Parameter	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Total Suspended Solids	50	49.9	100	50	50.1	100	(75-125)	0.40	(< 5)
Batch Information									
Analytical Batch: STS5149				Pre	p Batch:				
Analytical Method: SM21 2540E	)			Pre	p Method:	~ .			
Instrument: Analyst: IIP				Spi	ke Init Wt./\	e. /ol.: 50 ma/l	Extract Vo	l: 1000 mL	
Andryot. Lei				Dup	e Init Wt./V	/ol.: 50 mg/L	Extract Vol	: 1000 mL	

Print Date: 09/02/2016 5:23:21PM

SGS			S US/	ampling and Testing Report - I AL-FG-GRZZZ-00-002016-004 16-	Event 2 Rev. 0 Dec-16
Method Blank		·			
Blank ID: MB for HBN 174 Blank ] aL ID: 1b448QC	1573 [STS/51539	Matri	x: Wat6r (Sur	fac6, Eff., Ground)	
mp for Sae sl60: 11Q4Qb8331, 11Q4Qb8332, 1	1Q4Qb8338				
R60ult0 Ly SM21 2540C		]			
Parae 6t6r	R60ult0	<u>] Om/p]</u>	<u>D]</u>	UnitO	
Batch Information hnalytical Batcv: STS518 hnalytical M6tvod: SM21 In0true 6nt: hnaly0t: ]]P hnalytical Dat6/Tie 6: C/1	53 2543p 5/231Q 2:17:b3PM				

Print Dat6: 38/32/231Q 5:2b:2bPM

SGS Nortv he 6rica Inc.



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1164639 [STS515] b Blank Spike La7 ID: 1344969 Date Analyzed: ] 08158 ] 16 14:12 Spike Duplicate ID: LCSD for HBN 1164639 [STS515] b Spike Duplicate La7 ID: 134492] Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639] ] 1, 1164639] ] / , 1164639] ] 9

Results 7y SM21 2540C									
		Blank Spike	e (mg <b>&amp;</b> _)	5	Spike Dupli	cate (mg&)			
Parameter	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Total Dissol-ed Solids	33]	330	1] /	33]	331	1]]	(25<1/5)	/ .1]	(h 5 )
Batch Information Analytical BatcV: STS5150 Analytical MetVod: SM21 25400 Instrument: Analyst: LLP				Pre Pre Pre Spil Dup	p BatcV: p MetVod: p Date8Tim ke Init Wt.8 pe Init Wt.8/	e: / ol.: 33] mg / ol.: 33] mg	18. Extract v 8. Extract v	ol: 1]] mL ol: 1]] mL	

Print Date: ] 98 / 8 ] 16 5:/ 3:/ 6PM

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LNG Facilities	s Groundwater Quality
Sampling and Te	sting Report - Event 2
USAL-FG-GRZZZ-	00-002016-004 Rev. 0
	16-Dec-16

SGS			Sa USA	ampling and Testing R L-FG-GRZZZ-00-0020	eport - Event 2 016-004 Rev. 0 16-Dec-16
Method Blank					
Blank ID: MB for HBN 174 Blank ba8 ID: 1[ 43[ ] 4	153[ ST/ T9313] L	Ma2ti	i:xa2erWV(rfa	auecEff.cGro( nd)	
QC for Tamples: 11545[ 600,					
Res( I& 8y SM21 2540C					
Parame2er / o2al Dtssolged Toltds	<u>Res(128</u> 3.00U	<u>bOQ9Cb</u> 10.0	<u>Db</u> [ .10	<u>Unt2s</u> mA9o	
h naly2ual Me2vod: TM] 1 Ins2(men2 h nalys2 bbP h naly2ual Da2e9 tme: , 9	] 340C 59 015 1] :4] :] 3PM				

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SGS			US	LNG Facilities Gro Sampling and Testing SAL-FG-GRZZZ-00-00	Confidential undwater Quality Report - Event 2 2016-004 Rev. 0 16-Dec-16	
Duplicate Sample Summa	ry					
Original Sample ID: 116463 Dcplit a& Sample ID: 134A	3900u 3ys		/ nal52i2 Da&e: x a8ri₩ ( a&er f	0uMl6Nj016 1y:4y Scr,ateE.,,0Eordcr	ו) R	
CP ,dr Sample2:						
116463900u						
b e2cl& 05 SM21 2540C						
<u>U/ x .</u>	Original	Dcplit a&	<u>L ni82</u>	<u>b %D fN R</u>	<u>b%DP7</u>	
Td&al Di22dl <e) 2<="" sdli)="" td=""><td>11s</td><td>116</td><td>mgM</td><td>0@6</td><td>fBAR</td><td></td></e)>	11s	116	mgM	0@6	fBAR	

mg⊠i

%rin8Da&: 09101y1016 A:y3:y9%x

So S Udr&/ merit a Int G

**Batch Information** 

In28 cmen8 / nal528 77%

/ nal58t al ha8t v: STSA1Ay / nal58t al x e8/d): Sx y1 yA40P



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1164639 [STS515] b Blank Spike La7 ID: 13453] 5 Date Analyzed: 08/16/] 016 1] :4] Spike D2pliuate ID: LCSD for HBN 1164639 [STS515] b Spike D2pliuate La7 ID: 13453] 6 s atriM x ater W32rfaue(, fftf. ro2ndG

g C for SaP pleR 1164639008

_ceR2ltR7y <b>SM21 2540C</b>										$\prec$
		Blank Spike	WP %LG	S	pike D2pliu	uate ₩%LG				
<u>) araP eter</u>	<u>Spike</u>	<u>c eR2lt</u>	<u>ceuWh</u> G	<u>Spike</u>	<u>c eR2lt</u>	<u>ceuWh</u> G	CL	<u>c)DWh</u> G	<u>c) D CL</u>	
Total DiRPolQed SolidR	330	33]	101	330	334	101	₩5<1]5 G	0臣0	₩ 5 G	
Batch Information										
Analytiual BatuV: <b>STS5152</b> Analytiual s etVod: <b>SM21 2540C</b> InRr2P ent: AnalyR: LLP				) re  ) re  ) re  Spił	o BatuV: o s etVod: o Date/TiP ke Init x tÆv	e: / oIE 330 P %	L, Mraut v	ol: 100 P L		
,				D2p	e Init x t∉v	ole 330 P %	L, Murautvo	ol: 100 P L		

) rint Date: 09/0] /] 016 5:] 3:31) s

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SGS			s US,	ampling and Testing Rep AL-FG-GRZZZ-00-00201	oort - Event 2 6-004 Rev. 0 16-Dec-16
Method Blank		]			
Blank ID: MB for HBN Blank Lab ID: 184Q4C	1741553 [STS/9197] 9	Matri	x: Watsr (Sur	facs, Eff., Ground)	
Cm for Sap els6: 11Q4Q80331, 11Q4Q803	32				
Rs6ult6 by <b>SM21 254</b>	)B				
Parap stsr Total Solid6	<u>Rs6ult6</u>	LOC/mL 13.3	<u>DL</u> 13.3	<u>Unit6</u>	
Batch Information					
Analytical Batch: ST Analytical Msthod: S In6trup snt: Analy6t: LLP Analytical Dats/Tip s	S9197 M21 2943B : 5/10/231Q 8:33:32PM				

Print Dats: 30/32/231Q 9:28:82PM

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		7			
Original Sample ID: 116467200	)1	A	nalysis Date: 08/	19/2016 15:00	
		IV	allix. Walei (Sui	ace, Ell., Glound)	
1164639001, 1164639002					
		-			
Results by SM21 2540D					
NAME	<u>Original</u>	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL
Total Solids	114	140	mg/L	20.50*	(< 5)
Dt æh Infoyr t æon Analytical Batch: STS5157 Analytical Method: SM21 2540B Instrument: Analyst: LLP					
Print Date: 09/02/2016 5:23:34PM					
	200 West Pottor	Drive Anchorage AK	05519		

Method Blank					
Blank ID: MB for HBN 1741529 [VXX/29 Blank Lab ID: 1344736	9345]	Matrix:	Water (Surface	e, Eff., Ground)	
QC for Samples: 1164639001, 1164639002					
Results by AK101	_				
Parameter         Results           Gasoline Range Organics         0.0500U		<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	
Surrogates 4-Bromofluorobenzene (surr) 88.1		50-150		%	
Batch Information					
Analytical Batch: VFC13222 Analytical Method: AK101 Instrument: Agilent 7890 PID/FID Analyst: ST Analytical Date/Time: 8/14/2016 9:22:0	0PM	Prep Bato Prep Meti Prep Date Prep Initia Prep Extr	ch: VXX29345 hod: SW5030B e/Time: 8/14/201 al Wt./Vol.: 5 mL act Vol: 5 mL	6 6:00:00AM	

Print Date: 09/02/2016 5:23:37PM

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## **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1164639 [VXX29345] Blank Spike Lab ID: 1344737 Date Analyzed: 08/14/2016 20:44 Spike Duplicate ID: LCSD for HBN 1164639 [VXX29345] Spike Duplicate Lab ID: 1344738 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639001, 1164639002

Results by AK101			_						
	E	Blank Spike	e (mg/L)	S	pike Duplic	cate (mg/L)			
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Gasoline Range Organics	1.00	0.905	91	1.00	0.906	91	(60-120)	0.05	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	96.8	97	0.0500	101	101	(50-150)	4.20	
Batch Information									
Analytical Batch: VFC13222				Prep	Batch: V	XX29345			
Analytical Method: AK101				Prep	Method:	SW5030B			
Instrument: Agilent 7890 PID/	FID			Prep	Date/Time	e: 08/14/201	6 06:00		
Analyst: ST				Spik	e Init Wt./\	/ol.: 1.00 mg	g/L Extract \	/ol: 5 mL	
				Dup	e Init Wt./V	/ol.: 1.00 mg	g/L Extract V	ol: 5 mL	

Print Date: 09/02/2016 5:23:39PM

lank I ab ID: 1244755				
Q for CaS mpe: 1s4s2300, t 11s4s23003				
peclie bU <b>AK101</b>				
araSpipr <u>y peclie</u> aeolxop y an- p P r- anxEe 009500O	<u>LP6 XQL</u> 00300	<u>DL</u> 0 <b>G</b> 210	<u>Onxie</u> S-XL	
i <b>rrogates</b> BroSoficorobpn%pnp uecrrR 110	50z150		8	
tch Information				
AnalUxEal BaiEh: [FQ12//4 AnalUxEal Mpiho): AK101 IneircSpni: A-xpni 7, 30A gIDXFID AnalUbi: CT AnalUxEal DaipXTxSp: ,XI4X01s 3:10:00gM	grpmBai grpmMp grpmDai grpmInx grpm. Vi	Eh: [VV/3247 iho): C(5020B pXTxSp:, X4X( val(iOX[olG5S faE[ol:5SL	9 01s s:00:00AM L	

SG:

Method Blank



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1164639 [VXX29345] Blank Spike Lab ID: 1344576 Date Analyzed: 08/14/2016 20:33 Spike Duplicate ID: LCSD for HBN 1164639 [VXX29345] Spike Duplicate Lab ID: 1344575 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639008, 1164639009

Results by AK101			_							
	E	Blank Spike	e (mg/L)	(mg/L) Spike Duplicate (mg/L)						
Parameter	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL	
Gasoline Range Organics	1.00	0.971	97	1.00	0.883	88	(60-120)	5.40	(< 20 )	
Surrogates										
4-Bromofluorobenzene (surr)	0.0700	119	119	0.0700	115	115	(70-170)	1.30		
Batch Information										
Analytical Batch: VFC13227				Prep	Batch: V	442P378				
Analytical Method: AK101				Prep	Prep Method: S5 W030B					
Instrument: Agilent 89P0A DI	/ TFI/			Prep Date/Time: 0971712016 06:00						
Analyst: SX				Spik	e Init Wt./\	/ol.: 1.00 mg	g/L Extract \	Vol: 7 mL		
				Dup	e Init Wt./V	/ol.: 1.00 mg	g/L Extract V	ol: 7 mL		

Print Date: 09/02/2016 7:23:45PM

Matrix: Water (Surface, Eff., Ground)

# Method Blank

SG:

Blank ID: MB for HBN 1741711 [VXX/29363] Blank Lab ID: 1345589

QC for Samples: 1164639003

## Results by SW8260B

Parameter	Results	LOQ/CL	DL	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.500U	1.00	0.310	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	5.00U	10.0	3.10	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.300	ug/L

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E-127

Matrix: Water (Surface, Eff., Ground)

# Method Blank

SG

Blank ID: MB for HBN 1741711 [VXX/29363] Blank Lab ID: 1345589

QC for Samples: 1164639003

## Results by SW8260B

Parameter	Results	LOQ/CL	DL	<u>Units</u>
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	2.50U	5.00	1.00	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	5.00U	10.0	3.10	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	100	81-118		%
4-Bromofluorobenzene (surr)	101	85-114		%
Toluene-d8 (surr)	104	89-112		%

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E-128

ethod Blank				
Blank ID: MB for HBN 1 Blank Lab ID: 1345589	741711 [VXX/29363]	Matri	x: Water (Su	rface, Eff., Ground)
QC for Samples: 164639003				
Results by SW8260B				
Parameter	Results	LOQ/CL	DL	<u>Units</u>
atch Information				
Analytical Batch: VMS Analytical Method: SW Instrument: VPA 780/5	16072 /8260B :975 GC/MS	Prep Ba Prep M Prep Da Prep In	atch: VXX2930 ethod: SW503 ate/Time: 8/12 itial Wt./Vol.: 5	63 30B 2/2016 6:00:00AM 5 mL

Print Date: 09/02/2016 5:23:49PM

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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1164639 [VXX29363] Blank Spike Lab ID: 1345590 Date Analyzed: 08/12/2016 13:20 Spike Duplicate ID: LCSD for HBN 1164639 [VXX29363] Spike Duplicate Lab ID: 1345591 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639003

## Results by SW8260B

		Blank Spike	e (ug/L)	5	Spike Dupli	cate (ug/L)			
Parameter	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
1,1,1,2-Tetrachloroethane	30	34.3	114	30	31.0	103	(78-124)	10.00	(< 20)
1,1,1-Trichloroethane	30	29.2	97	30	31.0	103	(74-131)	6.10	(< 20)
1,1,2,2-Tetrachloroethane	30	32.0	107	30	31.3	104	(71-121)	2.10	(< 20)
1,1,2-Trichloroethane	30	30.2	101	30	29.3	98	(80-119)	3.10	(< 20)
1,1-Dichloroethane	30	30.0	100	30	31.8	106	(77-125)	6.00	(< 20)
1,1-Dichloroethene	30	27.5	92	30	29.5	98	(71-131)	6.80	(< 20)
1,1-Dichloropropene	30	29.4	98	30	30.3	101	(79-125)	3.10	(< 20)
1,2,3-Trichlorobenzene	30	29.2	97	30	28.4	95	(69-129)	2.80	(< 20)
1,2,3-Trichloropropane	30	30.9	103	30	30.0	100	(73-122)	2.90	(< 20)
1,2,4-Trichlorobenzene	30	30.0	100	30	29.9	100	(69-130)	0.43	(< 20)
1,2,4-Trimethylbenzene	30	29.8	99	30	29.2	97	(79-124)	2.20	(< 20)
1,2-Dibromo-3-chloropropane	30	32.9	110	30	33.4	111	(62-128)	1.40	(< 20)
1,2-Dibromoethane	30	30.6	102	30	29.6	99	(77-121)	3.60	(< 20)
1,2-Dichlorobenzene	30	31.0	103	30	31.4	105	(80-119)	1.10	(< 20)
1,2-Dichloroethane	30	27.9	93	30	29.4	98	(73-128)	5.00	(< 20)
1,2-Dichloropropane	30	32.2	107	30	33.0	110	(78-122)	2.50	(< 20)
1,3,5-Trimethylbenzene	30	32.6	109	30	31.8	106	(75-124)	2.50	(< 20)
1,3-Dichlorobenzene	30	31.3	104	30	31.1	104	(80-119)	0.42	(< 20)
1,3-Dichloropropane	30	30.1	100	30	29.2	97	(80-119)	3.20	(< 20)
1,4-Dichlorobenzene	30	31.9	106	30	31.5	105	(79-118)	1.40	(< 20)
2,2-Dichloropropane	30	28.3	94	30	29.9	100	(60-139)	5.50	(< 20)
2-Butanone (MEK)	90	88.9	99	90	93.9	104	(56-143)	5.50	(< 20)
2-Chlorotoluene	30	31.7	106	30	31.3	104	(79-122)	1.40	(< 20)
2-Hexanone	90	89.7	100	90	90.9	101	(57-139)	1.30	(< 20)
4-Chlorotoluene	30	32.2	107	30	31.7	106	(78-122)	1.70	(< 20)
4-Isopropyltoluene	30	29.7	99	30	29.8	100	(77-127)	0.50	(< 20)
4-Methyl-2-pentanone (MIBK)	90	89.0	99	90	89.5	100	(67-130)	0.54	(< 20)
Benzene	30	31.9	106	30	32.6	109	(79-120)	2.20	(< 20)
Bromobenzene	30	31.2	104	30	31.2	104	(80-120)	0.06	(< 20)
Bromochloromethane	30	29.6	99	30	31.5	105	(78-123)	6.10	(< 20)
Bromodichloromethane	30	28.8	96	30	30.3	101	(79-125)	5.10	(< 20)
Bromoform	30	32.1	107	30	30.6	102	(66-130)	4.70	(< 20)
Bromomethane	30	25.8	86	30	29.4	98	(53-141)	13.20	(< 20)
Carbon disulfide	45	44.2	98	45	47.0	104	(64-133)	6.00	(< 20 )

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## **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1164639 [VXX29363] Blank Spike Lab ID: 1345590 Date Analyzed: 08/12/2016 13:20 Spike Duplicate ID: LCSD for HBN 1164639 [VXX29363] Spike Duplicate Lab ID: 1345591 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639003

## Results by SW8260B

		Blank Spike	e (ug/L)	5	Spike Duplic	ate (ug/L)			
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Carbon tetrachloride	30	28.6	95	30	30.3	101	(72-136)	5.60	(< 20)
Chlorobenzene	30	31.6	105	30	31.0	103	(82-118)	2.00	(< 20)
Chloroethane	30	26.1	87	30	27.8	93	(60-138)	6.30	(< 20)
Chloroform	30	28.3	94	30	30.0	100	(79-124)	5.60	(< 20)
Chloromethane	30	27.8	93	30	29.9	100	(50-139)	7.20	(< 20)
cis-1,2-Dichloroethene	30	28.3	94	30	30.5	102	(78-123)	7.60	(< 20)
cis-1,3-Dichloropropene	30	29.2	97	30	29.6	99	(75-124)	1.40	(< 20)
Dibromochloromethane	30	30.6	102	30	29.5	98	(74-126)	3.40	(< 20)
Dibromomethane	30	30.2	101	30	31.1	104	(79-123)	2.90	(< 20)
Dichlorodifluoromethane	30	27.1	90	30	29.1	97	(32-152)	7.20	(< 20)
Ethylbenzene	30	32.4	108	30	32.5	108	(79-121)	0.37	(< 20)
Freon-113	45	44.8	100	45	47.6	106	(70-136)	6.00	(< 20)
Hexachlorobutadiene	30	33.4	111	30	34.4	115	(66-134)	3.00	(< 20)
Isopropylbenzene (Cumene)	30	29.3	98	30	29.6	99	(72-131)	1.20	(< 20)
Methylene chloride	30	28.6	95	30	30.6	102	(74-124)	6.60	(< 20)
Methyl-t-butyl ether	45	43.5	97	45	44.6	99	(71-124)	2.50	(< 20)
Naphthalene	30	29.7	99	30	29.3	98	(61-128)	1.30	(< 20)
n-Butylbenzene	30	30.4	101	30	30.4	101	(75-128)	0.03	(< 20)
n-Propylbenzene	30	32.3	108	30	31.7	106	(76-126)	1.70	(< 20)
o-Xylene	30	29.2	97	30	29.0	97	(78-122)	0.62	(< 20)
P & M -Xylene	60	58.3	97	60	58.2	97	(80-121)	0.26	(< 20)
sec-Butylbenzene	30	30.0	100	30	30.0	100	(77-126)	0.00	(< 20)
Styrene	30	29.4	98	30	29.4	98	(78-123)	0.24	(< 20)
tert-Butylbenzene	30	29.9	100	30	29.7	99	(78-124)	0.91	(< 20)
Tetrachloroethene	30	33.0	110	30	30.8	103	(74-129)	6.90	(< 20)
Toluene	30	30.8	103	30	29.3	98	(80-121)	4.80	(< 20)
trans-1,2-Dichloroethene	30	29.8	100	30	31.9	106	(75-124)	6.80	(< 20)
trans-1,3-Dichloropropene	30	31.2	104	30	30.0	100	(73-127)	4.10	(< 20)
Trichloroethene	30	31.6	105	30	32.3	108	(79-123)	2.20	(< 20)
Trichlorofluoromethane	30	26.5	88	30	28.5	95	(65-141)	7.10	(< 20)
Vinyl acetate	30	29.3	98	30	30.4	101	(54-146)	3.90	(< 20)
Vinyl chloride	30	27.7	92	30	29.6	99	(58-137)	6.60	(< 20)
Xylenes (total)	90	87.5	97	90	87.2	97	(79-121)	0.38	(< 20)

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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1164639 [VXX29363] Blank Spike Lab ID: 1345590 Date Analyzed: 08/12/2016 13:20 Spike Duplicate ID: LCSD for HBN 1164639 [VXX29363] Spike Duplicate Lab ID: 1345591 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639003

#### Results by SW8260B Blank Spike (%) Spike Duplicate (%) Parameter <u>Spike</u> Rec (%) <u>Spike</u> Rec (%) CL <u>RPD (%)</u> RPD CL Result Result Surrogates 94.4 30 1,2-Dichloroethane-D4 (surr) 30 94 98.7 99 (81-118) 4.50 4-Bromofluorobenzene (surr) 30 98.8 99 30 98.2 98 (85-114) 0.58 Toluene-d8 (surr) 30 102 30 96.6 102 97 (89-112) 5.10

## **Batch Information**

Analytical Batch: VMS16072 Analytical Method: SW8260B Instrument: VPA 780/5975 GC/MS Analyst: TJT Prep Batch: VXX29363 Prep Method: SW5030B Prep Date/Time: 08/12/2016 06:00 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 09/02/2016 5:23:51PM

# Method Blank

Blank ID: MB for HBN 17417[ V X 229 V364] Blank Lab ID: 1345661

8 Q for CaS mpe: 116463VssV0116463Vs1[

# ) peulte bRSW8260B

OaraS ptpr	) peulte	LU8 9QL	DL	<u>y nite</u>
1이이	sĘ5sy	sEss	s⊟5s	uh9_
1여이면 ricTloroptTanp	sЊssy	1Ess	s⊞1s	uh9_
10100 P ptracTloroptTanp	sĘ5sy	sEss	s⊟5s	uh9_
1010 ₽ ricTloroptTanp	sЊssy	1Ess	s⊞1s	uh9_
101 PDicTloroptTanp	sЊssy	1Ess	s⊞1s	uh9_
101PDicTloroptTpnp	sЊssy	1Ess	sB1s	uh9_
101 PDicTloromrompnp	sЊssy	1Ess	s⊞1s	uh9_
10 OBP ricTlorobpngpnp	sЊssy	1Ess	s⊞1s	uh9_
10 OBP ricTloromomanp	s⊞ssy	1Ess	sB1s	uh9_
10 04P ricTlorobpngpnp	s⊞ssy	1Ess	sB1s	uh9_
10[ 04P riS ptTRbpngpnp	s⊞ssy	1Ess	sB1s	uh9_
10 PDibroS oP3PcTloromromanp	5Essy	1sEs	3⊟s	uh9_
10 PDibroS optTanp	s⊞ssy	1Ess	sB1s	uh <b>9</b> _
10 PDicTlorobpngpnp	s⊞ssy	1Ess	sB1s	uh9L
10 PDicTloroptTanp	sĘ5sy	sБss	s₿5s	uh <b>9</b> _
10 PDicTloromomanp	s⊞ssy	1Ess	sB1s	uh9L
10305P riS ptTRbpngpnp	s⊞ssy	1Ess	sB1s	uh9L
103PDicTlorobpngpnp	s⊞ssy	1Ess	sB1s	uh9_
103PDicTloromomanp	sĘ5sy	sEss	s⊟5s	uh9_
104PDicTlorobpngpnp	s∉5sy	sEss	s⊟5s	uh <b>9</b> _
[ 0] PDicTloromomanp	s⊞ssy	1Ess	sB1s	uh9_
[PButanonp (M, zd	5Essy	1sEs	3⊟s	uh9_
[ FQTlorotolupnp	s⊞ssy	1Ess	sB1s	uh9_
[ PHpxanonp	5Essy	1sEs	3⊟s	uh9_
4FQTlorotolupnp	s⊞ssy	1Ess	sB1s	uh9_
4ReomonRtolupnp	s⊞ssy	1Ess	sB1s	uh9_
4PMptTRIP Pmpntanonp (MIBz d	5Essy	1sEs	3⊟s	uh9_
Bpngpnp	sĘssy	s母ss	s⊟[s	uh9_
BroS obpngpnp	sЊssy	1Ess	sB1s	uh9_
BroS ocTloroS ptTanp	sЊssy	1Ess	sB1s	uh9_
BroS oGcTloroS ptTanp	sĘ5sy	sEss	s⊟5s	uh9_
BroSoforS	s⊞ssy	1Ess	sB1s	uh9_
BroS oS ptTanp	5Essy	1sEs	3 <b>⊟</b> s	uh9_
Qarbon GeulfiQp	5Essy	1sEs	3 <b>⊟</b> s	uh9_
Qarbon tptracTlori	s⊞ssy	1Ess	sB1s	uh9_
QTlorobpngpnp	sĘ5sy	sEss	s⊟5s	uh9L
QTloroptTanp	s⊞ssy	1Ess	sB1s	uh9_
QTIoroforS	sБssy	1Ess	sBss	uh <b>9</b> _

Orint Datp: sV9s[9[s16 5:[3:53OM

C. C NortT KS prica IncE

Matrix: Watpr (Curfacp0, fft). rounGd



Matrix: Watpr (Curfacp0, fftD. rounGd

# Method Blank

SG

Blank ID: MB for HBN 17417[ V X 229 V364] Blank Lab ID: 1345661

8 Q for CaS mpe: 116463VssV0116463Vs1[

## ) peulte bRSW8260B

OaraS ntor	) peulte		וס	v nite
OTIoroS ptTanp	<u>y pearce</u> stassy	<u>1Fes</u>	sB1s	uh <b>q</b>
	sБeev	1560	sB1s	uhg
ciePl@PDicTloromomp	s E 5ev	155 6566	s 🛙 5e	uh0
	SЦ 53У sE 5sv	3D33	S∐55 s∐5s	uh0
	sų osy stasy	31233 1150	31103 c121c	uhg
	stassy	11255	SID IS	uh0
tTBhongoon	stassy	11255	SID IS	uh0
	5DSSy	165	200	uha
	55Sy	1515	J∐ 5	ulia
	sessy	155	SED IS	unar
	SESSY	TESS	SEIS	ung
	[ EDS y	DESS 105	IBSS	ung
	SESSY	ISES	38S	ung
	5BSSY	1SES	38S	un9L
	sessy	1ESS	SB1S	ung
	sessy	1Ess	SB1S	ung
OH2 Hpnp	sessy	1LSS	SB1S	un9_
O & M P2 Rpnp	1Essy	[Ess	sH6[s	uh9_
epcHButRbpngpnp	sEssy	1Lss	sB1s	uh9_
CtRrpnp	s⊞ssy	1Ess	sB1s	uh9_
tprtÆutRbpngpnp	s⊞ssy	1Ess	sB1s	uh9_
<ul> <li>ptracTloroptTpnp</li> </ul>	sEssy	1Ess	sB1s	uh9L
- olupnp	s⊞ssy	1Ess	sB1s	uh9_
tranePI (I PDicTloroptTpnp	s⊞ssy	1Ess	sB1s	uh9_
tranePI@PDicTloromrompnp	s⊞ssy	1Ess	sB1s	uh9_
<ul> <li>ricTloroptTpnp</li> </ul>	s⊞ssy	1Ess	sB1s	uh9L
<ul> <li>ricTlorofluoroS ptTanp</li> </ul>	s⊞ssy	1Ess	sB1s	uh9L
/ inR acptatp	5Essy	1sEs	3⊟s	uh9_
/ inR cTloriQp	sEssy	1Ess	sB1s	uh9_
2 Rpnpe (totald	1Њsy	3Ess	1Ess	uh9_
Surrogates				
10 PDicTloroptTanpPD4 (eurrd	1s1	v1PI1v		%
4PBroS ofluorobpngpnp (eurrd	1s3	v5PI14		%
- olupnpPGv (eurrd	W <b>₽</b>	vVPI1[		%

Orint Datp: sV9s[9[s16 5:[3:53OM

C. C NortT KS prica IncE

Method Blank				
Blank ID: MB for HBN 1 Blank Lab ID: 1345661	7417[ V X 229[ V364]	Matri	x: Watpr (Cu	ırfacp0, ffÐ. roun@
8 Q for CaS mpe: 116463VssV0116463Vs1				
) peulte bR <b>SW8260B</b>				
OaraS ptpr	) peulte	<u>LU8 9QL</u>	DL	<u>y nite</u>
atch Information				
Knal Prical PataT: / MC	16s73	OrpmB;	atcT: / 22[V3	364
KnalRtical MptToG CV	/v[ 6sB	OrpmM	ptToG CW5s	3sB
KnalRtical Batel: / MC KnalRtical MptToG CV InetruSpnt: / CK Khilp	/v[6sB nt.Q9MC7vVsB95V77K	OrpmM OrpmDa OrpmIni	ptToG CW5s atp9 iSp: v91  itial WtF9 olF	3sB [9[s16 6:ss:ssKM 5.Sl

Orint Datp: sV9s[9[s16 5:[3:53OM

C. C NortT KS prica IncE

SGS



## **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1164639 [VXX29364] Blank Spike Lab ID: 1345662 Da@ t nalAyez: d8/12/2d16 13:d6 Spike Duplica@ ID: LCSD for HBN 1164639 [VXX29364] Spike Duplica@ Lab ID: 1345663 Ma@ix: Wa@er (Surface, Eff., Grounz)

QC for Samples: 1164639dd9, 1164639d12

## Resul0s bASW8260B

	Blank Spike (ug/L)				Spike Duplica0e (ug/L)				
Parame@er	<u>Spike</u>	Resul0	Rec (%)	<u>Spike</u>	Resul0	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
1,1,1,2-Te0achloroe0hane	3d	29.3	98	3d	29.6	99	(78-124)	1.dd	(< 2d )
1,1,1-Trichloroe0hane	3d	32.d	1d7	3d	31.7	1d6	(74-131)	1.dd	(< 2d )
1,1,2,2-Te0achloroe0hane	3d	31.8	1d6	3d	3d.6	1d2	(71-121)	3.7d	(< 2d )
1,1,2-Trichloroe0hane	3d	31.5	1d5	3d	31.1	1d4	(8d-119)	1.1d	(< 2d )
1,1-Dichloroe0hane	3d	31.3	1d4	3d	31.2	1d4	(77-125)	d.26	(< 2d )
1,1-Dichloroe0hene	3d	31.1	1d4	3d	3d.7	1d2	(71-131)	1.1d	(< 2d )
1,1-Dichloropropene	3d	31.7	1d6	3d	31.2	1d4	(79-125)	1.5d	(< 2d )
1,2,3-Trichlorobenyene	3d	31.8	1d6	3d	31.5	1d5	(69-129)	1.dd	(< 2d )
1,2,3-Trichloropropane	3d	31.6	1d5	3d	3d.2	1d1	(73-122)	4.7d	(< 2d )
1,2,4-Trichlorobenyene	3d	31.9	1d6	3d	32.1	1d7	(69-13d)	d.56	(< 2d )
1,2,4-Trime0nAbenyene	3d	32.2	1d7	3d	32.3	1d8	(79-124)	d.43	(< 2d )
1,2-Dibromo-3-chloropropane	3d	31.1	1d4	3d	28.d	93	(62-128)	1d.5d	(< 2d )
1,2-Dibromoe0hane	3d	31.9	1d6	3d	31.4	1d5	(77-121)	1.7d	(< 2d )
1,2-Dichlorobenyene	3d	3d.5	1d2	3d	31.d	1d3	(8d-119)	1.4d	(< 2d )
1,2-Dichloroe0hane	3d	29.4	98	3d	29.4	98	(73-128)	d.14	(< 2d )
1,2-Dichloropropane	3d	31.5	1d5	3d	31.7	1d6	(78-122)	d.63	(< 2d )
1,3,5-Trime0nAlbenyene	3d	32.1	1d7	3d	32.2	1d7	(75-124)	d.d6	(< 2d )
1,3-Dichlorobenyene	3d	3d.6	1d2	3d	3d.7	1d2	(8d-119)	d.39	(< 2d )
1,3-Dichloropropane	3d	31.7	1d6	3d	31.8	1d6	(8d-119)	d.1d	(< 2d )
1,4-Dichlorobenyene	3d	31.d	1d3	3d	31.4	1d5	(79-118)	1.3d	(< 2d )
2,2-Dichloropropane	3d	32.1	1d7	3d	31.6	1d5	(6d-139)	1.4d	(< 2d )
2-Bu@anone (MEK)	9d	92.4	1d3	9d	81.1	9d	(56-143)	13.dd	(< 2d )
2-Chloro@luene	3d	31.4	1d5	3d	31.7	1d6	(79-122)	1.1d	(< 2d )
2-Hexanone	9d	93.8	1d4	9d	83.5	93	(57-139)	11.6d	(< 2d )
4-Chloro@luene	3d	31.3	1d4	3d	31.8	1d6	(78-122)	1.5d	(< 2d )
4-IsopropAloluene	3d	31.9	1d6	3d	32.d	1d7	(77-127)	d.28	(< 2d )
4-Me0nAl-2-pen0anone (MIBK)	9d	92.5	1d3	9d	84.5	94	(67-13d)	9.1d	(< 2d )
Benyene	3d	31.2	1d4	3d	31.5	1d5	(79-12d)	d.73	(< 2d )
Bromobenyene	3d	3d.6	1d2	3d	31.d	1d3	(8d-12d)	1.5d	(< 2d )
Bromochlorome@hane	3d	3d.7	1d2	3d	31.d	1d3	(78-123)	1.dd	(< 2d )
Bromozichlorome@hane	3d	31.8	1d6	3d	32.d	1d7	(79-125)	d.56	(< 2d )
Bromoform	3d	3d.d	1dd	3d	29.2	97	(66-13d)	2.8d	(< 2d )
Bromome@hane	3d	24.5	82	3d	28.5	95	(53-141)	15.2d	(< 2d )
Carbon zisulfize	45	46.3	1d3	45	46.2	1d3	(64-133)	d.22	(< 2d )

Prin0Da@: d9/d2/2d16 5:23:54PM

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2dd Wes0Po@er Drive t nchorage, t K 95518 t 9d7.562.2343 f 9d7.561.53d1 www.us.sgs.com


#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1164639 [VXX29364] Blank Spike Lab ID: 1345662 Date t nalAyez: d8/12/2d16 13:d6 Spike Duplica@ ID: LCSD for HBN 1164639 [VXX29364] Spike Duplica@ Lab ID: 1345663 Ma@ix: Wa@er (Surface, Eff., Grounz)

QC for Samples: 1164639dd9, 1164639d12

#### Resul0s bA SW8260B

		Blank Spike	(ug/L)		Spike Duplic	a0e (ug/L)			
Parame@er	Spike	Resul0	Rec (%)	<u>Spike</u>	Resul0	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Carbon @0rachlorize	3d	32.7	1d9	3d	32.5	1d8	(72-136)	d.67	(< 2d )
Chlorobenyene	3d	3d.9	1d3	3d	3d.9	1d3	(82-118)	d.d3	(< 2d )
Chloroe0hane	3d	27.9	93	3d	27.7	92	(6d-138)	d.65	(< 2d )
Chloroform	3d	29.2	97	3d	29.4	98	(79-124)	d.65	(< 2d )
Chlorome@nane	3d	27.2	91	3d	26.4	88	(5d-139)	2.9d	(< 2d )
cis-1,2-Dichloroe0hene	3d	3d.7	1d2	3d	3d.8	1d3	(78-123)	d.29	(< 2d )
cis-1,3-Dichloropropene	3d	29.6	99	3d	29.9	1dd	(75-124)	d.84	(< 2d )
Dibromochlorome@hane	3d	29.7	99	3d	29.6	99	(74-126)	d.37	(< 2d )
Dibromome@hane	3d	3d.3	1d1	3d	3d.2	1d1	(79-123)	d.26	(< 2d )
Dichlorozifluorome@hane	3d	27.2	91	3d	27.5	92	(32-152)	1.1d	(< 2d )
E0nAbenyene	3d	31.9	1d6	3d	31.5	1d5	(79-121)	1.3d	(< 2d )
Freon-113	45	46.3	1d3	45	46.3	1d3	(7d-136)	d.d2	(< 2d )
Hexachlorobu@aziene	3d	31.3	1d4	3d	31.6	1d5	(66-134)	d.83	(< 2d )
IsopropAbenyene (Cumene)	3d	32.3	1d8	3d	31.7	1d6	(72-131)	1.8d	(< 2d )
MethAene chlorize	3d	28.9	96	3d	29.2	97	(74-124)	1.dd	(< 2d )
MethA-ObutA ether	45	49.2	1d9	45	48.2	1d7	(71-124)	2.1d	(< 2d )
Naph0halene	3d	3d.3	1d1	3d	28.8	96	(61-128)	5.1d	(< 2d )
n-Bu@Abenyene	3d	29.1	97	3d	28.8	96	(75-128)	1.1d	(< 2d )
n-PropAbenyene	3d	31.7	1d6	3d	31.5	1d5	(76-126)	d.63	(< 2d )
o-XAlene	3d	31.7	1d6	3d	31.4	1d5	(78-122)	d.7d	(< 2d )
P & M -XAene	6d	63.1	1d5	6d	62.9	1d5	(8d-121)	d.32	(< 2d )
sec-BuMbenyene	3d	32.d	1d7	3d	32.2	1d7	(77-126)	d.65	(< 2d )
SOArene	3d	29.d	97	3d	29.1	97	(78-123)	d.21	(< 2d )
0er0Bu04benyene	3d	31.7	1d6	3d	32.1	1d7	(78-124)	1.3d	(< 2d )
TeOrachloroeOhene	3d	3d.6	1d2	3d	3d.3	1d1	(74-129)	d.92	(< 2d )
Toluene	3d	29.8	99	3d	29.7	99	(8d-121)	d.5d	(< 2d )
Orans-1,2-DichloroeOhene	3d	3d.2	1d1	3d	3d.3	1d1	(75-124)	d.1d	(< 2d )
0rans-1,3-Dichloropropene	3d	29.5	98	3d	29.7	99	(73-127)	d.68	(< 2d )
Trichloroe0hene	3d	31.2	1d4	3d	31.d	1d3	(79-123)	d.68	(< 2d )
Trichlorofluorome@hane	3d	28.5	95	3d	28.3	95	(65-141)	d.46	(< 2d )
VinAl ace0a0e	3d	31.d	1d3	3d	29.8	99	(54-146)	4.2d	(< 2d )
VinAl chlorize	3d	28.4	95	3d	28.6	95	(58-137)	d.67	(< 2d )
XAlenes (0o0al)	9d	94.7	1d5	9d	94.3	1d5	(79-121)	d.44	(< 2d )

Prin0Dale: d9/d2/2d16 5:23:54PM

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2dd Wes0Po@er Drive t nchorage, t K 95518 t 9d7.562.2343 f 9d7.561.53d1 www.us.sgs.com



Blank Spike ID: LCS for HBN 1164639 [VXX29364] Blank Spike Lab ID: 1345662 Da@ t nalAyez: d8/12/2d16 13:d6 Spike Duplica@ ID: LCSD for HBN 1164639 [VXX29364] Spike Duplica@ Lab ID: 1345663 Ma@ix: Wa@er (Surface, Eff., Grounz)

QC for Samples: 1164639dd9, 1164639d12

### Resulus bA SW8260B

		Blank Spik	ke (%)		Spike Dup	lica0e (%)			
Parame@er	<u>Spike</u>	Resul0	<u>Rec (%)</u>	<u>Spike</u>	Resul0	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Surrogates									
1,2-Dichloroe0hane-D4 (surr)	3d	99.7	1dd	3d	99	99	(81-118)	d.67	
4-Bromofluorobenyene (surr)	3d	98.8	99	3d	99.8	1dd	(85-114)	1.dd	
Toluene-z8 (surr)	3d	98.5	99	3d	98.6	99	(89-112)	d.d7	

#### **Batch Information**

t nalA0cal Ba0ch: VMS16073 t nalA0cal Me0hoz: SW8260B Ins0rumen0 VSA Agilent GC/MS 7890B/5977A t nalAs0 TJT Prep Ba0ch: VXX29364 Prep Me0hoz: SW5030B Prep Da0e/Time: 08/12/2016 06:00 Spike Ini0W0/Vol.: 3d ug/L Ex0ac0Vol: 5 mL Dupe Ini0W0/Vol.: 3d ug/L Ex0ac0Vol: 5 mL

Prin0Da0e: d9/d2/2d16 5:23:54PM

SGS Nor0h t merica Inc.

2dd Wes0Po@er Drive t nchorage, t K 95518 t 9d7.562.2343 f 9d7.561.53d1 www.us.sgs.com

# Method Blank

SG

Blank ID: MB for HBN 1741[ W X 229/[ 3[ 6] Blank Lab ID: 1345587 MairW( aier uScrfa, e0Eff.0Grocnd)

QC for Samples: 115453[ 6610115453[ 66V0115453[ 66t

### Resclis by SW8260B

Parameier	Resclis	LOQ9CL	DL	<u>Unxis</u>
101010/-Teira, hloroeihane	6.V86U	6.866	6.186	cg9L
10101-Trx hloroeihane	6.866U	1.66	6.316	cg9L
1010/0/-Teira, hloroeihane	6.V86U	6.866	6.186	cg9L
1010/-Trx hloroeihane	6.866U	1.66	6.316	cg9L
101-Dx hloroeihane	6.866U	1.66	6.316	cg9L
101-Dx hloroeihene	6.866U	1.66	6.316	cg9L
101-Dx hloropropene	6.866U	1.66	6.316	cg9L
10/08-Trx hlorobenzene	6.866U	1.66	6.316	cg9L
10/08-Trx hloropropane	6.866U	1.66	6.316	cg9L
10/04-Trx hlorobenzene	6.866U	1.66	6.316	cg9L
10/04-Trxmeihylbenzene	6.866U	1.66	6.316	cg9L
10/-Dxbromo-3-, hloropropane	8.66U	16.6	3.16	cg9L
10/-Dxbromoeihane	6.866U	1.66	6.316	cg9_
10/-Dx hlorobenzene	6.866U	1.66	6.316	cg9L
10/-Dx hloroeihane	6.V86U	6.866	6.186	cg9L
10/-Dx hloropropane	6.866U	1.66	6.316	cg9L
10308-Trxmeihylbenzene	6.866U	1.66	6.316	cg9L
103-Dx hlorobenzene	6.866U	1.66	6.316	cg9L
103-Dx hloropropane	6.V86U	6.866	6.186	cg9L
104-Dx hlorobenzene	6.V86U	6.866	6.186	cg9L
V0V-Dx hloropropane	6.866U	1.66	6.316	cg9_
V-Bcianone uMEK)	8.66U	16.6	3.16	cg9L
V-Chloroiolcene	6.866U	1.66	6.316	cg9L
V-HeVanone	8.66U	16.6	3.16	cg9L
4-Chloroiolcene	6.866U	1.66	6.316	cg9L
4-Isopropyliolcene	6.866U	1.66	6.316	cg9L
4-Meihyl-V-penianone uMIBK)	8.66U	16.6	3.16	cg9L
Benzene	6.V66U	6.466	6.1V6	cg9L
Bromobenzene	6.866U	1.66	6.316	cg9L
Bromo, hloromeihane	6.866U	1.66	6.316	cg9L
Bromody, hloromeihane	6.V86U	6.866	6.186	cg9L
Bromoform	6.866U	1.66	6.316	cg9L
Bromomeihane	8.66U	16.6	3.16	cg9L
Carbon dxsclfxde	8.66U	16.6	3.16	cg9L
Carbon ieira, hlorxde	6.866U	1.66	6.316	cg9L
Chlorobenzene	6.V86U	6.866	6.186	cg9_
Chloroeihane	6.866U	1.66	6.316	cg9L
Chloroform	6.866U	1.66	6.366	cg9_

Prxni Daie: 6[96V9V615 8:V3:85PM

SGS Norih Amerx a In, .

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# Method Blank

SG

Blank ID: MB for HBN 1741[ W X 229/[ 3[ 6] Blank Lab ID: 1345587 MairW/( aier uScrfa, e0Eff.0Grocnd)

QC for Samples: 115453[ 6610115453[ 66V0115453[ 66t

### Resclis by SW8260B

Parameier	Resclis	LOQ9CL	<u>DL</u>	<u>Unxis</u>
Chloromeihane	6.866U	1.66	6.316	cg <b>9</b> _
, xs-10/-Dx, hloroeihene	6.866U	1.66	6.316	cg <b>9</b> _
, xs-103-Dx, hloropropene	6.V86U	6.866	6.186	cg9_
Dxbromo, hloromeihane	6.V86U	6.866	6.186	cg9_
Dxbromomeihane	6.866U	1.66	6.316	cg9_
Dx hlorodx lcoromeihane	6.866U	1.66	6.316	cg9_
Eihylbenzene	6.866U	1.66	6.316	cg9_
Freon-113	8.66U	16.6	3.16	cg9_
HeVa, hlorobciadæne	6.866U	1.66	6.316	cg9_
Isopropylbenzene (Ccmene)	6.866U	1.66	6.316	cg9_
Meihylene , hlorxde	V.86U	8.66	1.66	cg9_
Meihyl-i-bciyl eiher	8.66U	16.6	3.16	cg9_
Naphihalene	8.66U	16.6	3.16	cg9_
n-Bciylbenzene	6.866U	1.66	6.316	cg9_
n-Propylbenzene	6.866U	1.66	6.316	cg9_
o-2 ylene	6.866U	1.66	6.316	cg9_
P & M -2ylene	1.66U	V.66	6.5V6	cg9_
se, -Bciylbenzene	6.866U	1.66	6.316	cg9_
Siyrene	6.866U	1.66	6.316	cg9_
ieri-Bciylbenzene	6.866U	1.66	6.316	cg9_
Teira, hloroeihene	6.866U	1.66	6.316	cg9_
Tolcene	6.866U	1.66	6.316	cg9_
irans-10/-Dx hloroeihene	6.866U	1.66	6.316	cg9_
irans-103-Dx hloropropene	6.866U	1.66	6.316	cg9_
Trx hloroeihene	6.866U	1.66	6.316	cg9_
Trx hloroflcoromeihane	6.866U	1.66	6.316	cg9_
/ xnyla, eiaie	8.66U	16.6	3.16	cg9_
/ xnyl , hlorxde	6.866U	1.66	6.316	cg9_
2ylenes uoial)	1.86U	3.66	1.66	cg9_
Surrogates				
10/-Dx hloroeihane-D4 uscrr)	[ 5.5	t 1-11t		%
4-Bromoflcorobenzene uscrr)	[[.4	t 8-114		%
Tolcene-dt uscrr)	16V	t [ -11V		%

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1741[ \V X 229/[ 3[ 6] 7	Mairx	₩(aieruSc	rfa, e0Eff.0Grocnd)
6V0115453[ 66t			
Resclis	LOQ9CL	DL	<u>Unxis</u>
IS156t 7	Prep Ba	ai, h: / 22V[ 3	[6
	1741[ VV X 229/[ 3[ 6] 7 6V0115453[ 66t <u>Resclis</u>	1741[ W X 229/[ 3[ 6] Main 7 6V0115453[ 66t <u>Resclis LOQ9CL</u>	1741[ W X 229/[ 3[ 6] 7 6V0115453[ 66t <u>Resclis LOQ9CL DL</u>

Prxni Daie: 6[96V9V615 8:V3:85PM

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#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1164639 [VXX29390] Blank Spike Lab ID: 1346658 Date Analyzed: 08/17/2016 16:26 Spike Duplicate ID: LCSD for HBN 1164639 [VXX29390] Spike Duplicate Lab ID: 1346659 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639001, 1164639002, 1164639008

#### Results by SW8260B

		Blank Spike	e (ug/L)	:	Spike Duplic	cate (ug/L)			
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
1,1,1,2-Tetrachloroethane	30	32.7	109	30	36.5	122	(78-124)	10.90	(< 20)
1,1,1-Trichloroethane	30	33.9	113	30	32.5	108	(74-131)	4.10	(< 20)
1,1,2,2-Tetrachloroethane	30	31.3	104	30	32.1	107	(71-121)	2.60	(< 20)
1,1,2-Trichloroethane	30	30.7	102	30	33.5	112	(80-119)	8.80	(< 20)
1,1-Dichloroethane	30	31.4	105	30	30.1	100	(77-125)	4.40	(< 20)
1,1-Dichloroethene	30	31.7	106	30	30.5	102	(71-131)	3.60	(< 20)
1,1-Dichloropropene	30	31.3	104	30	31.0	103	(79-125)	0.80	(< 20)
1,2,3-Trichlorobenzene	30	34.0	113	30	35.9	120	(69-129)	5.40	(< 20)
1,2,3-Trichloropropane	30	31.6	105	30	32.4	108	(73-122)	2.60	(< 20)
1,2,4-Trichlorobenzene	30	33.9	113	30	35.6	119	(69-130)	4.70	(< 20)
1,2,4-Trimethylbenzene	30	34.1	114	30	35.5	118	(79-124)	4.00	(< 20)
1,2-Dibromo-3-chloropropane	30	34.4	115	30	36.1	120	(62-128)	5.00	(< 20)
1,2-Dibromoethane	30	33.0	110	30	36.5	122	* (77-121)	9.90	(< 20)
1,2-Dichlorobenzene	30	31.7	106	30	32.5	108	(80-119)	2.60	(< 20)
1,2-Dichloroethane	30	29.5	98	30	28.1	94	(73-128)	4.90	(< 20)
1,2-Dichloropropane	30	33.7	112	30	32.9	110	(78-122)	2.60	(< 20)
1,3,5-Trimethylbenzene	30	34.2	114	30	35.1	117	(75-124)	2.60	(< 20)
1,3-Dichlorobenzene	30	31.7	106	30	33.1	110	(80-119)	4.30	(< 20)
1,3-Dichloropropane	30	30.9	103	30	33.3	111	(80-119)	7.60	(< 20)
1,4-Dichlorobenzene	30	32.3	108	30	33.7	112	(79-118)	4.50	(< 20)
2,2-Dichloropropane	30	31.5	105	30	30.1	100	(60-139)	4.60	(< 20)
2-Butanone (MEK)	90	94.1	105	90	91.0	101	(56-143)	3.30	(< 20)
2-Chlorotoluene	30	32.8	109	30	33.7	112	(79-122)	2.70	(< 20)
2-Hexanone	90	95.9	107	90	95.5	106	(57-139)	0.41	(< 20)
4-Chlorotoluene	30	33.6	112	30	34.2	114	(78-122)	1.70	(< 20)
4-Isopropyltoluene	30	31.5	105	30	32.8	109	(77-127)	3.80	(< 20)
4-Methyl-2-pentanone (MIBK)	90	95.0	106	90	89.9	100	(67-130)	5.50	(< 20)
Benzene	30	33.4	111	30	33.3	111	(79-120)	0.21	(< 20)
Bromobenzene	30	32.3	108	30	32.5	108	(80-120)	0.71	(< 20)
Bromochloromethane	30	31.2	104	30	30.1	100	(78-123)	3.80	(< 20)
Bromodichloromethane	30	33.6	112	30	32.1	107	(79-125)	4.50	(< 20)
Bromoform	30	32.1	107	30	35.0	117	(66-130)	8.60	(< 20)
Bromomethane	30	33.1	110	30	34.1	114	(53-141)	2.90	(< 20)
Carbon disulfide	45	47.7	106	45	46.1	102	(64-133)	3.60	(< 20 )

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#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1164639 [VXX29390] Blank Spike Lab ID: 1346658 Date Analyzed: 08/17/2016 16:26 Spike Duplicate ID: LCSD for HBN 1164639 [VXX29390] Spike Duplicate Lab ID: 1346659 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639001, 1164639002, 1164639008

#### Results by SW8260B

		Blank Spike	e (ug/L)	:	Spike Duplic	ate (ug/L)			
Parameter	<u>Spike</u>	<u>Result</u>	<u>Rec (%)</u>	<u>Spike</u>	Result	Rec (%)	CL	<u>RPD (%)</u>	RPD CL
Carbon tetrachloride	30	30.9	103	30	29.6	99	(72-136)	4.30	(< 20)
Chlorobenzene	30	31.9	106	30	32.8	109	(82-118)	3.00	(< 20)
Chloroethane	30	29.5	98	30	27.5	92	(60-138)	7.20	(< 20)
Chloroform	30	29.1	97	30	27.7	92	(79-124)	4.70	(< 20)
Chloromethane	30	30.9	103	30	34.0	113	(50-139)	9.40	(< 20)
cis-1,2-Dichloroethene	30	31.9	106	30	30.3	101	(78-123)	5.00	(< 20)
cis-1,3-Dichloropropene	30	31.6	105	30	31.3	104	(75-124)	0.98	(< 20)
Dibromochloromethane	30	31.7	106	30	33.8	113	(74-126)	6.30	(< 20)
Dibromomethane	30	31.2	104	30	29.7	99	(79-123)	4.90	(< 20)
Dichlorodifluoromethane	30	30.1	100	30	29.3	98	(32-152)	2.60	(< 20)
Ethylbenzene	30	33.6	112	30	33.8	113	(79-121)	0.62	(< 20)
Freon-113	45	49.4	110	45	47.9	107	(70-136)	3.10	(< 20)
Hexachlorobutadiene	30	34.6	115	30	37.7	126	(66-134)	8.70	(< 20)
Isopropylbenzene (Cumene)	30	31.3	104	30	32.0	107	(72-131)	2.20	(< 20)
Methylene chloride	30	30.2	101	30	28.5	95	(74-124)	5.90	(< 20)
Methyl-t-butyl ether	45	46.9	104	45	46.0	102	(71-124)	2.00	(< 20)
Naphthalene	30	31.9	106	30	34.0	113	(61-128)	6.50	(< 20)
n-Butylbenzene	30	32.2	107	30	33.7	112	(75-128)	4.50	(< 20)
n-Propylbenzene	30	33.6	112	30	34.1	114	(76-126)	1.30	(< 20)
o-Xylene	30	33.7	112	30	34.8	116	(78-122)	3.20	(< 20)
P & M -Xylene	60	68.2	114	60	69.1	115	(80-121)	1.30	(< 20)
sec-Butylbenzene	30	35.0	117	30	36.4	121	(77-126)	3.90	(< 20)
Styrene	30	31.0	103	30	31.7	106	(78-123)	2.10	(< 20)
tert-Butylbenzene	30	34.8	116	30	35.6	119	(78-124)	2.30	(< 20)
Tetrachloroethene	30	32.2	107	30	35.3	118	(74-129)	9.10	(< 20)
Toluene	30	30.4	101	30	32.2	107	(80-121)	5.80	(< 20)
trans-1,2-Dichloroethene	30	31.8	106	30	30.5	102	(75-124)	4.30	(< 20)
trans-1,3-Dichloropropene	30	32.0	107	30	33.8	113	(73-127)	5.70	(< 20)
Trichloroethene	30	33.8	113	30	33.6	112	(79-123)	0.71	(< 20)
Trichlorofluoromethane	30	31.5	105	30	30.5	102	(65-141)	3.10	(< 20)
Vinyl acetate	30	32.4	108	30	31.7	106	(54-146)	2.10	(< 20)
Vinyl chloride	30	33.0	110	30	32.6	109	(58-137)	1.20	(< 20)
Xylenes (total)	90	102	113	90	104	115	(79-121)	2.00	(< 20)

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Blank Spike ID: LCS for HBN 1164639 [VXX29390] Blank Spike Lab ID: 1346658 Date Analyzed: 08/17/2016 16:26 Spike Duplicate ID: LCSD for HBN 1164639 [VXX29390] Spike Duplicate Lab ID: 1346659 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639001, 1164639002, 1164639008

#### Results by SW8260B

		Blank Spil	ke (%)		Spike Dup	licate (%)			
Parameter	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	96.7	97	30	90.3	90	(81-118)	6.80	
4-Bromofluorobenzene (surr)	30	100	100	30	97.9	98	(85-114)	2.10	
Toluene-d8 (surr)	30	96.4	96	30	100	100	(89-112)	4.10	

#### **Batch Information**

Analytical Batch: VMS16087 Analytical Method: SW8260B Instrument: VPA 780/5975 GC/MS Analyst: TJT Prep Batch: VXX29390 Prep Method: SW5030B Prep Date/Time: 08/17/2016 06:00 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

Print Date: 09/02/2016 5:23:58PM

Blank ID: MB for HBN 17452 Blank I ab ID: 1647635	97 [VXX/53429]	Matrix: Water (Surface, Eff., Ground)							
QC for Samples: 104063224, 1104063216									
Results by AK101									
Parameter	Results	LOQ/CL 2 122	<u>DL</u>	<u>Units</u>					
	2.2-220	2.122	2.2012	IIIg/L					
zBromofluoroben%ene (surr)	36.6	- 2 <i>z</i> 1- 2		8					
atch Information									
Analytical Batch: VFC16543 Analytical Method: AK121 Instrument: Agilent 7932 PII Analyst: ST Analytical Date/Time: 9/54/5	3 D/FID 5210 15:19:22AM	Prep Ba Prep Me Prep Da Prep Init Prep Ext	tch: VXX53429 thod: SW-262B te/Time: 9/56/52 ial Wt./Vol.: - ml tract Vol: - mL	10 0:22:22AM L					

Print Date: 23/25/5210 -: 56:- 3PM

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Blank Spike ID: LCS for HBN 1164639 [VXX2945] b Blank Spike La7 ID: 134t 39A Daye z nald0e8: 5] /23/2516 23:45 Spike Duplicaye ID: LCSD for HBN 1164639 [VXX2945] b Spike Duplicaye La7 ID: 134t 396 Mayrix: Wayer (Surface, Eff., Groun8)

QC for Samples: 1164639554, 1164639513

Resulys 7d AK101			_						
	I	Blank Spike	e (mg/L)	S	pike Duplic	aye (mg/L)			
Parameyer	<u>Spike</u>	Resuly	<u>Rec (%)</u>	Spike	Resuly	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Gasoline Range Organics	1.55	5.] 6]	] t	1.55	5.926	93	(65-125)	6.A5	(< 25 )
Surrogates									
4-Bromofluoro7en0ene (surr)	5.5A55	99.1	99	5.5A55	152	152	(A5-1A5)	2.65	
Batch Information									
z naldyical Baych: VFC13278 z naldyical Meyho8: AK101				Prep Prep	Baych: V4 Meyho8: 3	442870P S5 W030B			
Insyumeny. Agilent 9P80 DI/ 1	FI/			Prep	Daye/Time	e: 0PE3E01	6 06:00	/ali Amal	
z naidsy. SX				Spik Dup	e IniyWy/V e IniyWy/V	ol.: 1.55 mg	J/L Exyracy	ol: AmL	

PrinyDaye: 59/52/2516 A:24:51PM

SGS			Sai USAL	mpling and Testing Report - Event 2 -FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Method Blank				
Blank ID: MB for HBN Blank Lab ID: 134440	1741466 [WAT/10711] 0	Matri	x: Water (Surfa	ce, Eff., Ground)
QC for Samples: 1164639001, 11646390	02, 1164639008, 1164639009			
Results by SM21 213	DB .			
<u>Parameter</u> Turbidity	<u>Results</u> 0.100J	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU
Analytical Method: S Instrument: Turbidin Analyst: NEG Analytical Date/Time	SM21 2130B heter : 8/11/2016 3:50:00PM			

Print Date: 09/02/2016 5:24:03PM

# **Duplicate Sample Summary** Original Sample ID: 1164639001 8nalAyiy Date: 0s/11/5016 12:20 Duplicate Sample ID: 1344403 Matrix: Water (Surface, Eff., Ground) QC for Sampley: 1164639001, 1164639005, 116463900s, 1164639009 Reyulty bA SM21 2130B Duplicate RPD (%) RPD CL Original Unity N8ME 7urbiditA 500 510 N7U 4.90 (T 50) **Batch Information** 8nalAtical <atcB: W8710h11 8nalAtical MetBod: SM51 5130< Inytrument: 7urbidimeter 8nalAyt: NEG

Print Date: 09/05/5016 2:54:04PM

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Blank Spike Summary	1164620	[\ <u>\</u> /\T1074	11		
Blank Spike ID: LCS for HBN Blank Spike Lab ID: 134440'	1 1164639   1 15:50	VAT1071	.1]		
Date Analyzed: 08/11/2016	15:50			Matrix: Water (Surface, Eff., Ground)	
QC for Samples: 1164639	001, 116463	39002, 1164	639008, 11646	639009	
Results by SM21 2130B					
		Blank Spike	e (NTU)		
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	
Furbidity	10	10.3	103	(90-110)	
Batch Information					
Analytical Batch: WAT10711				Prep Batch:	
Analytical Method: SM21 213 Instrument: Turbidimeter	0B			Prep Date/Time:	
Analyst: NEG				Spike Init Wt./Vol.: 10 NTU Extract Vol: 1 mL	
nt Date: 09/02/2016 5:24:05PM					
	200	) West Pott	er Drive Ancho	rage, AK 95518	
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<b>GS</b>				LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
Blank Spike ID: LCS for HBN ² Blank Spike Lab ID: 1344404 Date Analyzed: 08/11/2016	1164639   15:50	[WAT1071	1]	
				Matrix: Water (Surface, Eff., Ground)
C for Samples: 116463900	)1, 116463	39002, 1164	1639008, 11646	239009
Results by SM21 2130B				
		Blank Spike	e (NTU)	
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>
urbidity	10	10.0	100	(90-110)
Batch Information				
Analytical Batch: WAT10711	_			Prep Batch:
Analytical Method: SM21 2130E Instrument: Turbidimeter	3			Prep Method: Prep Date/Time:
Analyst: NEG				Spike Init Wt./Vol.: 10 NTU Extract Vol: 1 mL
nt Date: 09/02/2016 5:24:05PM				

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16-Dec-16

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Method Blank	]					
Blank ID: MB for HBN 1741753 [S T/ ঀ 34] L Blank ba8 ID: 134] ] ] Q	Matrix: S atsr ₩( rfaus, c ffĘ. ro( nGd					
Cm for Tap els6: 11Q4Q80551, 11Q4Q80552						
) s6( lt6 8R <b>EPA 410.4</b>	]	Ų				
/ arap stsr ) s6( lt6 mOsp iual UxRPsn Dsp anG 15E5y	<u>bUC9mb</u> <u>Db</u> <u>y nit6</u> 25E5 QE25 p P9b					
Batch Information gnalRiual BatuQ. S T/ ] 34] gnalRiual MstOoG c/ g 415⊠ In6tr( p snt: gnalR6t: ABc gnalRiual Dats9hip s: v9IQ2251Q 3:35:55/ M						



Blank Spike ID: LCS for HBN 1164639 [WSP5345] Blank Spike Lab ID: 1345557 Date Analyzed: 08/16/2016 15:30 Spike Duplicate ID: LCSD for HBN 1164639 [WSP5345] Spike Duplicate Lab ID: 1345558 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639001, 1164639002

Results by EPA 410.4									
		Blank Spike	e (mg/L)	Ś	Spike Duplio	cate (mg/L)			
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Chemical Oxygen Demand	500	490	98	500	493	99	(90-110)	0.50	(< 25)
Batch Information Analytical Batch: WSP5345 Analytical Method: EPA 410.4 Instrument: Analyst: KBE				Pre Pre Pre Spi Dup	p Batch: p Method: p Date/Tim ke Init Wt./\ be Init Wt./\	e: /ol.: 500 mg /ol.: 500 mg	J/L Extract V	/ol: 2 mL ol: 2 mL	

Print Date: 09/02/2016 5:24:09PM



#### Matrix Spike Summary

Original Sample ID: 1164639001 MS Sample ID: 1345559 MS MSD Sample ID: 1345560 MSD Analysis Date: 08/16/2016 15:30 Analysis Date: 08/16/2016 15:30 Analysis Date: 08/16/2016 15:30 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639001, 1164639002

Results by EPA 410.4										
		Mat	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
Parameter	Sample_	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Chemical Oxygen Demand	30.0	500	560	106	500	512	96	90-110	9.00	(< 25)
Batch Information Analytical Batch: WSP5345 Analytical Method: EPA 410.4 Instrument: Analyst: KBE Analytical Date/Time: 8/16/20	4 016 3:30:00P	°M		Prep Prep Prep Prep Prep	9 Batch: 9 Method: 9 Date/Tim 9 Initial Wt 9 Extract V	ne: ./Vol.: 2.0 /ol: 2.00m	0mL iL			

Print Date: 09/02/2016 5:24:10PM

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	16-Dec-16

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Method Blank Blank ID: MB for HBN 174 Blank Lab ID: 1345981	41790 [WTC/2618]	Matrix: Water (Surface, Eff., Ground)							
QC for Samples: 1164639001									
Results by SM 5310B									
<u>Parameter</u> Total Organic Carbon	<u>Results</u> 0.331J	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L					
Analytical Batch: WTC26 Analytical Method: SM 5 Instrument: TOC Analyz Analyst: VDL Analytical Date/Time: 8/	618 310B er 17/2016 9:28:28AM								

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Blank Spike Summary					
Blank Spike ID: LCS for HBN Blank Spike Lab ID: 1345979 Date Analyzed: 08/17/2016	1164639 09:13	[WTC2618	3]	Matrix: Water (Surface, Eff., Ground)	
QC for Samples: 11646390	01				
Results by SM 5310B					
		Blank Spike	e (mg/L)		
<u>Parameter</u> Total Organic Carbon	<u>Spike</u> 75	<u>Result</u> 82.2	<u>Rec (%)</u> 110	<u>CL</u> (80-120)	
Batch Information					
Analytical Batch: WTC2618 Analytical Method: SM 5310B Instrument: TOC Analyzer Analyst: VDL				Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 75 mg/L Extract Vol: 30 mL Dupe Init Wt./Vol.: Extract Vol:	
rint Date: 09/02/2016 5:24:14PM					
SGS North America Ir	1C. t 90	) West Pott 07.562.2343	er Drive Ancho 3 <b>f</b> 907.561.530	rage, AK 95518 1 www.us.sgs.com	



#### Matrix Spike Summary Original Sample ID: 1168406001 Analysis Date: 08/17/2016 9:43 MS Sample ID: 1345984 MS Analysis Date: 08/17/2016 9:59 MSD Sample ID: 1345985 MSD Analysis Date: 08/17/2016 10:14 Matrix: Water (Surface, Eff., Ground) QC for Samples: 1164639001 Results by SM 5310B Matrix Spike (mg/L) Spike Duplicate (mg/L) Parameter Sample <u>Spike</u> Result Rec (%) <u>Spike</u> Result Rec (%) <u>CL</u> RPD (%) RPD CL Total Organic Carbon 4.50 10.0 14.7 102 10.0 15.2 107 75-125 3.70 (< 25) **Batch Information** Analytical Batch: WTC2618 Prep Batch: Analytical Method: SM 5310B Prep Method: Instrument: TOC Analyzer Prep Date/Time: Analyst: VDL Prep Initial Wt./Vol.: 30.00mL Analytical Date/Time: 8/17/2016 9:59:05AM Prep Extract Vol: 30.00mL

Print Date: 09/02/2016 5:24:15PM

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S	SGS	Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16								
$\boldsymbol{\mathcal{C}}$	Method Blank									
	Blank ID: MB for HBN 1741796 [WTC/2620] Blank Lab ID: 1346019		Matrix: Water (Surface, Eff., Ground)							
	QC for Samples: 1164639002, 1164639006									
	Results by SM 5310B									
	Parameter Results		LOQ/CL	<u>DL</u>	<u>Units</u>					
	Total Organic Carbon	0.250U	0.500	0.150	mg/L					
H	Batch Information									
	Analytical Batch: WTC Analytical Method: SM Instrument: TOC Analy Analyst: VDL Analytical Date/Time: 8	2620 5310B /zer 3/17/2016 3:37:07PM								

Print Date: 09/02/2016 5:24:17PM

<b>SGS</b>				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
Blank Spike ID: LCS for HBN Blank Spike Lab ID: 1346815 Da7e t nalAyez: 8d01502816 QC for Samples: 116463988	1164639 [ 1/ :23 32, 116463	WTC2628 9886, 1164	639885	Ma7rix: Wa7er (Surface, Eff., Grounz)
			_	
Resul <i>i</i> s da <b>SM 5310B</b>				
	Calles	Blank Spike	(mgu)	
	<u>Spike</u>	Resul7	<u>Rec (%)</u>	
oral Organic Carbon	5/	59.8	10/	( 08-128 )
atch Information				
t nalAīcal Baīch: WTC2620 t nalAīcal Meīhoz: SM 5310B Insītumenī: TOC Analyzer t nalAsī: VDL				Prep Ba7ch: Prep Me7hoz: Prep Da7e0Time: Spike Ini7W7.0/ol.: 5/ mg0L Ex7rac7Vol: 38 mL Dupe Ini7W7.0/ol.: Ex7rac7Vol:
n7Da7e: 8908202816 /:24:1dPM				



#### Matrix Spike Summary

Original Sample ID: 116840MMI 3 S Sample ID: 145908A 3 S 3 SD Sample ID: 1459084 3 SD y nalst it Da/e: M87127AM16 19:9A y nalst it Da/e: M87127AM16 16:M9 y nalst it Da/e: M87127AM16 16:10 3 a/rix: DrinWing (a/er

od) Rr Samplet: 1165640M/AL1165640M/6L1165640M/2

uetfl/t cs SM 5310B										
		3 a	/rix SpiWé,	mg7E.	SpiVa	≜ Df pliGa/e	e ,mg7E.			
<u>barame/er</u> QR/al OrganiGd arcRn	<u>Sample</u> 2 <b>®</b> 2	<u>SpiVé</u> 1MDM	<u>u et f I/</u> 18 <b>0</b>	<u>u eG,k .</u> 111	<u>SpiWe</u> 1MDM	<u>u et f l/</u> 10Ơ	<u>u eG,k .</u> 11A	<u>d E</u> 29P1A9	<u>ubD,k.</u> MC98	<u>ubDdE</u> ,%A9.
Batch Information y nals/iGal Ta/G : ( Qd A6AM y nals/iGal 3 e/- R<: S3 941M Int /rf men/: QOd y nalsVer y nalst /: BDE y nals/iGal Da/e7Qime: 87127A	T V116 5:M9:50b	03		b rep b rep b rep b rep b rep	) Ta/G : 3 e/- R<: 0 Da/e7Qim 0 Ini/ial ( / 0 hx/raG E	ne: (ØBRIC 4M BRI: 4MDM	0MmE mE			

brin/ Da/e: M07MA7AM16 9:A5:10b3

Sz S NRr/- y meriGa InGC

# **Duplicate Sample Summary** Original Sample ID: 1164594001 Analysis Date: 08/15/2016 19:37 Duplicate Sample ID: 1345864 Matrix: Water (Surface, Eff., Ground) QC for Samples: 1164639001, 1164639002, 1164639008, 1164639009 Results by SM21 4500-H B Duplicate Units RPD (%) RPD CL Original NAME pН 7.80 7.80 0.00 pH units (< 5) **Batch Information** Analytical Batch: WTI4497 Analytical Method: SM21 4500-H B Instrument: Titration Analyst: ACF

Print Date: 09/02/2016 5:24:20PM

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# **Duplicate Sample Summary** Original Sample ID: 1164594002 Analysis Date: 08/15/2016 19:57 Duplicate Sample ID: 1345865 Matrix: Water (Surface, Eff., Ground) QC for Samples: 1164639001, 1164639002, 1164639008, 1164639009 Results by SM21 4500-H B Duplicate Units RPD (%) RPD CL Original NAME 8.10 pН 8.00 1.20 pH units (< 5) **Batch Information** Analytical Batch: WTI4497 Analytical Method: SM21 4500-H B Instrument: Titration Analyst: ACF

Print Date: 09/02/2016 5:24:20PM

SGS North America Inc.

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<b>SGS</b>				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary Blank Spike ID: LCS for H	IBN 1164639 [W ⁻	FI4497]		
Date Analyzed: 08/15/20	16 18:16			
				Matrix: Water (Surface, Eff., Ground)
QC for Samples: 11646	639001, 11646390	02, 1164	639008, 11646	639009
Results by SM21 4500-H I	В			
	Blank	Spike (	pH units)	
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>
H	1	.02	100	(99-101)
Batch Information				
Analytical Batch: WTI4497	,			Prep Batch:
Analytical Method: SM21 4	4500-H B			Prep Method:
Instrument: Titration				Prep Date/Time: Spike Init Wt./Vol.: 7 pH units Extract Vol: 1 mL
Analyst: ACF				Dupe Init Wt./Vol.: Extract Vol.
nt Date: 09/02/2016 5:24:21PM	1			

		S US/	ampling and Testing R AL-FG-GRZZZ-00-0020	eport - Event 2 016-004 Rev. 0 16-Dec-16			
Blank ID: MB for HBN 1741770 [WTI/4499] Blank Lab ID: 1345885		Matrix: Water (Surface, Eff., Ground)					
002, 1164639008, 1164639009							
0B							
<u>Results</u> 5.00U	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L				
TI4499 SM21 2320B 1 2: 8/15/2016 7:03:14PM							
	N 1741770 [WTI/4499] 35 002, 1164639008, 1164639009 0B Results 5.00U TI4499 SM21 2320B 1 2: 8/15/2016 7:03:14PM	M 1741770 [WTI/4499] Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri Matri M	M 1741770 [WTI/4499] Matrix: Water (Sur 35 002, 1164639008, 1164639009 0B <u>Results</u> LOQ/CL DL 5.00U 10.0 3.10 TI4499 SM21 2320B ** 8/15/2016 7:03:14PM	Sampling and Testing R USAL-FG-GRZZZ-00-0020         N 1741770 [WTI/4499]         Matrix: Water (Surface, Eff., Ground)         35         002, 1164639008, 1164639009         0B         Results       LOQ/CL       DL       Units         5.00U       10.0       3.10       mg/L         TH499         SM21 2320B       1       4       1         *: 8/15/2016       7:03:14PM       1       1       1			

Print Date: 09/02/2016 5:24:23PM

SGS			US	Sampling and Testing SAL-FG-GRZZZ-00-00	g Report - Event 2 02016-004 Rev. 0 16-Dec-16				
Duplicate Sample Summary           Original Sample ID: 1164594002           Duplicate Sample ID: 1345888           QC for Samples:           1164639001, 1164639002, 1164639008, 1164639009		639009	Analysis Date: 08/15/2016 19:57 Matrix: Water (Surface, Eff., Ground)						
Results by SM21 2320	3								
NAME	<u>Original</u>	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL				
<b>3atch Information</b> Analytical Batch: WTI44	199								
Analytical Method: SM2 Instrument: Titration Analyst: ACF	21 23208								

Print Date: 09/02/2016 5:24:24PM

SGS				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
Blank Spike ID: LCS for HBN Blank Spike La] ID: 134b556 Da& t nalAyez: d50lb0 d16	1164639 [W 19:12	TI44997	,	
- C for Samples: 1164639	dd1, 1164639d	d/ , 1164	639dd5, 11646	Ma&ix: Wa&r (Surface, Eff., Grounz)
Resul& ] A SM21 2320B				
	Bla	nk Spike	(mQ1L)	
<u>Parame&amp;er</u> t Ikalini&A	<u>Spike</u> / bd	<u>Resul8</u> / 36	<u>Rec (%)</u> 9b	<u>CL</u> ( 5bh11b )
Batch Information				
t nalA8cal Ba&V: WTI4499 t nalA8cal Me8/oz: SM21 2320 Ins&umen8 Titration t nalAs8 ACF	)B			Prep Ba&V: Prep Me&/oz: Prep Da&OTime: Spike Ini8W80/ol.: /bd mQ1L Ex&ac8vol: bd mL Dupe Ini8W80/ol.: Ex&ac8vol:
in8Da&: d90d/0/d16 b·/4·/bPM				
nsDa&: d90d/0/d16 b:/4:/bPM	۱۵ ام ام / ۱	1000D-00	n Drico t	
SGS Nor8/t merica	nc. t 9d2.	06/./343	f 9d2.b61.b3d	1 www.us.sQs.com



# Method Blank

Blank ID: MB for HBN 1741471 [WXX/11589] Blank Lab ID: 1344421 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

 $1164639001,\,1164639002,\,1164639008,\,1164639009$ 

# Results by EPA 300.0

<u>Parameter</u>	Results	LOQ/CL	DL	<u>Units</u>
Chloride	0.100U	0.200	0.0620	mg/L
Fluoride	0.100U	0.200	0.0620	mg/L
Nitrate-N	0.100U	0.200	0.0620	mg/L
Nitrite-N	0.100U	0.200	0.0620	mg/L
Sulfate	0.100U	0.200	0.0620	mg/L
Total Nitrate/Nitrite-N	0.100U	0.200	0.0620	mg/L

# **Batch Information**

Analytical Batch: WIC5558 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Analytical Date/Time: 8/11/2016 4:32:54AM Prep Batch: WXX11589 Prep Method: METHOD Prep Date/Time: 8/10/2016 1:05:00PM Prep Initial Wt./Vol.: 10 mL Prep Extract Vol: 10 mL

Print Date: 09/02/2016 5:24:27PM



Blank Spike ID: LCS for HBN 1164639 [WXX11589] Blank Spike Lab ID: 1344422 Date Analyzed: 08/11/2016 04:55

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1164639001, 1164639002, 1164639008, 1164639009

#### Results by EPA 300.0

			_	
		Blank Spike	e (mg/L)	
<u>Parameter</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	
Chloride	5	4.57	91	
Fluoride	5	4.76	95	
Nitrate-N	5	4.53	91	
Nitrite-N	5	4.61	92	
Sulfate	5	4.63	93	
Total Nitrate/Nitrite-N	10	9.14	91	

### **Batch Information**

Analytical Batch: WIC5558 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Prep Batch: WXX11589 Prep Method: METHOD Prep Date/Time: 08/10/2016 13:05 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 09/02/2016 5:24:28PM



#### Matrix Spike Summary

Original Sample ID: 1344413 MS Sample ID: 1344423 MS MSD Sample ID: 1344424 MSD

Analysis Date:	08/11/2016	5:17
Analysis Date:	08/11/2016	5:39
Analysis Date:	08/11/2016	6:01
Matrix: Water	(Surface, Eff.,	Ground

QC for Samples: 1164639001, 1164639002, 1164639008, 1164639009

Results by EPA 300.0										
		Mat	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Chloride	0.413	5.00	5.53	102	5.00	5.62	104	90-110	1.70	(< 15)
Fluoride	0.0830J	5.00	5.22	103	5.00	5.28	104	90-110	1.10	(< 15)
Nitrate-N	0.222	5.00	5.22	100	5.00	5.31	102	90-110	1.80	(< 15)
Nitrite-N	0.100U	5.00	5.11	102	5.00	5.36	107	90-110	4.70	(< 15)
Sulfate	0.100U	5.00	5.17	103	5.00	5.26	105	90-110	1.60	(< 15)
Total Nitrate/Nitrite-N	0.222	10.0	10.3	101	10.0	10.7	104	90-110	3.20	(< 15 )

#### **Batch Information**

Analytical Batch: WIC5558 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Analytical Date/Time: 8/11/2016 5:39:43AM Prep Batch: WXX11589 Prep Method: EPA 300.0 Extraction Waters/Liquids Prep Date/Time: 8/10/2016 1:05:00PM Prep Initial Wt./Vol.: 10.00mL Prep Extract Vol: 10.00mL

Print Date: 09/02/2016 5:24:30PM

Method Blank							
Blank ID: MB for HBN 1 Blank Lab ID: 1344930	1741567 [WXX/11592]	Matrix: Water (Surface, Eff., Ground)					
QC for Samples: 1164639001, 1164639002	2						
Results by SM21 4500F	P-B,E						
Parameter Ortho Phosphate-P	<u>Results</u> 0.00500U	LOQ/CL 0.0100	<u>DL</u> 0.00310	<u>Units</u> mg/L			
Batch Information							
Analytical Batch: WDA Analytical Method: SM Instrument: Discrete A Analyst: NEG Analytical Date/Time:	A3834 121 4500P-B,E Analyzer 3 8/11/2016 4:16:52PM	Prep Bat Prep Met Prep Dat Prep Initi Prep Ext	ch: WXX11592 thod: SM21 4500 æ/Time: 8/11/201 al Wt./Vol.: 25 m ract Vol: 25 mL	IP-B,E 6 3:00:00PM L			
Print Date: 09/02/2016 5:24:31	PM						
	200 West Potter Dr	ive Anchorage AK 955	518				

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Blank Spike ID: LCS for HBN 1164639 [V XX11295] Blank Spike Lab ID: 1344931 Da7e t nalAyez: d081185d16 12:34 Spike D/ pliua7e ID: LCSD for HBN 1164639 [V XX11295] Spike D/ pliua7e Lab ID: 1344935 s a7riM V a7er xS/ rfaueW(ff,WEro/ nz.

%C for Sa) pleR 1164639dd1WI164639dd5

#### c eR/ I7RbA SM21 4500P-B,E Blank Spike x) m8_. Spike D/ pliua7e x) m8L. Gara) e7er <u>Spike</u> <u>c eR 17</u> <u>ceuxP.</u> <u>Spike</u> <u>ceuxP.</u> CL <u>c GD CL</u> <u>c eR/ I7</u> <u>c GD xP .</u> g r7Qo GQoRpQa7e0G d,10d d,19< d,5 9d d,5 99 x02C112. 9,1d x-52. **Batch Information** t nalAilual BailuQ WDA3834 Grep Ba7uQ WXX11592 t nalAilual s eiQoz: SM21 4500P-B,E Grep s e7Qoz: SM21 4500P-B,E InR7() en7. Discrete Analyzer 3 Grep Da7e8hi) e: 08/11/2016 15:00 t nalAR7. NEG Spike Ini7V 7,8Tol,: d,5 ) m8_ (Mirau7Tol: 52 ) L D/peIni7V 7,8Tol,: d,5 ) m& (Mirau7Tol: 52 ) L

Grin7Da7e: d98d585d16 2:54:33Gs



### Matrix Spike Summary

Original Sample ID: 1164639001 MS Sample ID: 1344933 MS MSD Sample ID: 1344934 MSD

QC for Samples: 1164639001, 1164639002

Analysis Date: 08/11/2016 15:36 Analysis Date: 08/11/2016 15:36 Analysis Date: 08/11/2016 15:37 Matrix: Water (Surface, Eff., Ground)

go for oumpies.	110400001, 110400002	

Results by SM21 4500P-B,E			_							
		Mat	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
<u>Parameter</u>	Sample	Spike	Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Ortho Phosphate-P	0.0587	0.200	.273	107	0.200	0.275	108	75-125	0.69	(< 25)
Batch Information Analytical Batch: WDA3834 Analytical Method: SM21 450 Instrument: Discrete Analyze Analyst: NEG Analytical Date/Time: 8/11/20	00P-B,E r 3 016 3:36:56F	PM		Prep Prep Prep Prep Prep	) Batch: V ) Method: ) Date/Tim ) Initial Wt ) Extract V	VXX11592 Ortho Pho ne: 8/11/2 :./Vol.: 25. /ol: 25.00	2 osphorus SI 016 3:00:0 00mL mL	M4500P B 00PM	,E(W) Extra	act

Print Date: 09/02/2016 5:24:34PM

Method Blank							
Blank ID: MB for HBN Blank Lab ID: 134543	Blank ID: MB for HBN 1741677 [WXX/11595] Blank Lab ID: 1345436		Matrix: Water (Surface, Eff., Ground)				
QC for Samples: 1164639001. 116463900	02						
Results by SM21 4500	)P-B,E						
<u>Parameter</u> Total Phosphorus	<u>Results</u> 0.00610J	<u>LOQ/CL</u> 0.0100	<u>DL</u> 0.00310	<u>Units</u> mg/L			
Batch Information							
Analytical Batch: WE Analytical Method: S Instrument: Discrete Analyst: NEG Analytical Date/Time:	DA3839 6M21 4500P-B,E Analyzer 2 : 8/17/2016 12:15:15PM	Prep Bat Prep Me Prep Dat Prep Initi Prep Ext	ch: WXX11595 thod: SM21 4500 e/Time: 8/16/201 al Wt./Vol.: 25 m ract Vol: 25 mL	0P-B,E 16 12:30:00PM L			
Print Date: 09/02/2016 5:24:3	35PM						
SGS North A	merica Inc. 200 West Potter D t 907.562.2343 f 9	rive Anchorage, AK 955 07.561.5301 www.us.s	518 gs.com				

SGS


Blank Spike ID: LCS for HBN 1164639 [WXX11595] Blank Spike Lab ID: 1345437 Date Analyzed: 08/17/2016 12:16 Spike Duplicate ID: LCSD for HBN 1164639 [WXX11595] Spike Duplicate Lab ID: 1345438 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639001, 1164639002

Results by SM21 4500P-	B,E								
		Blank Spike	e (mg/L)	5	Spike Dupli	cate (mg/L)			
Parameter	Spike	Result	Rec (%)	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Total Phosphorus	0.2	0.208	104	0.2	0.225	112	(85-115)	7.70	(< 25)
Analytical Batch: WDA38	3s			Pre	p Batch: N	/99115s5			
Analytical Method: SM21	4500P-B,E			Pre	, p Method:	SM21 4500F	P-B,E		
Instrument: Dizcrete Ana	lyNer 2			Pre	p Date/Tim	e: 08/16/20	16 12:30		
Analyst: GEX				Spil Dup	ke Init Wt./\ be Init Wt./\	/ol.: 0.2 mg /ol.: 0.2 mg	g/L Extract \ J/L Extract V	/ol: 25 mL ol: 25 mL	

Print Date: 09/02/2016 5:24:36PM



#### Matrix Spike Summary

Original Sample ID: 1164390001 MS Sample ID: 134A439 MS MSD Sample ID: 134A440 MSD y nalst it Da&: 0/21527016 17:1/ y nalst it Da&: 0/21527016 17:19 y nalst it Da&: 0/21527016 17:19 Ma&ix: Wa&r (Surface, Eff., Ground)

QC for Samplet : 1164639001, 1164639007

Ret ul& bs SM21 4500P-B,E										
		Ma	rix Spike (r	mg <b>2</b> .)	Spike	e Duplica&	(mg <b>2</b> .)			
Parame&r	Sample	Spike	Ret ul8	<u>Rec (%)</u>	Spike	Ret ul8	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
ho&al P- ot p- orut	0.0461	0.700	.749	107	0.700	0.765	110	5A<17A	6./0	(B7A)
Batch Information y nals8cal Xa&- : WDy 3/ 39 y nals8cal Me8 od: SM71 4A00 Int 8umen8 Dit cre& y nalszer y nalst 8 NEG y nals8cal Da&2nime: / 215270	0P⊀,E 7 16 17:19:13F	РМ		Prep Prep Prep Prep Prep	Xa&-: V Me8 od: Da&2nim Ini8al W8 Ex8ac8V	VTT11A9A ho&al P-o ne: / 21627( 32/ol.: 7A /ol: 7A.00r	tp-orut (W 016 17:30:( 00mL nL	') Ex8 00PM		

Prin8Da&: 0920727016 A:74:35PM

SGS Nor8 ymerica Inc.

700 Wet 8Po8er Drive y nc- orage, y K 9AA1/ t 905.A67.7343 f 905.A61.A301 www.ut.tgt.com

65				1	6-Dec-16			
lethod Blank								
Blank ID: MB for HBN Blank ] aL ID: 1b43/ 4	17417576[ WWW41/912 1	Matrix: [ atpr (Curfacp, Eff., Ground)						
) Q for CaS mpe: 1/ 4/ bs991, 11/ 4/ bs9	95							
Rpeulte Ly SM21 450	0-NH3 G							
ParaS ptpr o S S onia-N	<u>Rpeulte</u> 9.9399U	<u>] O0 XQ]</u> 9.199	<u>D]</u> 9.9b19	<u>Unite</u> Sg <b>∦</b>				
atch Information								
hnalytical BatcA: [ [ hnalytical MptAod: C InetruSpnt: Diecrptp hnalyet: NEG hnalytical DatpXTiSp	Dhb8b8 CM51 4399-NHb G hnalyzpr 5 : 8xl/ x591/ 1:33:4bPM	PrpmBa PrpmMp PrpmDa PrpmIni PrpmEx	tcA: [ WWI1/91 btAod: METHOD ttpXTiSp: 8X/X69 tial [ t.X/ol.: / S] tract Vol: / S]	1/ 1:99:99PM ]				

Print Datp: 9s 395 3691/ 3:54:bsPM

CGC NortA h S prica Inc.



Blank Spike ID: LCS for HBN 1164639 [WXX11651] Blank Spike Lab ID: 134764t Da/e y nalzde0: 58/16/t 516 13:72 Spike DuplicaAe ID: LCSD for HBN 1164639 [WXX11651] Spike DuplicaAe Lab ID: 1347643 MaAix: WaAer (Surface, Eff., Groun0)

QC for Samples: 1164639551, 116463955t

ResulAs bz SM21 4500-NH3 G									
		Blank Spike	(mg/L)	5	Spike Duplic	caAe (mg/L)			
ParameÆr	<u>Spike</u>	<u>ResulA</u>	<u>Rec (%)</u>	<u>Spike</u>	<u>ResulA</u>	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
y mmonia1N	1	1.54	154	1	1.5t	15t	(27T1t7)	t .t 5	(h t 7 )
Batch Information y nalzAcal BaAc- : WDA3838 y nalzAcal MeA o0: SM21 4500-N InsAumenA Discrete Analyzer 2 y nalzsA NEG	IH3 G			Pre Pre Pre Spil Dup	p BaAc-: W p MeA o0: p DaAc/ <ima ke IniAWA/V pe IniAWA/V</ima 	<b>XX11601</b> <b>METHOD</b> e: <b>08/16/201</b> /ol.: 1 mg/L /ol.: 1 mg/L	1 <b>6 13:00</b> Ex <i>A</i> tacAVol: ExAtacAVol:	: 6 mL 6 mL	

PrinADaAe: 59/5t /t 516 7:t 4:41PM

SGS NorA ymerica Inc.



#### Matrix Spike Summary

Original Sample ID: 1164390001 MS Sample ID: 1345644 MS MSD Sample ID: 1345645 MSD

QC for Samples: 1164639001, 1164639002

Analysis Date: 08/16/2016 15:02 Analysis Date: 08/16/2016 15:04 Analysis Date: 08/16/2016 15:05 Matrix: Water (Surface, Eff., Ground)

		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
<u>Parameter</u> Ammonia-N	<u>Sample</u> 13.4	<u>Spike</u> 1.00	<u>Result</u> 14.2	<u>Rec (%)</u> 82	<u>Spike</u> 1.00	<u>Result</u> 14.4	<u>Rec (%)</u> 103	<u>CL</u> 75-125	<u>RPD (%)</u> 1.50	<u>RPD Cl</u> (< 25 )
Batch Information Analytical Batch: WDA38 Analytical Method: SM21 Instrument: Discrete Ana Analyst: NEG Analytical Date/Time: 8/1	338 4500-NH3 G lyzer 2 6/2016 3:04:06	PM		Prep Prep Prep Prep Prep	) Batch: V ) Method: ) Date/Tim ) Initial Wt ) Extract V	VXX11601 Ammonia ne: 8/16/2 ./Vol.: 6.0 /ol: 6.00m	by SM21 4 016 1:00:0 0mL L	500F prep I0PM	) (W)	

Print Date: 09/02/2016 5:24:41PM

SGS North America Inc.

GS		Sampling and Testing F USAL-FG-GRZZZ-00-002	Report - Event 2 2016-004 Rev. 0 16-Dec-16
Method Blank Blank ID: MB for HBN 1742208 [WXX/11606] Blank Lab ID: 1347961 QC for Samples: 1164639001, 1164639002	Matrix: Wa	ter (Surface, Eff., Ground)	
Results by SM21 4500-N D Parameter Results Total Kjeldahl Nitrogen 0.500U	<u>LOQ/CL</u> <u>DI</u> 1.00 0.	L <u>Units</u> 310 mg/L	
Analytical Batch: WDA3843 Analytical Batch: WDA3843 Analytical Method: SM21 4500-N D Instrument: Discrete Analyzer 3 Analyst: NEG Analytical Date/Time: 8/24/2016 3:53:56PM	Prep Batch: V Prep Method: Prep Date/Tim Prep Initial Wt Prep Extract V	VXX11606 METHOD ne: 8/23/2016 6:00:00PM ./Vol.: 25 mL /ol: 25 mL	

Print Date: 09/02/2016 5:24:42PM

SGS North America Inc.



#### 3 GBI a Snkap Sie e Bum

Blank Spike ID: LCS for HBN 1164639 [WXX11606] Blank Spike Lab ID: 1347962 Date Analyzed: 08/24/2016 15:55 Spike Duplicate ID: LCSD for HBN 1164639 [WXX11606] Spike Duplicate Lab ID: 1347963 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639001, 1164639002

Results by SM21 4500-N H									
		Blank Spike	e (mg/L)	5	Spike Duplic	cate (mg/L)			
Parameter	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Total Kjeldahl Nitrogen	4	3.81	95	4	3.86	97	(75-125)	1.40	(< 25)
3 Bryt d H ue Brk I Analytical Batch: f Ho VD4W Analytical Method: SM21 4500 Instrument: HkAyuprp ol B@8pt Analyst: Nsz	D-N H uW			Pre Pre Pre Spil Dup	p Batch: f p Method: p Date/Timo ke Init Wt./V	<b>EE11X0X</b> <b>Ms6TOH</b> e: <b>0D/2W201</b> /ol.: 4 mg/L /ol.: 4 mg/L	I <b>X 1D:00</b> Extract Vol: Extract Vol:	: 25 mL 25 mL	

Print Date: 09/02/2016 5:24:44PM



#### Matrix Spike Summary

Original Sample ID: 1164728001 MS Sample ID: 1347964 MS MSD Sample ID: 1347965 MSD

QC for Samples: 1164639001, 1164639002

Analysis Date: 08/24/2016 16:37 Analysis Date: 08/24/2016 16:38 Analysis Date: 08/24/2016 16:39 Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500-N D										
		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
<u>Parameter</u> Total Kjeldahl Nitrogen	<u>Sample</u> 37.2	<u>Spike</u> 4.00	<u>Result</u> 43.1	<u>Rec (%)</u> 149   *	<u>Spike</u> 4.00	<u>Result</u> 42.7	<u>Rec (%)</u> 139 *	<u>CL</u> 75-125	<u>RPD (%)</u> 0.92	<u>RPD CL</u> (< 25 )
Batch Information Analytical Batch: WDA3843 Analytical Method: SM21 45 Instrument: Discrete Analyze Analyst: NEG Analytical Date/Time: 8/24/2	00-N D er 3 016 4:38:42	PM		Prep Prep Prep Prep Prep	) Batch: \ ) Method: ) Date/Tin ) Initial Wi ) Extract \	WXX11606 Distillatio ne: 8/23/2 t./Vol.: 25. Vol: 25.00	6 n TKN by Pł 016 6:00:0 00mL mL	nenate (W 0PM	')	

Print Date: 09/02/2016 5:24:45PM

SGS North America Inc.



Blank ID: MB for HBN 1741698 [XXX/36071] Blank Lab ID: 1345539 Matrix: Water (Surface, Eff., Ground)

Confidential

16-Dec-16

LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2

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QC for Samples: 1164639001, 1164639002

#### Results by 8270D SIM (PEST)

Parameter	Results	LOQ/CL	DL	<u>Units</u>
4,4'-DDD	0.0150U	0.0300	0.00940	ug/L
4,4'-DDE	0.0150U	0.0300	0.00940	ug/L
4,4'-DDT	0.0150U	0.0300	0.00940	ug/L
Aldrin	0.0150U	0.0300	0.00940	ug/L
alpha-BHC	0.0150U	0.0300	0.00940	ug/L
alpha-Chlordane	0.0150U	0.0300	0.00940	ug/L
beta-BHC	0.0150U	0.0300	0.00940	ug/L
delta-BHC	0.0150U	0.0300	0.00940	ug/L
Dieldrin	0.0150U	0.0300	0.00940	ug/L
Endosulfan I	0.0150U	0.0300	0.00940	ug/L
Endosulfan II	0.0150U	0.0300	0.00940	ug/L
Endosulfan sulfate	0.0150U	0.0300	0.00940	ug/L
Endrin	0.0150U	0.0300	0.00940	ug/L
Endrin aldehyde	0.0150U	0.0300	0.00940	ug/L
Endrin ketone	0.0150U	0.0300	0.00940	ug/L
gamma-BHC (Lindane)	0.0150U	0.0300	0.00940	ug/L
gamma-Chlordane	0.0150U	0.0300	0.00940	ug/L
Heptachlor	0.0150U	0.0300	0.00940	ug/L
Heptachlor epoxide	0.0150U	0.0300	0.00940	ug/L
Methoxychlor	0.0150U	0.0300	0.00940	ug/L
Toxaphene	1.00U	2.00	0.620	ug/L
Surrogates				
2-Fluorobiphenyl (surr)	68	53-106		%
Terphenyl-d14 (surr)	78.4	58-132		%

#### **Batch Information**

Analytical Batch: XMS9554 Analytical Method: 8270D SIM (PEST) Instrument: HP 6890 Series II MS2 SVOA Analyst: DSH Analytical Date/Time: 8/17/2016 5:57:00PM Prep Batch: XXX36071 Prep Method: SW3520C Prep Date/Time: 8/17/2016 10:13:42AM Prep Initial Wt./Vol.: 1000 mL Prep Extract Vol: 1 mL

Print Date: 09/02/2016 5:24:46PM

SGS North America Inc.



Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

#### Blank Spike Summary

Blank Spike ID: LCS for HBN 1164639 [XXX36071] Blank Spike Lab ID: 1345540 Date Analyzed: 08/17/2016 18:46 Spike Duplicate ID: LCSD for HBN 1164639 [XXX36071] Spike Duplicate Lab ID: 1345541 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639001, 1164639002

#### Results by 8270D SIM (PEST)

		Blank Spike	e (ug/L)		Spike Dupli	cate (ug/L)			
Parameter	<u>Spike</u>	<u>Result</u>	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
4,4'-DDD	0.25	0.221	89	0.25	0.212	85	(56-143)	4.40	(< 20)
4,4'-DDE	0.25	0.181	72	0.25	0.171	68	(57-135)	5.70	(< 20)
4,4'-DDT	0.25	0.194	78	0.25	0.188	75	(51-143)	3.20	(< 20)
Aldrin	0.25	0.192	77	0.25	0.162	65	(45-134)	16.70	(< 20)
alpha-BHC	0.25	0.171	68	0.25	0.145	58	(54-138)	16.60	(< 20)
alpha-Chlordane	0.25	0.186	74	0.25	0.161	64	(60-129)	14.20	(< 20)
beta-BHC	0.25	0.168	67	0.25	0.150	60	(56-136)	11.50	(< 20)
delta-BHC	0.25	0.185	74	0.25	0.163	65	(52-142)	12.90	(< 20)
Dieldrin	0.25	0.217	87	0.25	0.201	80	(60-136)	8.00	(< 20)
Endosulfan I	0.25	0.153	61	* 0.25	0.130	52	* (62-126)	16.00	(< 20)
Endosulfan II	0.25	0.181	72	0.25	0.174	70	(52-135)	4.10	(< 20)
Endosulfan sulfate	0.25	0.220	88	0.25	0.219	88	(62-133)	0.48	(< 20)
Endrin	0.25	0.200	80	0.25	0.191	76	(60-138)	4.50	(< 20)
Endrin aldehyde	0.25	0.202	81	0.25	0.194	78	(51-132)	3.90	(< 20)
Endrin ketone	0.25	0.243	97	0.25	0.229	92	(58-134)	5.90	(< 20)
gamma-BHC (Lindane)	0.25	0.172	69	0.25	0.150	60	(59-134)	14.00	(< 20)
gamma-Chlordane	0.25	0.182	73	0.25	0.162	65	(56-136)	11.70	(< 20)
Heptachlor	0.25	0.195	78	0.25	0.163	65	(54-130)	17.80	(< 20)
Heptachlor epoxide	0.25	0.184	74	0.25	0.164	66	(61-133)	11.40	(< 20)
Methoxychlor	0.25	0.196	78	0.25	0.192	77	(54-145)	1.90	(< 20)
Surrogates									
2-Fluorobiphenyl (surr)	0.5	69.8	70	0.5	59.9	60	(53-106)	15.20	
Terphenyl-d14 (surr)	0.5	80.7	81	0.5	76.8	77	(58-132)	4.90	

#### **Batch Information**

Analytical Batch: XMS9554 Analytical Method: 8270D SIM (PEST) Instrument: HP 6890 Series II MS2 SVOA Analyst: DSH Prep Batch: XXX36071 Prep Method: SW3520C Prep Date/Time: 08/17/2016 10:13 Spike Init Wt./Vol.: 0.25 ug/L Extract Vol: 1 mL Dupe Init Wt./Vol.: 0.25 ug/L Extract Vol: 1 mL

Print Date: 09/02/2016 5:24:48PM

SGS North America Inc.

#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

# Method Blank

SG

Blank ID: MB for HBN 1741699 [XXX/36072] Blank Lab ID: 1345542 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639001, 1164639002, 1164639008, 1164639009

## Results by SW8270D

Parameter	Results	LOQ/CL	DL	<u>Units</u>
1,2,4-Trichlorobenzene	0.00500U	0.0100	0.00310	mg/L
1,2-Dichlorobenzene	0.00500U	0.0100	0.00310	mg/L
1,3-Dichlorobenzene	0.00500U	0.0100	0.00310	mg/L
1,4-Dichlorobenzene	0.00500U	0.0100	0.00310	mg/L
1-Chloronaphthalene	0.00500U	0.0100	0.00310	mg/L
1-Methylnaphthalene	0.00500U	0.0100	0.00310	mg/L
2,4,5-Trichlorophenol	0.00500U	0.0100	0.00310	mg/L
2,4,6-Trichlorophenol	0.00500U	0.0100	0.00310	mg/L
2,4-Dichlorophenol	0.00500U	0.0100	0.00310	mg/L
2,4-Dimethylphenol	0.00500U	0.0100	0.00310	mg/L
2,4-Dinitrophenol	0.0250U	0.0500	0.0150	mg/L
2,4-Dinitrotoluene	0.00500U	0.0100	0.00310	mg/L
2,6-Dichlorophenol	0.00500U	0.0100	0.00310	mg/L
2,6-Dinitrotoluene	0.00500U	0.0100	0.00310	mg/L
2-Chloronaphthalene	0.00500U	0.0100	0.00310	mg/L
2-Chlorophenol	0.00500U	0.0100	0.00310	mg/L
2-Methyl-4,6-dinitrophenol	0.0250U	0.0500	0.0150	mg/L
2-Methylnaphthalene	0.00500U	0.0100	0.00310	mg/L
2-Methylphenol (o-Cresol)	0.00500U	0.0100	0.00310	mg/L
2-Nitroaniline	0.00500U	0.0100	0.00310	mg/L
2-Nitrophenol	0.00500U	0.0100	0.00310	mg/L
3&4-Methylphenol (p&m-Cresol)	0.0100U	0.0200	0.00620	mg/L
3,3-Dichlorobenzidine	0.00500U	0.0100	0.00310	mg/L
3-Nitroaniline	0.00500U	0.0100	0.00310	mg/L
4-Bromophenyl-phenylether	0.00500U	0.0100	0.00310	mg/L
4-Chloro-3-methylphenol	0.00500U	0.0100	0.00310	mg/L
4-Chloroaniline	0.00500U	0.0100	0.00310	mg/L
4-Chlorophenyl-phenylether	0.00500U	0.0100	0.00310	mg/L
4-Nitroaniline	0.00500U	0.0100	0.00310	mg/L
4-Nitrophenol	0.0250U	0.0500	0.0150	mg/L
Acenaphthene	0.00500U	0.0100	0.00310	mg/L
Acenaphthylene	0.00500U	0.0100	0.00310	mg/L
Aniline	0.0250U	0.0500	0.0150	mg/L
Anthracene	0.00500U	0.0100	0.00310	mg/L
Azobenzene	0.00500U	0.0100	0.00310	mg/L
Benzo(a)Anthracene	0.00500U	0.0100	0.00310	mg/L
Benzo[a]pyrene	0.00500U	0.0100	0.00310	mg/L
Benzo[b]Fluoranthene	0.00500U	0.0100	0.00310	mg/L

Print Date: 09/02/2016 5:24:49PM

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# SGS

# Method Blank

Blank ID: MB for HBN 1741699 [XXX/36072] Blank Lab ID: 1345542 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639002, 1164639008, 1164639009

#### Results by SW8270D

Parameter	Results	LOQ/CL	DL	Units
Benzo[g,h,i]perylene	0.00500U	0.0100	0.00310	mg/L
Benzo[k]fluoranthene	0.00500U	0.0100	0.00310	mg/L
Benzoic acid	0.0250U	0.0500	0.0150	mg/L
Benzyl alcohol	0.00500U	0.0100	0.00310	mg/L
Bis(2chloro1methylethyl)Ether	0.00500U	0.0100	0.00310	mg/L
Bis(2-Chloroethoxy)methane	0.00500U	0.0100	0.00310	mg/L
Bis(2-Chloroethyl)ether	0.00500U	0.0100	0.00310	mg/L
bis(2-Ethylhexyl)phthalate	0.00500U	0.0100	0.00310	mg/L
Butylbenzylphthalate	0.00500U	0.0100	0.00310	mg/L
Carbazole	0.00500U	0.0100	0.00310	mg/L
Chrysene	0.00500U	0.0100	0.00310	mg/L
Dibenzo[a,h]anthracene	0.00500U	0.0100	0.00310	mg/L
Dibenzofuran	0.00500U	0.0100	0.00310	mg/L
Diethylphthalate	0.00500U	0.0100	0.00310	mg/L
Dimethylphthalate	0.00500U	0.0100	0.00310	mg/L
Di-n-butylphthalate	0.00500U	0.0100	0.00310	mg/L
di-n-Octylphthalate	0.00500U	0.0100	0.00310	mg/L
Fluoranthene	0.00500U	0.0100	0.00310	mg/L
Fluorene	0.00500U	0.0100	0.00310	mg/L
Hexachlorobenzene	0.00500U	0.0100	0.00310	mg/L
Hexachlorobutadiene	0.00500U	0.0100	0.00310	mg/L
Hexachlorocyclopentadiene	0.0150U	0.0300	0.00940	mg/L
Hexachloroethane	0.00500U	0.0100	0.00310	mg/L
Indeno[1,2,3-c,d] pyrene	0.00500U	0.0100	0.00310	mg/L
Isophorone	0.00500U	0.0100	0.00310	mg/L
Naphthalene	0.00500U	0.0100	0.00310	mg/L
Nitrobenzene	0.00500U	0.0100	0.00310	mg/L
N-Nitrosodimethylamine	0.00500U	0.0100	0.00310	mg/L
N-Nitroso-di-n-propylamine	0.00500U	0.0100	0.00310	mg/L
N-Nitrosodiphenylamine	0.00500U	0.0100	0.00310	mg/L
Pentachlorophenol	0.0250U	0.0500	0.0150	mg/L
Phenanthrene	0.00500U	0.0100	0.00310	mg/L
Phenol	0.00500U	0.0100	0.00310	mg/L
Pyrene	0.00500U	0.0100	0.00310	mg/L
Surrogates				
2,4,6-Tribromophenol (surr)	81.6	43-140		%
2-Fluorobiphenyl (surr)	63.6	44-119		%
2-Fluorophenol (surr)	57.2	19-119		%

Print Date: 09/02/2016 5:24:49PM

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Method Blank	- Method Blank							
Blank ID: MB for HBN 174 Blank Lab ID: 1345542	1699 [XXX/36072]	Matrix: Water (Surface, Eff., Ground)						
QC for Samples: 1164639001, 1164639002, 1	QC for Samples: 1164639001, 1164639002, 1164639008, 1164639009 Results by <b>SW8270D</b>							
Results by SW8270D								
Parameter	<u>Results</u>	LOQ/CL	<u>DL</u>	Units				
Nitrobenzene-d5 (surr)	60	44-120		%				
Phenol-d6 (surr)	56.8	10-115		%				
Terphenyl-d14 (surr)	105	50-134		%				
Analytical Batch: XMS95 Analytical Method: SW82 Instrument: HP 6890/597 Analyst: DSH Analytical Date/Time: 8/2	Batch Information Analytical Batch: XMS9556 Analytical Method: SW8270D Instrument: HP 6890/5973 SSA Analyst: DSH Analytical Date/Time: 8/22/2016 7:08:00PM		Prep Batch: XXX36072 Prep Method: SW3520C Prep Date/Time: 8/17/2016 10:13:40AM Prep Initial Wt./Vol.: 1000 mL Prep Extract Vol: 1 mL					

Print Date: 09/02/2016 5:24:49PM

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1164639 [XXX36072] Blank Spike Lab ID: 1345543 Date Analyzed: 08/22/2016 19:26 Spike Duplicate ID: LCSD for HBN 1164639 [XXX36072] Spike Duplicate Lab ID: 1345544 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1164639001, 1164639002, 1164639008, 1164639009

#### Results by SW8270D

	E	Blank Spike	(mg/L)	S	pike Duplica	ate (mg/L)			
<u>Parameter</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
1,2,4-Trichlorobenzene	0.1	0.0592	59	0.1	0.0613	61	(29-116)	3.40	(< 20)
1,2-Dichlorobenzene	0.1	0.0557	56	0.1	0.0577	58	(32-111)	3.60	(< 20)
1,3-Dichlorobenzene	0.1	0.0549	55	0.1	0.0574	57	(28-110)	4.30	(< 20)
1,4-Dichlorobenzene	0.1	0.0556	56	0.1	0.0584	58	(29-112)	5.00	(< 20)
1-Chloronaphthalene	0.04	0.0286	72	0.04	0.0322	81	(58-111)	11.60	(< 20)
1-Methylnaphthalene	0.1	0.0657	66	0.1	0.0694	69	(41-119)	5.50	(< 20)
2,4,5-Trichlorophenol	0.1	0.0761	76	0.1	0.0812	81	(53-123)	6.50	(< 20)
2,4,6-Trichlorophenol	0.1	0.0725	73	0.1	0.0782	78	(50-125)	7.60	(< 20)
2,4-Dichlorophenol	0.1	0.0601	60	0.1	0.0651	65	(47-121)	7.90	(< 20)
2,4-Dimethylphenol	0.1	0.0546	55	0.1	0.0548	55	(31-124)	0.38	(< 20)
2,4-Dinitrophenol	0.18	0.140	78	0.18	0.164	91	(23-143)	15.30	(< 20)
2,4-Dinitrotoluene	0.1	0.0798	80	0.1	0.0836	84	(57-128)	4.50	(< 20)
2,6-Dichlorophenol	0.04	0.0241	60	0.04	0.0261	65	(50-118)	8.00	(< 20)
2,6-Dinitrotoluene	0.1	0.0766	77	0.1	0.0807	81	(57-124)	5.30	(< 20)
2-Chloronaphthalene	0.1	0.0665	67	0.1	0.0708	71	(40-116)	6.30	(< 20)
2-Chlorophenol	0.1	0.0519	52	0.1	0.0561	56	(38-117)	7.90	(< 20)
2-Methyl-4,6-dinitrophenol	0.18	0.156	87	0.18	0.167	93	(44-137)	7.20	(< 20)
2-Methylnaphthalene	0.1	0.0622	62	0.1	0.0664	66	(40-121)	6.40	(< 20)
2-Methylphenol (o-Cresol)	0.1	0.0542	54	0.1	0.0577	58	(30-117)	6.20	(< 20)
2-Nitroaniline	0.1	0.0833	83	0.1	0.0862	86	(55-117)	3.40	(< 20)
2-Nitrophenol	0.1	0.0649	65	0.1	0.0679	68	(47-123)	4.50	(< 20)
3&4-Methylphenol (p&m-Cresol)	0.14	0.0833	60	0.14	0.0893	64	(29-110)	7.00	(< 20)
3,3-Dichlorobenzidine	0.1	0.0764	76	0.1	0.0762	76	(27-129)	0.24	(< 20)
3-Nitroaniline	0.1	0.0814	81	0.1	0.0861	86	(41-128)	5.50	(< 20)
4-Bromophenyl-phenylether	0.1	0.0840	84	0.1	0.0866	87	(55-124)	3.00	(< 20)
4-Chloro-3-methylphenol	0.1	0.0676	68	0.1	0.0734	73	(52-119)	8.10	(< 20)
4-Chloroaniline	0.1	0.0570	57	0.1	0.0584	58	(33-117)	2.50	(< 20)
4-Chlorophenyl-phenylether	0.1	0.0783	78	0.1	0.0843	84	(53-121)	7.30	(< 20)
4-Nitroaniline	0.1	0.0816	82	0.1	0.0869	87	(74-118)	6.30	(< 20)
4-Nitrophenol	0.14	0.0967	69	0.14	0.104	74	(52-111)	7.00	(< 20)
Acenaphthene	0.1	0.0734	73	0.1	0.0789	79	(47-122)	7.30	(< 20)
Acenaphthylene	0.1	0.0740	74	0.1	0.0776	78	(41-130)	4.70	(< 20)
Aniline	0.1	0.0340J	34	0.1	0.0320J	32	(10-87)	6.20	(< 20)
Anthracene	0.1	0.0740	74	0.1	0.0766	77	(57-123)	3.50	(< 20)

Print Date: 09/02/2016 5:24:51PM

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#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1164639 [XXX36072] Blank Spike Lab ID: 1345543 Date Analyzed: 08/22/2016 19:26 Spike Duplicate ID: LCSD for HBN 1164639 [XXX36072] Spike Duplicate Lab ID: 1345544 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1164639001, 1164639002, 1164639008, 1164639009

	E	Blank Spike	(mg/L)	S	pike Duplic	ate (mg/L)			
Parameter	<u>Spike</u>	Result	Rec (%)	Spike	Result	Rec (%)	CL	<u>RPD (%)</u>	RPD CL
Azobenzene	0.1	0.0879	88	0.1	0.0879	88	(61-116)	0.01	(< 20)
Benzo(a)Anthracene	0.1	0.0888	89	0.1	0.0889	89	(58-125)	0.08	(< 20)
Benzo[a]pyrene	0.1	0.0826	83	0.1	0.0848	85	(54-128)	2.60	(< 20)
Benzo[b]Fluoranthene	0.1	0.0936	94	0.1	0.0917	92	(53-131)	2.00	(< 20)
Benzo[g,h,i]perylene	0.1	0.0941	94	0.1	0.0932	93	(50-134)	0.91	(< 20)
Benzo[k]fluoranthene	0.1	0.0865	87	0.1	0.0942	94	(57-129)	8.50	(< 20)
Benzoic acid	0.14	0.0654	47	0.14	0.0839	60	(21-107)	24.80	* (< 20)
Benzyl alcohol	0.1	0.0551	55	0.1	0.0589	59	(31-112)	6.80	(< 20)
Bis(2chloro1methylethyl)Ether	0.1	0.0606	61	0.1	0.0634	63	(37-130)	4.60	(< 20)
Bis(2-Chloroethoxy)methane	0.1	0.0679	68	0.1	0.0707	71	(48-120)	4.00	(< 20)
Bis(2-Chloroethyl)ether	0.1	0.0539	54	0.1	0.0554	55	(43-118)	2.70	(< 20)
bis(2-Ethylhexyl)phthalate	0.1	0.0896	90	0.1	0.0909	91	(55-135)	1.50	(< 20)
Butylbenzylphthalate	0.1	0.0899	90	0.1	0.0925	93	(53-134)	2.90	(< 20)
Carbazole	0.1	0.0856	86	0.1	0.0903	90	(60-122)	5.40	(< 20)
Chrysene	0.1	0.0939	94	0.1	0.0946	95	(59-123)	0.75	(< 20)
Dibenzo[a,h]anthracene	0.1	0.0969	97	0.1	0.0961	96	(51-134)	0.77	(< 20)
Dibenzofuran	0.1	0.0732	73	0.1	0.0775	78	(53-118)	5.70	(< 20)
Diethylphthalate	0.1	0.0783	78	0.1	0.0826	83	(56-125)	5.40	(< 20)
Dimethylphthalate	0.1	0.0766	77	0.1	0.0795	80	(45-127)	3.80	(< 20)
Di-n-butylphthalate	0.1	0.0843	84	0.1	0.0889	89	(59-127)	5.30	(< 20)
di-n-Octylphthalate	0.1	0.0928	93	0.1	0.0929	93	(51-140)	0.14	(< 20)
Fluoranthene	0.1	0.0818	82	0.1	0.0859	86	(57-128)	4.90	(< 20)
Fluorene	0.1	0.0777	78	0.1	0.0791	79	(52-124)	1.90	(< 20)
Hexachlorobenzene	0.1	0.0812	81	0.1	0.0848	85	(53-125)	4.40	(< 20)
Hexachlorobutadiene	0.1	0.0627	63	0.1	0.0641	64	(22-124)	2.30	(< 20)
Hexachlorocyclopentadiene	0.1	0.0419	42	0.1	0.0388	39	(10-93)	7.60	(< 20)
Hexachloroethane	0.1	0.0527	53	0.1	0.0550	55	(21-115)	4.20	(< 20)
Indeno[1,2,3-c,d] pyrene	0.1	0.0904	90	0.1	0.0899	90	(52-134)	0.54	(< 20)
Isophorone	0.1	0.0609	61	0.1	0.0670	67	(42-124)	9.50	(< 20)
Naphthalene	0.1	0.0615	62	0.1	0.0634	63	(40-121)	3.00	(< 20)
Nitrobenzene	0.1	0.0609	61	0.1	0.0622	62	(45-121)	2.10	(< 20)
N-Nitrosodimethylamine	0.1	0.0467	47	0.1	0.0501	50	(41-117)	7.10	(< 20)
N-Nitroso-di-n-propylamine	0.1	0.0664	66	0.1	0.0719	72	(49-119)	7.90	(< 20)
N-Nitrosodiphenylamine	0.1	0.0699	70	0.1	0.0699	70	(51-123)	0.03	(< 20)

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Blank Spike ID: LCS for HBN 1164639 [XXX36072] Blank Spike Lab ID: 1345543 Date Analyzed: 08/22/2016 19:26 Spike Duplicate ID: LCSD for HBN 1164639 [XXX36072] Spike Duplicate Lab ID: 1345544 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164639001, 1164639002, 1164639008, 1164639009

#### Results by SW8270D

	l	Blank Spike	(mg/L)	5	Spike Duplic	ate (mg/L)			
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Pentachlorophenol	0.14	0.124	89	0.14	0.131	94	(35-138)	5.20	(< 20)
Phenanthrene	0.1	0.0838	84	0.1	0.0856	86	(59-120)	2.10	(< 20)
Phenol	0.1	0.0452	45	0.1	0.0483	48	(39-84)	6.50	(< 20)
Pyrene	0.1	0.0860	86	0.1	0.0896	90	(57-126)	4.10	(< 20)
Surrogates									
2,4,6-Tribromophenol (surr)	0.2	86.7	87	0.2	93.3	93	(43-140)	7.30	
2-Fluorobiphenyl (surr)	0.1	69	69	0.1	74.3	74	(44-119)	7.30	
2-Fluorophenol (surr)	0.2	53.3	53	0.2	58.5	59	(19-119)	9.30	
Nitrobenzene-d5 (surr)	0.1	62.3	62	0.1	64.8	65	(44-120)	4.00	
Phenol-d6 (surr)	0.2	55.3	55	0.2	60.5	61	(10-115)	8.90	
Terphenyl-d14 (surr)	0.1	91.9	92	0.1	100	100	(50-134)	8.70	

#### **Batch Information**

Analytical Batch: XMS9556 Analytical Method: SW8270D Instrument: HP 6890/5973 SSA Analyst: DSH Prep Batch: XXX36072 Prep Method: SW3520C Prep Date/Time: 08/17/2016 10:13 Spike Init Wt./Vol.: 0.1 mg/L Extract Vol: 1 mL Dupe Init Wt./Vol.: 0.1 mg/L Extract Vol: 1 mL

Print Date: 09/02/2016 5:24:51PM

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#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

### Method Blank

SG

Blank ID: MB for HBN 1741723 [XXX/36075] Blank Lab ID: 1345632

QC for Samples: 1164639001, 1164639002

#### Results by SW8082A

		DL	Units
0.200U	0.400	0.120	ug/L
0.500U	1.00	0.310	ug/L
0.0500U	0.100	0.0310	ug/L
0.0500U	0.100	0.0310	ug/L
0.0500U	0.100	0.0310	ug/L
0.0500U	0.100	0.0310	ug/L
0.0500U	0.100	0.0310	ug/L
96	40-135		%
	0.2000 0.500U 0.0500U 0.0500U 0.0500U 0.0500U 0.0500U 96	0.2000     0.400       0.500U     1.00       0.0500U     0.100       0.0500U     0.100       0.0500U     0.100       0.0500U     0.100       0.0500U     0.100       96     40-135	0.2000       0.400       0.120         0.500U       1.00       0.310         0.0500U       0.100       0.0310         96       40-135

#### **Batch Information**

Analytical Batch: XGC9464 Analytical Method: SW8082A Instrument: Agilent 7890B GC ECD SW F Analyst: S.G Analytical Date/Time: 8/18/2016 12:22:00PM Prep Batch: XXX36075 Prep Method: SW3520C Prep Date/Time: 8/17/2016 3:07:54PM Prep Initial Wt./Vol.: 1000 mL Prep Extract Vol: 1 mL

Matrix: Water (Surface, Eff., Ground)

Print Date: 09/02/2016 5:24:52PM

SGS North America Inc.



Blank Spike ID: LCS for HBN 1164639 [WWW86X5] b Blank Spike La7 ID: 134] 633 Date Analyzed: X08108 X16 1/:3/ Spike D2pliuate ID: LCSD for HBN 1164639 [WWW36X5] b Spike D2pliuate La7 ID: 134] 634 s atriM x ater (S2rfaue, Eff., Gro2nd)

QC for SampleR 1164639XX1, 1164639XX/

_ c eR2ltR7y <b>SW8082A</b>			_							-
		Blank Spike	e (2g8L)	Ş	Spike D2pli	uate (2g&)				
Parameter	Spike	<u>c eR2lt</u>	<u>c eu (%)</u>	<u>Spike</u>	<u>c eR2lt</u>	<u>c eu (%)</u>	<u>CL</u>	<u>c PD (%)</u>	<u>c PD CL</u>	
AroulorT1X16	1	X.99X	99	1	1.X3	1X3	(46T1/9)	3.96	(h 3X)	
AroulorT1/6X	1	X.94X	94	1	X.95X	95	(4] T134)	3.14	(h 3X)	
Surrogates										
Deuau- loro7ip- enyl (R2rr)	1.XX	94	94	1.XX	95	95	(4XT13])	3.14		

#### **Batch Information**

Analytiual Batu- : XGC9464 Analytiual s et- od: SW8082A InRtr2ment: Agilent 7890B GC ECD SW F AnalyRt: S.G Prep Batu-: XXX36075 Prep s et- od: SW3520C Prep Date&ime: 08/17/2016 15:07 Spike Init x t.8/ol.: 1 2g& EMraut Vol: 1 mL D2pe Init x t.8/ol.: 1 2g& EMraut Vol: 1 mL

Print Date: X98 8 X16 ]:/4:]]Ps

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/ XX x eR Potter Drive Anu- orage, AK 9] ] 10 t 9X5.] 6/ ./ 343 f 9X5.] 61.] 3X1 www.2RRgRuom

# Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

- Method Blank								
Blank ID: MB for HBN 174 Blank Lab ID: 1047274	Blank ID: MB for HBN 17423[ 4 X / / 60[ 125] Blank Lab ID: 1047274		Matrix: Water (Surface, Eff., Ground)					
QC for Samples: 11[ 4[ 09332, 11[ 4[ 09335, 1	1[ 4[ 09339							
Results by <b>AK102</b>		·						
<u>Parameter</u> Diesel RanAe OrAanics	<u>Results</u> 3.033U	<u>LOQ6CL</u> 3.[ 33	<u>DL</u> 3.153	<u>Units</u> mA6L				
Surrogates - a gndrostane (surr)	77.[	[ 38123		h				
3atch Information								
gnalytical Batc% / FC12729 gnalytical Met‰d: gT132 Instrument: gAilent 7593B R gnalyst: NRO gnalytical Date6/ime: 5&4&31[ 12:2-:33PM		Prep Ba Prep Me Prep Da Prep Ini Prep Ex						

#### Math

SG

Print Date: 396326231[ -: 24:-7PM

SGS Nort%gmerica Inc.



Blank Spike ID: LCS for HBN 1164639 [VVV361X25 Blank Spike La] ID: 134bXb7 Date Analyzed: 028448016 1X:37 Spike D/ pliuate ID: LCSD for HBN 1164639 [VVV361X25 Spike D/ pliuate La] ID: 134bXb6 s atriM x ater W/ rfaue(, fft . ro/ ndG

g C for SaP pleR 116463900X( 1164639002( 1164639009

_ceR′ ltR] y <b>AK102</b>									
		Blank Spike	W79%8LG	S	pike D/ pliu	uate ₩7%8LG			
<u>) araP eter</u>	<u>Spike</u>	<u>c eR It</u>	<u>ceuWh</u> G	<u>Spike</u>	<u>ceR⁄lt</u>	<u>ceuWh</u> G	<u>CL</u>	<u>c)DWm</u> G	<u>c) D CL</u>
DieRel c an & Qr aniuR	XO	1219	97	XO	1216	93	Wb7C1X7G	1昼0	W X0 G
Surrogates									
7a AndroRtane ₩ rrG	0昼	9X	9X	0译	9XEX	9X	W60C1X0G	0EXX	
Batch Information									
Analytiual Batu<: <b>XFC12729</b> Analytiual s et <od: <b="">AK102 InRtr/ P ent: <b>Agilent 7890B R</b> AnalyRt: <b>NRO</b></od:>				) rej ) rej ) rej Spił D/ p	o Batu<: XX o s et <od: o Date3hiP c Init x tBl e Init x tBl</od: 	XX36128 SW3520C e: 08/23/2010 Fole X0 P% fole X0 P%	6 16:57 , Mraut To , Mraut Tol:	I: 1 PL 1 PL	

) rint Date: 0980X8X016 7:X4:72) s

-Method Blank								
Blank ID: MB for HBN 1742 Blank Lab ID: 1347274	064 [XXX/36128]	Matrix: Water (Surface, Eff., Ground)						
QC for Samples: 1164639002, 1164639008, 11	64639009							
Results by <b>AK103</b>								
<u>Parameter</u> Residual Range Organics	<u>Results</u> 0.196J	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L				
Surrogates n-Triacontane-d62 (surr)	79.7	60-120		%				
Batch Information								
Analytical Batch: XFC12729 Analytical Method: AK103 Instrument: Agilent 7890B R Analyst: NRO Analytical Date/Time: 8/24/2016 12:25:00PM		Prep Bat Prep Me Prep Da Prep Init Prep Ext	C 1016 4:57:43PM 0 mL					

Print Date: 09/02/2016 5:24:59PM

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Blank Spike ID: LCS for HBN 1164639 [VVV361X25 Blank Spike La] ID: 134bXb7 Date Analyzed: 028448/016 1X:37 Spike D/ pliuate ID: LCSD for HBN 1164639 [VVV361X25 Spike D/ pliuate La] ID: 134bXb6 s atriM x ater W/ rfaue(, fft . ro/ ndG

g C for SaP pleR 116463900X( 1164639002( 1164639009

_ceR/ ltR] y <b>AK102</b>									
		Blank Spike	W79%8LG	S	spike D/ pliu	uate ₩7%8LG			
<u>) araP eter</u>	<u>Spike</u>	<u>c eR/ It</u>	<u>ceuWh</u> G	<u>Spike</u>	<u>c eR⁄ It</u>	<u>ceuWh</u> G	<u>CL</u>	<u>c)DWm</u> G	<u>c) D CL</u>
ceRd/alcan%eQr%aniuR	XO	1212	94	XO	19日	96	W60C1X0G	XED0	W X0 G
Surrogates									
n@riauontane@l6X WR rrG	0国	9b	9b	0昼	97	97	W60C1X0G	XE10	
Batch Information									
Analytiual Batuh: <b>XFC17978</b> Analytiual s ethod: <b>AK102</b> InRtr/ P ent: <b>Agilent 9R80B N</b> AnalyRt: <b>ON3</b>				) rej ) rej ) rej Spił D/ p	o Batuh: XX o s ethod: o Date&iP o ke Init x t⊞ e Init x t⊞	XX2617R SW2570C e: 0R/72/701 ole X0 P % ole X0 P %	6 16:59 , Mraut To , Mraut Tol	I: 1 PL : 1 PL	

) rint Date: 0980X8X016 7:X7:01) s

2061 [XXX/38133]	Ma9,t:i a9er xSWfa(eucffE).roWhGd					
	·					
<u>) esW9s</u>	LUQ/CL	DL	<u>y n,9s</u>			
0B245	0B00	0 <b>⊟</b> g0	mP/L			
gJĒg	80T120		%			
74J	Orep Ba	a9(A: XXX38133				
	Orep M	e9AoG Si 3J200				
NID SK C N	Orep Da Orep In	ase/v,me: g/24/2 9ali 97KolF 2.1	018 6:07:12-M Cml			
		Gal Okal dual				
	2061 [XXX/38133] ) esVWs 0E245 gJEg '4J 2 hID SK c h	2061 [XXX/38133] Ma9; ) esW9s LUQ/CL 0E245 0E00 gJEg 80T120 4J Crep Ba Crep M hID SK c h Crep Da	2061 [XXX/38133]       Ma9,t:i a9er xSWfa         ) esW9s       LUQ/CL       DL         0B245       0B00       0Eg0         gJbg       807120         '4J       Orep Ba9 A: XXX38133         Orep Me9AoG Si 3J200       Orep Da9e/V,me: g/24/2         hID SK c h       Orep Da9e/V,me: g/24/2	2061 [XXX/38133] Ma9;t:i a9er xSWffa(euc ffEi.roWhOd <u>) esW9s</u> 0E3245 <u>LUQ/CL</u> <u>DL</u> <u>yn,9s</u> 0E3245 0E800 0Elg0 mP/L gJEg 80T120 %		

SGS



Blank Spike ID: LCS for HBN 1164639 [VVV36133X Blank Spike La2 ID: 13454] 5 Dabe 7 nalt Aey: ] zd04d0] 16 00:3z Spike D8pli/ abe ID: LCSD for HBN 1164639 [VVV36133X Spike D8pli/ abe La2 ID: 13454] z Rabris: Maber xS8rfa/ eW ff,WEro8ny.

%C for Sa) plec: 1164639]]1

u ec8lbc 2t AK102									
		Blank Spike	ex)mdL.	5	Spike D8pli/	abex)mdL.			
<u>Gara) eber</u>	<u>Spike</u>	<u>u ec8lb</u>	<u>ue/xP.</u>	<u>Spike</u>	<u>u ec8lb</u>	<u>ue/xP.</u>	<u>CL</u>	<u>u GD xP .</u>	<u>u GD CL</u>
Diecel u anme g rmani/ c	0]	01,3	1] 6	0]	01,z	1] 9	x5QC10Q.	0,4]	× 0].
Surrogates									
Qa 7 nyrocbane xc8rr.	],4	1] 6	1] 6	] ,4	1] Q	1] Q	x6]Cl0].	] ,z3	
Batch Information									
7 nalt b/ al Bab/<: XFC1274	.5			Gre	p Bab/<: XX	XX36133			
	FID SV F F			Gre	p Reb-oy. n Dahedhi) (	5773520C e [.] 08/24/201	6 09.07		
7 nalt cb NRO	TID OV LT			Spil	ke InibMbdī	ol.: 0] ) md	L (sbra/bTo	ol: 1) L	
				D8p	e InibMbdT	ol,: 0]) md	(sbra/bTol	l: 1) [´] L	

GrinbDabe: ] 90 000] 16 Q0Q] 4GR

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LNG Facilities Groundwater Quality
Sampling and Testing Report - Event 2
USAL-FG-GRZZZ-00-002016-004 Rev. 0
16-Dec-16

-Method Blank		·			
Blank ID: MB for HBN 17420 Blank Lab ID: 1347408	061 [XXX/38133]	Ma9,t	∶ia9erxSWnfa(	eucffEu.roWnGd	
QC for Samples: 1184836001					
		1			
) esvWs bRAK103 <u>Oarame9er</u> ) es QMal ) an Pe UrPan (s	<u>) esW9s</u> 012845		<u>DL</u> 0月a0	<u>y n.9s</u> mP/l	
Surrogates		04900	0190		
nJ-r,a(on9aneJG82 xs₩rd	%8%	80J120		Т	
Batch Information					
AnalR9(al Ba9(h: XFC1274 AnalR9(al Me9noG AK103 Ins9Wmen9 HO7%60A AnalR99 N) U AnalR9(al Da9e/- ,me: %24/	FID SV c F /2018 10:17:00OM	Orep Ba9 Orep Me9 Orep Da9 Orep In,9 Orep ct 9	((h: XXX38133 9noG Si 3g20C 2e/-,me: %24/20 rali 9£VolE 2g0 ra(9Vol: 1 mL	18 6:07:12AM mL	

Or,n9Dase: 06/02/2018 g:2g:08OM

SGS



Blank Spike ID: LCS for HBN 1164639 [VVV36133X Blank Spike La2 ID: 13454] 5 Dabe 7 nalt Aey: ] zd04d0] 16 00:3z Spike D8pli/ abe ID: LCSD for HBN 1164639 [VVV36133X Spike D8pli/ abe La2 ID: 13454] z Rabris: Maber xS8rfa/ eW ff,WEro8ny.

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CONTACT:	Jason Gray	PHONE #: 26	1-6965		Sectio	n 3				reservati	av av				]	Page 77 of
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200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

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http://www.sgs.com/terms-and-conditions

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2

Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-D (See attached Sample Receipt Form) Data Deliverable Requirements: ABSENT Chain of Custody Seal: (Circle) REMARKS/ of LOC ID lub ALS WO Page _ BROKEN 945 LVL2 Requested Turnaround Time and/or Special Instructions: INTACT Instructions: Sections 1 - 5 must be filled out. Omissions may delay the onset of analysis. (See attached Sample Receipt Form) DOD Project? Yes No Preservative or Ambient [ ] Temp Blank °C: Section 4 Cooler ID: SGS North America Inc. CHAIN OF CUSTODY RECORD Chlorophyll-a 3 y Pres: Type: Comp (Multi-incre-mental) Section 3 Received For Laboratory By: Grab Ň 0 0 * U 0 Z 20 Received By: Received By: Received By: MATRIX/ MATRIX CODE 2015 SLR General Water Water 105.00148.16001 Water Water Water Water Water Water Water Water KEJOHNSON @ FUGD, LON TIME HH:MM 1625 igray@slrconsulting.com 2110 145 264-6965 Time Time Time Time DATE mm/dd/yy 08-10-16 08-10-16 0101-80 PHONE #: QUOTE #: Date Project #: Date E-MAIL: P.O.#: Date Date SAMPLE IDENTIFICATION Kylpgomison 0180-1-MO 9/80-Kenai Wells - July APT SLR International SLR International Jason Gray 0W-2 Jason Gray Event A Relinquished By: (1) Relinquished By: (2) Relinquished By: (3) Relinquished By: (4) G REPORTS TO: RESERVED for lab use INVOICE TO: CONTACT: PROJECT CLIENT: NAME: Section 1 Section 2 Section 6 E-201

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2

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SGS	CLIENT:	CONTACT:	PBO IECT	ection NAME:	CO REPORTS TO	INVOICE TO: SLI	RESERVED for lab use	X A-0	(J) A0	NIO A	SUV A L	- J-Y (L) 000	10 A-C	A KI		3		Relinquished	Kyle Jon.	ion 5 Relinquished	C Relinquished		Relinquished		[ ] 200 W. Po

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E-206

	AIRPORT O	E E	NA		08/11/16	08:05	097165	80	LI 8 7110897mp	) NG Facilities Groundw bling and Testing Repo	Confidential ater Quality ort - Eve <b>ntesh</b>
SHIPPE	R'S NAME	. ADD	JO	S & PHON	ie ·	SHIPPI	ER'S ACCOUNT NUMBER	NOT AIR WAYBILL		G-GRZZZ-00-002016 4700 Old Interna Anchorage, Alasi	-004 Rev. 0 tiq6aDeipoqt6 Road ka 99502
KEN		JU:	ADDF STI	RESS & PH	AK 996	11 CONSIG	5208081220 NEE'S ACCOUNT NUMBE	It is agreed that the good (except as noted) for car THE COMPANIES TARI CONCERNING CARRIE liability by declaring a high Received in Good Condition	is described herein a riage SUBJECT TO T FFS. THE SHIPPER RS' LIMITATION OF gher value for carriag	re accepted in apparent good HE CONDITIONS OF CONT S ATTENTION IS DRAWN T LIABILITY, Shipper may incr e and paying a supplemental	order and condition RACT AS LISTED IN O THE NOTICE ease such limitation of charge if required.
200	WEST	PO	TTE	RRD				Place	SHIPMENT MAY BE DI	Dete	CARRIER AS PER TARIFF
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annen.	BY FIF	DEST	INATI Je	ON				COMMENTS			
No. Of Pieces Rcp	Gross Weight	kg Ib	Re	Com	modity 1 No.	Chargeable Weight	Rate/Charge	Total		Nature and Quantity of Goo	qê
1	44	١	F	rush		1	\$54.59	\$54.59	samples		
1	50	1	F	rush		• 1	\$54.59	\$54.59	samples		
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	\$18	3.76	Ľ	PEDERAL E	ACISE TAX						
	\$0.	00 00	TAL	THER CHA	RGES DUE AG	ENT		*3		HAZMAT No	
		TOT	AL O	THER CHAP	GES DUE CAR	RIER	Shipper certifies th COMPANIES TAR	at the particulars on the face IFFS, accepts that carrier's lia	hereof are correct, ag ability is limited as sta	prees to the CONDITIONS AS ted in the companies tariffs a	LISTED IN THE nd accepts such value
	LIOTAL \$31	PREP/	)		Ш	OTAL COLLECT	unless a higher va part of the consign by air according to	lue for carriage is declared or ment contains restricted articl applicable national governme	h the face hereof subj les, such part is desc antal regulations, and	ect to an additional charge ar ribed by name and is in prope for international shipments, t	nd that insofar as any or condition for carriage the current International
STATION ANCHOR ANIAK - ( BARROV BETHEL DEADHO Printer	NUMBERS AGE - (907) 907) 875-457 V - (907) 852- -(907) 543-38 RSE - (907) d at 08:13	243-27 72 5300 325 559-92	'61 22 on 8/	11/2016	FAIRBANKS GALENA - (94 KOTZEBUE NOME - (907 ST. MARYS UNALAKLEE at ENA-FRT	- (907) 450-7250 77) 658-1875 (907) 442-3020 ) 443-7595 (907) 438-2247 T - (907) 624-3595 T 1 0.106.2.2	Air Transport Asso Paid By Ship Printed Name and Signature	ciation's Restricted Articles R PET Title	tegulations.		

# **Consignee Copy**

1

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

		1	116	<b>46</b> 3	39		1 1	64639	
Review Criteria	Y/I	N (yes/	/no)		Exc	eptions	Noted b	elow	
					exemption perr	nitted if sar	mpler hand	d carries/delivers.	
Were Custody Seals intact? Note # 8	location	Y	1			1F1B			
COC accompanied	samples?	Y							
**exemption perm	itted if ch	illed &	. collect	ed <8	hrs ago or chlling no	ot required	(i.e., waste	e, oil)	
·		Y	Cool	er ID:	1	@	3.7	°C Therm ID:	242
		Y	Cool	er ID:	2	@	1.2	°C Therm ID:	200
Temperature blank compliant* (i.e., 0-6 °C a	fter CF)?	Y	Cool	er ID:	3	@	5.3	°C Therm ID:	200
		Y	Cool	er ID:	4	@	0.3	°C Therm ID:	200
		Υ	Cool	er ID:	5	@	1.2	°C Therm ID:	D7
*If >6°C, were samples collected <8 hou	rs ago?	<u> </u>							
If <0°C, were sample containers i	ce free?	Y							
If samples received <u>without</u> a temperature blank, the "cooler temperat	ure" will		<u> </u>						
be documented in lieu of the temperature blank & "COOLER TEMP" will	l be								
obtained, note "ambient" or "chilled".	pcanoc								
Note: Identify containers received at non-compliant temperature . Us	e form		<u> </u>						
FS-0029 if more space is needed.									
			Note:	Refer t	to form F-083 "Sam	ple Guide"	for hold ti	mes.	
Were samples received within he	old time?	Y							
Do samples match COC** (i.e.,sample IDs,dates/times co	llected)?	Y							
**Note: If times differ <1hr, record details & login	per COC.		[]						
Were analyses requested unam	oiguous?	Y							
			ſ						
			L		***Exemption	nermitted f	or metals (	(e.g.200.8/6020A),	
Were proper containers (type/mass/volume/preservative*	**)used?	Y	1				01	<u></u>	
IF APPLICABLE	,	<u> </u>	ľ						
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with	samples?		h						
Were all VOA vials free of headspace (i.e., bubbles	≤ 6mm)?	¥	1F	1 had	bubble greater th	an 6mm			
Were all soil VOAs field extracted with Mer	OH+BFB?	Y		1.1.1.	000010 9.0010. 0.	ion on the			
Note to Client: Any "no" answer above indicate:	s non-cor	nplianc	ce with	standa	ard procedures and	may impac	t data qua	ility.	
Addit	ional n	ator (	fann	licabl					
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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

## **Sample Containers and Preservatives**

<u>Container Id</u>	Preservative	<u>Container</u> <u>Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container</u> Condition
1164639001-A	No Preservative Required	ОК	1164639002-R	HCL to pH < 2	ОК
1164639001-B	No Preservative Required	ОК	1164639002-S	No Preservative Required	OK
1164639001-C	No Preservative Required	ОК	1164639002-T	No Preservative Required	OK
1164639001-D	HNO3 to pH < 2	ОК	1164639002-U	No Preservative Required	OK
1164639001-E	HCL to pH < 2	ОК	1164639002-V	No Preservative Required	OK
1164639001-F	HCL to $pH < 2$	ОК	1164639002-W	No Preservative Required	OK
1164639001-G	HCL to $pH < 2$	ОК	1164639002-X	No Preservative Required	OK
1164639001-H	HCL to $pH < 2$	ОК	1164639002-Z	No Preservative Required	OK
1164639001-I	No Preservative Required	ОК	1164639003-A	HCL to $pH < 2$	OK
1164639001-J	No Preservative Required	ОК	1164639003-B	HCL to $pH < 2$	OK
1164639001-K	HCL to $pH < 2$	ОК	1164639003-C	HCL to $pH < 2$	OK
1164639001-L	HCL to $pH < 2$	ОК	1164639004-A	HCL to $pH < 2$	OK
1164639001-M	HCL to $pH < 2$	ОК	1164639004-B	HCL to $pH < 2$	OK
1164639001-N	HCL to $pH < 2$	ОК	1164639004-C	HCL to $pH < 2$	OK
1164639001-0	HCL to $pH < 2$	ОК	1164639005-A	HCL to $pH < 2$	OK
1164639001-P	H2SO4 to pH < 2	ОК	1164639006-A	HNO3 to pH < 2	OK
1164639001-Q	No Preservative Required	ОК	1164639006-B	No Preservative Required	OK
1164639001-R	HCL to $pH < 2$	ОК	1164639006-C	No Preservative Required	OK
1164639001-S	No Preservative Required	ОК	1164639007-A	HNO3 to pH < 2	OK
1164639001-T	No Preservative Required	ОК	1164639007-B	No Preservative Required	OK
1164639001-U	No Preservative Required	ОК	1164639007-C	No Preservative Required	OK
1164639001-V	No Preservative Required	ОК	1164639008-A	No Preservative Required	OK
1164639001-W	No Preservative Required	ОК	1164639008-B	No Preservative Required	OK
1164639001-X	No Preservative Required	ОК	1164639008-C	No Preservative Required	OK
1164639001-Z	No Preservative Required	ОК	1164639008-D	HNO3 to pH < 2	OK
1164639002-A	No Preservative Required	ОК	1164639008-E	No Preservative Required	OK
1164639002-B	No Preservative Required	ОК	1164639008-F	HCL to $pH < 2$	OK
1164639002-C	No Preservative Required	ОК	1164639008-G	HCL to pH < 2	OK
1164639002-D	HNO3 to $pH < 2$	ОК	1164639008-H	HCL to $pH < 2$	OK
1164639002-E	HCL to $pH < 2$	OK	1164639008-I	No Preservative Required	OK
1164639002-F	HCL to $pH < 2$	ОК	1164639008-J	No Preservative Required	OK
1164639002-G	HCL to $pH < 2$	ОК	1164639008-K	HCL to $pH < 2$	OK
1164639002-H	HCL to $pH < 2$	ОК	1164639008-L	HCL to $pH < 2$	OK
1164639002-I	No Preservative Required	ОК	1164639008-M	HCL to $pH < 2$	OK
1164639002-J	No Preservative Required	ОК	1164639008-N	HCL to $pH < 2$	OK
1164639002-K	HCL to $pH < 2$	ОК	1164639008-0	HCL to $pH < 2$	OK
1164639002-L	HCL to $pH < 2$	ОК	1164639008-P	No Preservative Required	OK
1164639002-M	HCL to $pH < 2$	ОК	1164639009-A	No Preservative Required	OK
1164639002-N	HCL to $pH < 2$	ОК	1164639009-B	No Preservative Required	OK
1164639002-0	HCL to $pH < 2$	ОК	1164639009-C	No Preservative Required	ОК
1164639002-P	H2SO4 to pH < 2	ОК	1164639009-D	HNO3 to pH < 2	ОК
1164639002-Q	No Preservative Required	ОК	1164639009-E	No Preservative Required	ОК

8/11/2016

Container Id	<u>Preservative</u>	<u>Container</u>
		<u>Condition</u>
1164639009-F	HCL to $pH < 2$	ОК
1164639009-G	HCL to $pH < 2$	OK
1164639009-H	HCL to $pH < 2$	OK
1164639009-I	No Preservative Required	OK
1164639009-J	No Preservative Required	OK
1164639009-К	HCL to $pH < 2$	OK
1164639009-L	HCL to $pH < 2$	OK
1164639009-M	HCL to $pH < 2$	OK
1164639009-N	HCL to $pH < 2$	OK
1164639009-0	HCL to $pH < 2$	OK
1164639009-P	No Preservative Required	OK
1164639010-A	HNO3 to pH < 2	OK
1164639011-A	HNO3 to $pH < 2$	OK
1164639012-A	HCL to $pH < 2$	OK
1164639012-В	HCL to $pH < 2$	OK
1164639012-C	HCL to $pH < 2$	OK
1164639013-A	HCL to $pH < 2$	OK
1164639013-В	HCL to $pH < 2$	OK
1164639013-C	HCL to $pH < 2$	OK
1164639014-A	HCL to $pH < 2$	OK
1164639015-A	HNO3 to $pH < 2$	OK
1164639015-B	No Preservative Required	OK
1164639016-A	HNO3 to $pH < 2$	OK
1164639016-B	No Preservative Required	OK

Confidential
Preservative Facilities Groundwate Ortalityer
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16-Dec-16

Container Id

## Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

 $\mathsf{OK}$  - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM- The container was received damaged.

FR- The container was received frozen and not usable for Bacteria or BOD analyses.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

8/11/2016

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626 **T**:+1 360 577 7222 **F**:+1 360 636 1068 www.alsglobal.com

Analytical Report for Service Request No: K1609300

August 24, 2016

Julie Shumway SGS Environmental Services, Inc. 200 West Potter Drive Anchorage, AK 99518

## RE: Kenai Wells-July APT Event A

Dear Julie,

Enclosed are the results of the sample(s) submitted to our laboratory August 12, 2016 For your reference, these analyses have been assigned our service request number **K1609300**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Jener mallach for

Howard Holmes Project Manager





ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626 **T**: +1 360 577 7222 **F**: +1 360 636 1068 www.alsglobal.com

## **Table of Contents**

Acronyms Qualifiers State Certifications, Accreditations, And Licenses Chain of Custody General Chemistry

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M MCL	Modified Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH tr	Total Petroleum Hydrocarbons Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

- Inorganic Data Qualifiers
- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- $i \,$   $\,$  The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

#### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

#### **Organic Data Qualifiers**

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
   DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

#### Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

## ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Web Site	Number
http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
http://www.azdhs.gov/lab/license/env.htm	AZ0339
http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Not available	-
http://www.pjlabs.com/	L16-57
http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPer mitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Not available	WA01276
http://www.health.state.mn.us/accreditation	053-999-457
http://www.dphhs.mt.gov/publichealth/	CERT0047
http://ndep.nv.gov/bsdw/labservice.htm	WA01276
http://www.nj.gov/dep/oqa/	WA005
http://www.dwqlab.org/	605
http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator yAccreditation/Pages/index.aspx	WA100010
http://www.scdhec.gov/environment/envserv/	61002
http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
http://dnr.wi.gov/	998386840
http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
www.alsglobal.com	NA
	Web Site           http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx           http://www.azdhs.gov/lab/license/env.htm           http://www.adeq.state.ar.us/techsvs/labcert.htm           http://www.edph.ca.gov/certlic/labs/Pages/ELAP.aspx           http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm           http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm           Not available           http://www.denix.osd.mil/edqw/Accreditation/PaccreditedLabs.cfm           http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm           http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm           http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm           http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm           http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm           http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm           http://www.delab.com/           http://www.delab.com/           http://www.delab.com/           http://www.health.state.mn.us/accreditation           http://www.denix.gov/publichealth/           http://www.denix.gov/publichealth/           http://www.denix.gov/publichealth/           http://www.deq.state.ok.us/CSDnew/labcert.htm           http://www.deq.state.ok.us/CSDnew/labcert.htm           http://public.health.oregon.gov/LaboratoryServices/Environment

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16



# Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0

16-Dec-16

1164639 Chlorophyll.xls 217 of 221

ALS				S	LNG Facil Sampling and AL-FG-GRZZ	Confic ities Groundwater C I Testing Report - E ZZ-00-002016-004 I 16-I	lential Quality vent 2 Rev. 0 mc ¹ 16	<u> </u>
SCOULD A	Cooler	Receipt and	Preservati	on Form	1	1200		
Client <u>295 North Ameri</u>	ca, Inc.	1.	Service F	Request K1	6	19300	<u></u>	
Received: <u>8/12/16</u> Ope	ned: 8/12/	16 By:	Q	Unloade	d: <u>8/14</u>	2/16_By:_	Uq_	
1. Samples were received via? U	SPS Fed Ex	UPS	DHL PD.	X Couri	ier Han	d Delivered		
2. Samples were received in: (circle)	Cooler	Box Er	ivelope	Other			NA	
3. Were <u>custody seals</u> on coolers?	NA C	N 🔇	If yes, how r	nany and wł	nere?	Front, 1 Be	ck	<del></del>
If present, were custody seals inta	ct?	V N	If present	, were they s	signed and o	dated?	$\Theta$	N
Raw Corrected, Raw Co	Frected Corr.	Thermometer	Cooler/C	OC ID		Tracking Numbe	r (NA	Filed
-0.8 -0.9 2-4 Z	3 -0.1	369					<u>~</u>	
-0.1 -0.2 1.8 1	7 -0.1	323						
		<u>}</u>			·			
4 Proking motorial Inserts Pag	nias Pubble II	2 Var Cal Back	Wat Ioo	Dmi Lag	Classian			<u> </u>
<ul> <li>6. Were samples received in good c If applica</li> <li>7. Were all sample labels complete (</li> <li>8. Did all sample labels and tags agr</li> <li>9. Were appropriate bottles/contained</li> <li>10. Were the pH-preserved bottles (</li> <li>11. Were VOA vials received withon</li> <li>12. Was C12/Res negative?</li> </ul>	ondition (tempera able, tissue sampl i.e analysis, press ee with custody p ers and volumes n see SMO GEN SOF ut headspace? In	ature, unbroken) les were receive ervation, etc.)? papers? <i>Indicate</i> received for the P) received at the adicate in the tab <b>Sample ID on C</b> T - P - 5	? Indicate in d: Frozen e major discretests indicated e appropriate ble below.	n the table be <b>Partially</b> epancies in the d? pH? Indicat	elow. Thawed he table on te in the tab ELim	NA Thawed NA page 2. NA NA le below NA NA NA NA NA NA NA NA NA NA	Y Y Y Y Y Y	N N N N N N N N N N N N N N N N N N N
Sample ID	Bottle Count Bottle Type	Out of Head- Temp space B	roke pH	Reagent	Volume added	Reagent Lot Number	Initials 1	ime
	······································							
Notes, Discrepancies, & Resolut	tions: <u>Did</u>	not rec	202	coc	for St	Imple WE	0816	<u> </u>
Emarces Cac	, not A	igned	SHO	RTH	OLD			

P	C
Page	of
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7/25/16

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16



## General Chemistry

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

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#### ALS Group USA, Corp. dba ALS Environmental

Analytical Report

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Client:	SGS Environmental Services, Inc.
Project:	Kenai Wells-July APT Event A
Sample Matrix:	Water
Analysis Method: Prep Method:	SM 10200 H Method

Service Request: K1609300 Date Collected: 08/10/16 Date Received: 08/12/16

Units: mg/m3 Basis: NA

**Chlorophyll A** 

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
OW-4	K1609300-001	ND U	2.2	0.9	1	08/17/16 18:07	8/17/16	
OW-2	K1609300-002	ND U	2.7	1.1	1	08/17/16 18:07	8/17/16	
Method Blank	K1609300-MB1	ND U	0.80	0.30	1	08/17/16 18:07	8/17/16	
Method Blank	K1609300-MB2	ND U	0.80	0.30	1	08/17/16 18:07	8/17/16	

			ALS dba	Group USA ALS Environi QA/QC Repo	<b>A, Corp.</b> mental	LNG Fa Sampling a USAL-FG-GR	cilities Ground nd Testing Re ZZZ-00-0020	Confidentia dwater Quality port - Event 2 16-004 Rev. 0 16-Dec-10	ll y 2 0 6
Client:	SGS Enviro	onmental Services,	Inc.			Service <b>F</b>	Request:	K160930	0
Project:	Kenai Well	s-July APT Event	А			Date Ana	alyzed:	08/17/16	
Sample Matrix:	Water	-				Date Ext	racted:	NA	
		Dup	licate Lab General (	Control Sa Chemistry I	ample Summary Parameters				
Analysis Method:	SM 10200 I	Н				Units:		mg/m3	
Prep Method:	None					<b>Basis:</b>		NĂ	
-						Analysis	Lot:	510717	
Lab Control SampleDuplicate Lab Control SampleK1609300-LCSK1609300-DLCS									
Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amoun	t % Rec	% Rec Limits	RPD	<b>RPD</b> Limit
Chlorophyll A	2220	2160	103	2190	2160	102	88-113	1	20



	La	aboratory Report of Analysis
To: SLR Alas 2700 Ga Anchorag (907)222	ska-Anchorage mbell St Suite 200 ge, AK 99503 -1112	
Report Number: <b>11646</b>	Re re 72	evised Report - This report has been reissued to include the sample eceipt form. No data has changed.
Client Project. Kenal	wells - Aug APT Event A	A
Dear Jason Gray,		
Enclosed are the results samples and associated Environmental Laboratory retained in our files for a intended to be used in the samples submitted to our report unless other archiv	of the analytical services QC as applicable. The say Accreditation Conference period of ten years in the eir entirety and SGS is no a laboratory will be retaine ving requirements were in	performed under the referenced project for the received amples are certified to meet the requirements of the National ce Standards. Copies of this report and supporting data will be event they are required for future reference. All results are of responsible for use of less than the complete report. Any ed for a maximum of fourteen (14) days from the date of this included in the quote.
If there are any questions 562-2343. We will be ha	about the report or service ppy to answer any question	ices performed during this project, please call Justin at (907) ions or concerns which you may have.
Thank you for using SGS again on any additional a	North America Inc. for yo nalytical needs.	our analytical services. We look forward to working with you
Sincerely, SGS North America Inc.	Je A	Justin Nelson 2016.10.04
2	GGS North America Inc. Environmental Services – Alaska Division roject Manager	14:51:29 -08'00'
Justin Nelson Project Manager Justin.Nelson@sgs.com	Date	
Print Date: 09/02/2016 3:16:21P	M	
SGS North An	t 907.562.2343	er Drive, Anchorage, AK 99518 3 f 907.561.5301 www.us.sgs.com
	I I	Member of SGS Group

SGS



#### **Case Narrative**

#### SGS Client: SLR Alaska-Anchorage SGS Project: 1164672 Project Name/Site: Kenai Wells - Aug APT Event A Project Contact: Jason Gray

Refer to sample receipt form for information on sample condition.

#### TPW-5-0816 (1164672001) PS

8270D SIM - Pesticide LCS/LCSD recovery for endosulfan I (61.3%/52.2%) does not meet QC criteria. Sample was re-extracted outside of hold time with LCS/LCSD within QC criteria. Sample results are comparable. 2540B - Total Volatile Solids – Analyzed past hold time die to a laboratory error. Chlorophyll-a was anlayzed by ALS of Kelso, WA.

#### 1164786001DUP (1345796) DUP

2540D - Total Suspended Solids - Sample received and analyzed past hold time.

#### 1164672001DUP (1346468) DUP

2540B - Total Volatile Solids - Analyzed past hold time due to a laboratory error. Sample duplicate RPD was outside of acceptance limits. There was insufficient volume remaining for reanalysis.

#### LCS for HBN 1741698 [XXX/36071 (1345540) LCS

8270D SIM - Pesticide LCS recovery for endosulfane I (61.3%) does not meet QC criteria.

#### LCSD for HBN 1741698 [XXX/3607 (1345541) LCSD

8270D SIM - Pesticide LCSD recovery for endosulfane I (52.2%) does not meet QC criteria.

#### LCSD for HBN 1741752 [VXX/2936 (1345773) LCSD

8260B - LCS/LCSD RPDs for acetone (30.2%) and 2-butanone (MEK) (21.4%) do not meet QC criteria. These analytes were not detected above the LOQ in the associated samples.

#### MB for HBN 1742126 [XXX/36137] (1347540) MB

AK103 - RRO is detect in the MB greater than one half the LOQ, but less than the LOQ.

#### 1164672002(1346128MS) (1346129) MS

200.8LL - Metals MS recovery for zinc (50%) does not meet QC criteria. The post digestion spike was successful.

#### 1164728001MS (1347964) MS

4500N-D - Total Kjeldahl Nitrogen - MS recovery is outside of QC criteria (149%). Refer to LCS for accuracy requirements.

#### 1164672002(1346128MSD) (1346130) MSD

200.8LL - Metals MS recovery for iron (138%) does not meet QC criteria. The post digestion spike was successful.

#### 1164728001MSD (1347965) MSD

4500N-D - Total Kjeldahl Nitrogen - MSD recovery is outside of QC criteria (139%). Refer to LCS for accuracy requirements.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

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Report of Manual Integrations									
Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason					
SW8260B									
1164672001	TPW-5-0816	VMS16076	4-Isopropyltoluene	SP					
1164672001	TPW-5-0816	VMS16076	Trichlorofluoromethane	SP					
SW8270D									
1345543	LCS for HBN 1741699 [XXX/36072	XMS9556	1-Chloronaphthalene	RSP					
1345544	LCSD for HBN 1741699 [XXX/3607	XMS9556	1-Chloronaphthalene	RSP					

Manual Integration Reason Code Descriptions

#### Code Description

- O Original Chromatogram
- M Modified Chromatogram
- SS Skimmed surrogate
- BLG Closed baseline gap
- RP Reassign peak name
- PIR Pattern integration required
- IT Included tail
- SP Split peak
- RSP Removed split peak
- FPS Forced peak start/stop
- BLC Baseline correction
- PNF Peak not found by software

All DRO/RRO analysis are integrated per SOP.

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#### Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <<u>http://www.sgs.com/en/Terms-and-Conditions.aspx></u>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
В	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
Μ	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.
Sample summaries which All DRO/RRO analyses are	include a result for "Total Solids" have already been adjusted for moisture content.

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Note:

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#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GR222-00-002016-004 Rev. 0 16-Dec-16

Sample Summary										
Client Sample ID	Lab Sample ID	Collected	Received	Matrix						
TPW-5-0816	1164672001	08/11/2016	08/11/2016	Water (Surface, Eff., Ground)						
TPW-5-0816	1164672002	08/11/2016	08/11/2016	Water (Surface, Eff., Ground)						
TB-1-1405	1164672003	72003 08/11/2016 08/11/2016 Water (Surface, Eff., Gr								
TB-2-1405	1164672004	08/11/2016	08/11/2016	Water (Surface, Eff., Ground)						
TB-3-1405	1164672005	672005 08/11/2016 08/11/2016 Water (Surface, Eff., Gro								
Method	Method Desc	cription								
SM21 2320B	Alkalinity as (	CaCO3 QC								
SM21 4500-NH3 G	Ammonia-N (	(W) SM21 4500-N	H3 G							
EPA 410.4	Chemical Ox	ygen Demand								
SM21 2340B	Dissolved Ha	ardness as CaCO3	B ICP-MS-LowLv							
EPA 1631 E	Dissolved Lo	w Level Mercury E	EPA 1631							
SM 5310B	Dissolved Or	Dissolved Organic Carbon								
AK102	DRO/RRO Low Volume Water									
AK103	DRO/RRO Lo	DRO/RRO Low Volume Water								
AK101	Gasoline Range Organics (W)									
EPA 300.0	Ion Chromato	Ion Chromatographic Analysis								
EPA 300.0	Ion Chromato	ographic Analysis	(W)							
EPA 1631 E	Low Level Me	ercury EPA 1631								
200.8 Low Level	Metals in Wa	ter by 200.8 ICP-N	MS LL							
200.8 Low Level	Metals in Wa	ter by 200.8 ICP-N	MS LL DIS							
SM21 4500P-B,E	Ortho Phosph	horus SM4500P B	3,E (W)							
8270D SIM (PEST)	Pesticides 82	270D SIM GC/MS								
SM21 4500-H B	pH Analysis									
SW8082A	SW8082 PCE	B's								
SW8270D	SW846-8270	SVOC by GC/MS	6 (W) Liq/Liq ext							
SM21 4500-N D	TKN by Phen	nate (W)								
SM21 2540C	Total Dissolv	ed Solids SM18 2	540C							
SM 5310B	Total Organic	c Carbon								
SM21 4500P-B,E	Total Phosph	orus (W)								
SM21 2540B	Total Residue	е								
SM21 2540D	Total Suspen	ided Solids SM20	2540D							
SM21 2130B	Turbidity Ana	alysis								
SW8260B	Volatile Orga	nic Compounds (\	N) FULL							

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Detectable Results Summary
----------------------------

Client Sample ID: TPW-5-0816			
Lab Sample ID: 1164672001	<u>Parameter</u>	Result	<u>Units</u>
Metals by ICP/MS	Aluminum	53.7	ug/L
	Antimony	0.392	ug/L
	Arsenic	0.795J	ug/L
	Barium	3.69	ug/L
	Boron	6.22	ug/L
	Cadmium	8.18	ug/L
	Calcium	8570	ug/L
	Chromium	0.945	ug/L
	Cobalt	1.81	ug/L
	Copper	2.49	ug/L
	Iron	39900	ug/L
	Lead	26.5	ug/L
	Magnesium	3610	ug/L
	Manganese	404	ug/L
	Molybdenum	0.0931	ug/L
	Nickel	3.17	ug/L
	Potassium	3280	ug/L
	Sodium	4530	ug/L
	Tin	0.0775J	ug/L
	Zinc	5250	ug/L
Metals Department	Mercury	1.11	ng/L
Semivolatile Organic Fuels	Diesel Range Organics	0.421J	mg/L
	Residual Range Organics	0.326J	mg/L
Volatile GC/MS	Chloromethane	0.340J	ug/L
	Ethylbenzene	0.540J	ug/L
	o-Xylene	2.87	ug/L
	P & M -Xylene	1.97J	ug/L
	Xylenes (total)	4.84	ug/L
Waters Department	Alkalinity	36.3	mg/L
	Ammonia-N	0.0671J	mg/L
	Chemical Oxygen Demand	26.3	mg/L
	Chloride	4.24	mg/L
	Fluoride	0.0940J	mg/L
	Ortho Phosphate-P	0.00520J	mg/L
	рН	8.20	pH units
	Sulfate	0.128J	mg/L
	Total Dissolved Solids	30.0	mg/L
	Total Organic Carbon	9.94	mg/L
	Total Solids	114	mg/L
	Total Suspended Solids	75.0	mg/L
	Turbidity	75.0	NTU

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#### **Detectable Results Summary**

Client Sample ID: TPW-5-0816			
Lab Sample ID: 1164672002	Parameter	Result	<u>Units</u>
Dissolved Metals	Mercury	0.924J	ng/L
Dissolved Metals by ICP/MS	Aluminum	4.84	ug/L
	Antimony	0.0516	ug/L
	Arsenic	0.418J	ug/L
	Barium	2.82	ug/L
	Boron	6.30	ug/L
	Cadmium	0.892	ug/L
	Calcium	8330	ug/L
	Cobalt	0.228	ug/L
	Copper	0.331J	ug/L
	Hardness as CaCO3	35.7	mg/L
	Iron	3880	ug/L
	Lead	2.78	ug/L
	Magnesium	3610	ug/L
	Manganese	112	ug/L
	Molybdenum	0.0733	ug/L
	Nickel	0.579J	ug/L
	Potassium	3180	ug/L
	Silicon	826	ug/L
	Sodium	4590	ug/L
	Zinc	483	ug/L
Waters Department	Total Organic Carbon, Dissolved	9.54	mg/L

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#### Results of TPW-5-0816

Client Sample ID: **TPW-5-0816** Client Project ID: **Kenai Wells - Aug APT Event A** Lab Sample ID: 1164672001 Lab Project ID: 1164672 Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Metals by ICP/MS

					<u> </u>	Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Aluminum	53.7	2.00	0.620	ug/L	2.5		08/19/16 10:38
Antimony	0.392	0.0500	0.0150	ug/L	2.5		08/19/16 10:38
Arsenic	0.795 J	0.800	0.200	ug/L	2.5		08/19/16 10:38
Barium	3.69	0.250	0.0400	ug/L	2.5		08/19/16 10:38
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		08/19/16 10:38
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 10:38
Boron	6.22	5.00	1.50	ug/L	2.5		08/19/16 10:38
Cadmium	8.18	0.0500	0.0150	ug/L	2.5		08/19/16 10:38
Calcium	8570	50.0	15.0	ug/L	2.5		08/19/16 10:38
Chromium	0.945	0.500	0.150	ug/L	2.5		08/19/16 10:38
Cobalt	1.81	0.0200	0.0100	ug/L	2.5		08/19/16 10:38
Copper	2.49	0.500	0.200	ug/L	2.5		08/19/16 10:38
Iron	39900	200	62.0	ug/L	25		08/19/16 11:02
Lead	26.5	0.100	0.0310	ug/L	2.5		08/19/16 10:38
Magnesium	3610	20.0	6.20	ug/L	2.5		08/19/16 10:38
Manganese	404	0.100	0.0310	ug/L	2.5		08/19/16 10:38
Molybdenum	0.0931	0.0500	0.0150	ug/L	2.5		08/19/16 10:38
Nickel	3.17	0.620	0.0620	ug/L	2.5		08/19/16 10:38
Potassium	3280	50.0	15.0	ug/L	2.5		08/19/16 10:38
Selenium	0.500 U	1.00	0.310	ug/L	2.5		08/19/16 10:38
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 10:38
Sodium	4530	100	31.0	ug/L	2.5		08/19/16 10:38
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 10:38
Tin	0.0775 J	0.200	0.0620	ug/L	2.5		08/19/16 10:38
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		08/19/16 10:38
Zinc	5250	62.0	8.00	ug/L	50		08/19/16 11:45

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 08/19/16 10:38 Container ID: 1164672001-L Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

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SGS				s US	LNG Fa Sampling a AL-FG-GR	icilities Ground ng Testing Re 2222-00-00201	Confidential water Quality port - Event 2 16-004 Rev. 0 16-Dec-16
Results of <b>TPW-5-0816</b>							
Client Sample ID: <b>TPW-5-0816</b> Client Project ID: <b>Kenai Wells - Aug APT Event A</b> Lab Sample ID: 1164672001 Lab Project ID: 1164672			Collection Da Received Da Matrix: Wate Solids (%): Location:	ate: 08/11/ ate: 08/11/ [:] r (Surface,	16 14:05 16 18:10 Eff., Gro	und)	
Results by Metals Department			_				
Parameter Mercury	<u>Result Qual</u> 1.11	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 08/29/16 16:11
Batch Information							
Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 08/29/16 16:11 Container ID: 1164672001-M			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30134 I: METHOD me: 08/26/1 Vt./Vol.: 50 n Vol: 50 mL	16 15:00 mL		

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Client Sample ID: **TPW-5-0816** Client Project ID: **Kenai Wells - Aug APT Event A** Lab Sample ID: 1164672001 Lab Project ID: 1164672

Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Organochlorinated Pesticides by GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
4,4'-DDD	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
4,4'-DDE	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
4,4'-DDT	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
Aldrin	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
alpha-BHC	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
alpha-Chlordane	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
beta-BHC	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
delta-BHC	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
Dieldrin	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
Endosulfan I	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
Endosulfan II	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
Endosulfan sulfate	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
Endrin	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
Endrin aldehyde	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
Endrin ketone	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
gamma-BHC (Lindane)	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
gamma-Chlordane	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
Heptachlor	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
Heptachlor epoxide	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
Methoxychlor	0.0153 U	0.0306	0.00959	ug/L	1		08/17/16 19:52
Toxaphene	1.02 U	2.04	0.633	ug/L	1		08/17/16 19:52
Surrogates							
2-Fluorobiphenyl (surr)	61.6	53-106		%	1		08/17/16 19:52
Terphenyl-d14 (surr)	76.7	58-132		%	1		08/17/16 19:52

#### **Batch Information**

Analytical Batch: XMS9554 Analytical Method: 8270D SIM (PEST) Analyst: DSH Analytical Date/Time: 08/17/16 19:52 Container ID: 1164672001-G Prep Batch: XXX36071 Prep Method: SW3520C Prep Date/Time: 08/17/16 10:13 Prep Initial Wt./Vol.: 980 mL Prep Extract Vol: 1 mL

Print Date: 09/02/2016 3:16:28PM

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Client Sample ID: **TPW-5-0816** Client Project ID: **Kenai Wells - Aug APT Event A** Lab Sample ID: 1164672001 Lab Project ID: 1164672 Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Polychlorinated Biphenyls

						Allowable	
Parameter_	Result Qual	LOQ/CL	DL	Units	DF	Limits	Date Analyzed
Aroclor-1016	0.202 U	0.404	0.121	ug/L	1		08/18/16 17:20
Aroclor-1221	0.505 U	1.01	0.313	ug/L	1		08/18/16 17:20
Aroclor-1232	0.0505 U	0.101	0.0313	ug/L	1		08/18/16 17:20
Aroclor-1242	0.0505 U	0.101	0.0313	ug/L	1		08/18/16 17:20
Aroclor-1248	0.0505 U	0.101	0.0313	ug/L	1		08/18/16 17:20
Aroclor-1254	0.0505 U	0.101	0.0313	ug/L	1		08/18/16 17:20
Aroclor-1260	0.0505 U	0.101	0.0313	ug/L	1		08/18/16 17:20
Surrogates							
Decachlorobiphenyl (surr)	98	40-135		%	1		08/18/16 17:20
Batch Information							

Analytical Batch: XGC9464 Analytical Method: SW8082A Analyst: S.G Analytical Date/Time: 08/18/16 17:20 Container ID: 1164672001-E Prep Batch: XXX36075 Prep Method: SW3520C Prep Date/Time: 08/17/16 15:07 Prep Initial Wt./Vol.: 990 mL Prep Extract Vol: 1 mL

Print Date: 09/02/2016 3:16:28PM

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Results of TPW-5-0816       Collection Date: 08/11/16 14:05         Client Sample ID: TM-45-0816       Received Date: 08/11/16 14:05         Lab Sample ID: 1164672001       Matrix: Water (Surface, Eff., Ground)         Jab Project ID: 1164672       Solids (%):         Results by Semivolatile Organic Fuels       Limits       Date Analyzed         Decel Range Organics       0.421 J       0.556       0.167       mg/L       1       08/25/16 13:20         Surrogates       Sa Androstane (surr)       76       50-150       %       1       08/25/16 13:20         Analytical Batch: XFC12741       Analytical Date: WOS25/16 13:20       Prop Batch: XXX38137       Prope Date/Tim: 08/25/16 13:20         Container ID: 1164672001-V       81.3       50-150       %       1       08/25/16 13:20         Surogates       0.326 J       0.483       0.139       mg/L       1       08/25/16 13:20         Surogates       0.326 J       0.483       0.139       mg/L       1       08/25/16 13:20         Surogates       0.326 J       0.483       0.139       mg/L       1       08/25/16 13:20         Container ID: 1164672001-V       81.3       50-150       %       1       08/25/16 13:20         Container ID: 1164672001-V       81.3       <	SGS				e US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re 222-00-0020	Confidential water Quality port - Event 2 16-004 Rev. 0 16-Dec-16
Result Qual       LOQOCL       DL       Junts       DE       Allowable         Diesel Range Organics       0.421 J       0.556       0.167       mg/L       1       0825/16 13:20         Surrogates       54 Androstane (surr)       76       50-150       %       1       0825/16 13:20         Fact       Information       Analytical Batch: XFC12741       Prep Batch: XXX38137       Prep Date/Time: 08/25/16 13:20         Analytical Batch: XFC12741       Analytical Dater/Time: 08/25/16 13:20       Prep Date/Time: 08/25/16 16:23       Prep Date/Time: 08/25/16 16:23         Analytical Batch: XFC12741       Prep Batch: XXX38137       Prep Date/Time: 08/25/16 16:23       Prep Date/Time: 08/25/16 13:20         Surrogates       0.326 J       0.463       0.139       mg/L       1       08/25/16 13:20         Surrogates       0.326 J       0.463       0.139       mg/L       1       08/25/16 13:20         Surrogates       n=Tinacontane-dc2 (surr)       81:3       50-150       %       1       08/25/16 13:20         Analytical Batch: XFC127/1       Analytical Batch: XFC127/1       Prep Batch: XXX38137       Prep Date/Time: 08/24/16 16:23       Pr	Results of <b>TPW-5-0816</b> Client Sample ID: <b>TPW-5-0816</b> Client Project ID: <b>Kenai Wells - Aug A</b> Lab Sample ID: 1164672001 Lab Project ID: 1164672	C F M S	Collection Da Received Da Matrix: Wate Solids (%): Location:	ate: 08/11/ ite: 08/11/ [;] r (Surface,	16 14:05 16 18:10 Eff., Gro	und)		
Parameter         Result Qual         LOQ/CL         DL         Units         DE         Limits         Date Analyzed           Desel Range Organics         0.421 J         0.556         0.167         mg/L         1         08/25/16 13:20           Surrogates         5a Androstane (surr)         76         50-150         %         1         08/25/16 13:20           Batch Information         Analytical Method: AK102         Analytical Method: AK102         Prep Batch: XXX36137         Prep Date/Time: 08/24/16 16:23           Analytical Method: AK102         Analytical Method: AK102         Prep Date/Time: 08/24/16 16:23         Prep Date/Time: 08/24/16 16:23           Analytical Method: AK102         Note Result Qual         LOQ/CL         DL         Units         DE         Limits         Date Analyzed           Normogates         0.328 J         0.463         0.139         mg/L         1         08/25/16 13:20           Surrogates         0.328 J         0.463         0.139         mg/L         1         08/25/16 13:20           Surrogates         0.328 J         0.463         0.139         mg/L         1         08/25/16 13:20           Container ID:         1164672001-V         81.3         50-150         1         08/25/16 13:20	Results by Semivolatile Organic Fuel	S						
Surrogates         Sa Androstane (surr)       76       50-150       %       1       08/25/16 13:20         Analytical Batch: XFC12741       XXX36137       Prep Batch: XXX36137       Prep Date/Time: 08/24/16 16:23         Analytical Date/Time: 08/25/16 13:20       Prep Date/Time: 08/24/16 16:23       Prep Date/Time: 08/24/16 16:23         Container ID: 1164672001-V       Prep Extract Vol: 1 mL       Prep Extract Vol: 1 mL         Parameter       Result Qual       LOQ/CL       DL       Units       DE       Allowable         Residual Range Organics       0.326 J       0.463       0.139       mg/L       1       08/25/16 13:20         Surrogates       n-ntriacontane-d62 (surr)       81.3       50-150       %       1       08/25/16 13:20         Prep Batch: XFC12741       Analytical Batch: XFC12741       Prep Date/Time: 08/24/16 16:23       Prep Date/Time: 08/24/16 16:23         Analytical Batch: MFO       Prep Date/Time: 08/24/16 16:23       Prep Extract Vol: 1 mL       Prep Extract Vol: 1 mL         Ontainer ID: 1164672001-V       Prep Extract Vol: 1 mL       Prep Extract Vol: 1 mL       Prep Extract Vol: 1 mL	<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.421 J	<u>LOQ/CL</u> 0.556	<u>DL</u> 0.167	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/25/16 13:20
Batch Information       Prep Batch: XXX38137         Analytical Method: AK102       Prep Method: SW3520C         Analytical Date/Time: 08/25/16 13:20       Prep Date/Time: 08/24/16 16:23         Container ID: 1164672001-V       Prep Method: SW3520C         Prep Date/Time: 08/24/16 16:23       Prep Date/Time: 08/24/16 16:23         Prep Date/Time: 08/24/16 13:20       Prep Method: SW3520C         Manaytical Range Organics       0.326 J       0.463       0.139       mg/L       1       Date Analyzed         Surrogats       Nataytical Batch: XFC12741       Nataytical Batch: XFC12741       Nataytical Batch: XFC12741       Nataytical Date/Time: 08/25/16 13:20         Analytical Date/Time: 08/25/16 13:20       Prep Match: XXX38137       Prep Match WV/00: 270 mL         Prep Date/Time: 08/25/16 13:20       Prep Match: XXX38137       Prep Match WV/00: 270 mL         Analytical Date/Time: 08/25/16 13:20       Prep Match WV/00: 270 mL       Prep Match WV/00: 270 mL         Prep Match Date/Time: 08/25/16 13:20       Prep Match WV/00: 1 mL       Prep Match WV/00: 1 mL	Surrogates 5a Androstane (surr)	76	50-150		%	1		08/25/16 13:20
Each Information         Analytical Batch: XFC12741         Analytical Batch: XFC12741         Analytical Batch: XK102         Analytical Batch: XK102         Analytical Batch: INFO         Container ID: 1164672001-V         Prep Date/Time: 08/25/16 13:20         Container ID: 1164672001-V         Prep Date/Time: 08/25/16 13:20         Surrogates         n-Triacontane-d62 (surr)         Analytical Batch: XK38137         Prep Date/Time: 08/25/16 13:20         Surrogates         n-Triacontane-d62 (surr)         Analytical Batch: XK38137         Prep Date/Time: 08/25/16 13:20         Container ID: 1164672001-V         Prep Batch: XX38137         Prep Method: SW3520C         Prep Date/Time: 08/25/16 13:20         Prep Date/Time: 08/25/16 13:20         Container ID: 1164672001-V         Prep Extract Vol: 1 mL         Prep Date/Time: 08/25/16 13:20         Container ID: 1164672001-V								
Parameter Residual Range Organics       Result Qual 0.326 J       LOQ/CL 0.463       DL 0.139       Units mg/L       DE 1       Limits Limits       Date Analyzed 08/25/16 13:20         Surrogates n-Triacontane-d62 (surr)       81.3       50-150       %       1       08/25/16 13:20         Batch Information Analytical Batch: XFC12741 Analytical Date:Time: 08/25/16 13:20       Prep Batch: XXX36137 Prep Method: SW3520C Prep Date/Time: 08/25/16 13:20       Prep Method: SW3520C Prep Date/Time: 08/24/16 16:23 Prep Initial WtzNo1: 270 mL Prep Extract Vol: 1 mL         Container ID: 1164672001-V       Prep Extract Vol: 1 mL       Prep Extract Vol: 1 mL	Batch Information Analytical Batch: XFC12741 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 08/25/16 13:20 Container ID: 1164672001-V			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36137 I: SW3520C me: 08/24/ [,] /t./Vol.: 270 Vol: 1 mL	; 16 16:23 ) mL		
Surrogates n-Triacontane-d62 (surr) 81.3 50-150 % 1 08/25/16 13:20 Batch Information Analytical Batch: XFC12741 Analytical Date/Time: 08/25/16 13:20 Container ID: 1164672001-V Prep Latract Vol: 1 mL Prep Extract Vol: 1 mL	<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.326 J	<u>LOQ/CL</u> 0.463	<u>DL</u> 0.139	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/25/16 13:20
n-Triacontane-d62 (surr)       81.3       50-150       %       1       08/25/16 13:20         Batch Information       Analytical Batch: XFC12741       Prep Batch: XXX36137       Prep Date/Time: 08/24/16 16:23         Analytical Date/Time: 08/25/16 13:20       Prep Date/Time: 08/24/16 16:23       Prep Initial Wt./Vol.: 270 mL         Container ID: 1164672001-V       Prep Extract Vol: 1 mL       Prep Extract Vol: 1 mL	Surrogates							
Batch Information         Analytical Batch: XFC12741       Prep Batch: XXX36137         Analytical Method: AK103       Prep Method: SW3520C         Analytical Date/Time: 08/25/16 13:20       Prep Date/Time: 08/24/16 16:23         Analytical Date/Time: 08/25/16 13:20       Prep Initial Wt./vol.: 270 mL         Container ID: 1164672001-V       Prep Extract Vol: 1 mL	n-Triacontane-d62 (surr)	81.3	50-150		%	1		08/25/16 13:20
Analytical Batch: XFC12741 Prep Batch: XXX36137 Analytical Method: AK103 Prep Method: SW3520C Analyst: NRO Prep Date/Time: 08/24/16 16:23 Analytical Date/Time: 08/25/16 13:20 Prep Initial WL/Vol: 270 mL Container ID: 1164672001-V Prep Extract Vol: 1 mL	Batch Information							
	Analytical Batch: XFC12741 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 08/25/16 13:20 Container ID: 1164672001-V			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36137 I: SW3520C me: 08/24/ [,] /t./Vol.: 270 Vol: 1 mL	) 16 16:23 ) mL		
	Print Date: 00/02/2016 2:16:20004						1.61-	a la patricat d



Client Sample ID: **TPW-5-0816** Client Project ID: **Kenai Wells - Aug APT Event A** Lab Sample ID: 1164672001 Lab Project ID: 1164672

#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GR222-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Semivolatile Organics GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1,2,4-Trichlorobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
1,2-Dichlorobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
1,3-Dichlorobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
1,4-Dichlorobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
1-Chloronaphthalene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
1-Methylnaphthalene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
2,4,5-Trichlorophenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
2,4,6-Trichlorophenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
2,4-Dichlorophenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
2,4-Dimethylphenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
2,4-Dinitrophenol	0.0253 U	0.0505	0.0152	mg/L	1		08/22/16 21:13
2,4-Dinitrotoluene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
2,6-Dichlorophenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
2,6-Dinitrotoluene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
2-Chloronaphthalene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
2-Chlorophenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
2-Methyl-4,6-dinitrophenol	0.0253 U	0.0505	0.0152	mg/L	1		08/22/16 21:13
2-Methylnaphthalene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
2-Methylphenol (o-Cresol)	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
2-Nitroaniline	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
2-Nitrophenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
3&4-Methylphenol (p&m-Cresol)	0.0101 U	0.0202	0.00626	mg/L	1		08/22/16 21:13
3,3-Dichlorobenzidine	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
3-Nitroaniline	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
4-Bromophenyl-phenylether	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
4-Chloro-3-methylphenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
4-Chloroaniline	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
4-Chlorophenyl-phenylether	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
4-Nitroaniline	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
4-Nitrophenol	0.0253 U	0.0505	0.0152	mg/L	1		08/22/16 21:13
Acenaphthene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Acenaphthylene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Aniline	0.0253 U	0.0505	0.0152	mg/L	1		08/22/16 21:13
Anthracene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Azobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Benzo(a)Anthracene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Benzo[a]pyrene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13

Print Date: 09/02/2016 3:16:28PM

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Client Sample ID: **TPW-5-0816** Client Project ID: **Kenai Wells - Aug APT Event A** Lab Sample ID: 1164672001 Lab Project ID: 1164672

#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GR222-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Semivolatile Organics GC/MS

Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Allowable</u> Limits	Date Analyzed
Benzo[b]Fluoranthene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Benzo[g,h,i]perylene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Benzo[k]fluoranthene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Benzoic acid	0.0253 U	0.0505	0.0152	mg/L	1		08/22/16 21:13
Benzyl alcohol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Bis(2chloro1methylethyl)Ether	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Bis(2-Chloroethoxy)methane	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Bis(2-Chloroethyl)ether	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
bis(2-Ethylhexyl)phthalate	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Butylbenzylphthalate	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Carbazole	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Chrysene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Dibenzo[a,h]anthracene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Dibenzofuran	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Diethylphthalate	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Dimethylphthalate	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Di-n-butylphthalate	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
di-n-Octylphthalate	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Fluoranthene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Fluorene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Hexachlorobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Hexachlorobutadiene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Hexachlorocyclopentadiene	0.0152 U	0.0303	0.00949	mg/L	1		08/22/16 21:13
Hexachloroethane	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Indeno[1,2,3-c,d] pyrene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Isophorone	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Naphthalene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Nitrobenzene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
N-Nitrosodimethylamine	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
N-Nitroso-di-n-propylamine	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
N-Nitrosodiphenylamine	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Pentachlorophenol	0.0253 U	0.0505	0.0152	mg/L	1		08/22/16 21:13
Phenanthrene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Phenol	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Pyrene	0.00505 U	0.0101	0.00313	mg/L	1		08/22/16 21:13
Surrogates							
2,4,6-Tribromophenol (surr)	70.1	43-140		%	1		08/22/16 21:13

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Client Sample ID: **TPW-5-0816** Client Project ID: **Kenai Wells - Aug APT Event A** Lab Sample ID: 1164672001 Lab Project ID: 1164672 Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Semivolatile Organics GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
2-Fluorobiphenyl (surr)	62.3	44-119		%	1		08/22/16 21:13
2-Fluorophenol (surr)	49.3	19-119		%	1		08/22/16 21:13
Nitrobenzene-d5 (surr)	57.6	44-120		%	1		08/22/16 21:13
Phenol-d6 (surr)	48.1	10-115		%	1		08/22/16 21:13
Terphenyl-d14 (surr)	97.9	50-134		%	1		08/22/16 21:13

#### **Batch Information**

Analytical Batch: XMS9556 Analytical Method: SW8270D Analyst: DSH Analytical Date/Time: 08/22/16 21:13 Container ID: 1164672001-Q Prep Batch: XXX36072 Prep Method: SW3520C Prep Date/Time: 08/17/16 10:13 Prep Initial Wt./Vol.: 990 mL Prep Extract Vol: 1 mL

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Results of <b>TPW-5-0816</b> Client Sample ID: <b>TPW-5-0816</b> Client Project ID: <b>Kenai Wells - Aug A</b> Lab Sample ID: 1164672001 Lab Project ID: 1164672	APT Event A	Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%):						
Results by Volatile Fuels			)					
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/19/16 22:48	
<b>urrogates</b> 4-Bromofluorobenzene (surr)	91.6	50-150		%	1		08/19/16 22:48	
Batch Information         Analytical Batch: VFC13238         Analytical Method: AK101         Analyst: ST         Analytical Date/Time: 08/19/16 22:48         Container ID: 1164672001-S		F F F	Prep Batch: \ Prep Method: Prep Date/Tir Prep Initial W Prep Extract \	VXX29386 : SW5030E ne: 08/19/' 't./Vol.: 5 m Vol: 5 mL	3 16 06:00 1L			

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Client Sample ID: **TPW-5-0816** Client Project ID: **Kenai Wells - Aug APT Event A** Lab Sample ID: 1164672001 Lab Project ID: 1164672 Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Volatile GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/15/16 16:51
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/15/16 16:51
1,1,2-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		08/15/16 16:51
1,2-Dibromoethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		08/15/16 16:51
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		08/15/16 16:51
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/15/16 16:51
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		08/15/16 16:51
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		08/15/16 16:51
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		08/15/16 16:51
Benzene	0.200 U	0.400	0.120	ug/L	1		08/15/16 16:51
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		08/15/16 16:51
Bromoform	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Bromomethane	5.00 U	10.0	3.10	ug/L	1		08/15/16 16:51
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		08/15/16 16:51
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/15/16 16:51
Chloroethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51

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Client Sample ID: **TPW-5-0816** Client Project ID: **Kenai Wells - Aug APT Event A** Lab Sample ID: 1164672001 Lab Project ID: 1164672 Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Volatile GC/MS

Parameter	Result Qual	100/01		Units	DF	Allowable	Date Analyzed
Chloroform	0.500 U	1.00	0.300	ua/L	1		08/15/16 16:51
Chloromethane	0.340 J	1.00	0.310	ug/L	1		08/15/16 16:51
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		08/15/16 16:51
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		08/15/16 16:51
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Ethylbenzene	0.540 J	1.00	0.310	ug/L	1		08/15/16 16:51
Freon-113	5.00 U	10.0	3.10	ug/L	1		08/15/16 16:51
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Methylene chloride	2.50 U	5.00	1.00	ug/L	1		08/15/16 16:51
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		08/15/16 16:51
Naphthalene	5.00 U	10.0	3.10	ug/L	1		08/15/16 16:51
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
o-Xylene	2.87	1.00	0.310	ug/L	1		08/15/16 16:51
P & M -Xylene	1.97 J	2.00	0.620	ug/L	1		08/15/16 16:51
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Styrene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Toluene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		08/15/16 16:51
Vinyl chloride	0.500 U	1.00	0.310	ug/L	1		08/15/16 16:51
Xylenes (total)	4.84	3.00	1.00	ug/L	1		08/15/16 16:51
Surrogates							
1,2-Dichloroethane-D4 (surr)	102	81-118		%	1		08/15/16 16:51
4-Bromofluorobenzene (surr)	103	85-114		%	1		08/15/16 16:51
Toluene-d8 (surr)	101	89-112		%	1		08/15/16 16:51

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Client Sample ID: **TPW-5-0816** Client Project ID: **Kenai Wells - Aug APT Event A** Lab Sample ID: 1164672001 Lab Project ID: 1164672 Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Volatile GC/MS

#### **Batch Information**

Analytical Batch: VMS16076 Analytical Method: SW8260B Analyst: TJT Analytical Date/Time: 08/15/16 16:51 Container ID: 1164672001-N Prep Batch: VXX29367 Prep Method: SW5030B Prep Date/Time: 08/15/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

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Results of TPW-5-0816							
Client Sample ID: <b>TPW-5-0816</b> Client Project ID: <b>Kenai Wells - Aug</b> Lab Sample ID: 1164672001 Lab Project ID: 1164672	Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Waters Department							
<u>Parameter</u> Chloride Fluoride	<u>Result Qual</u> 4.24 0.0940 J	<u>LOQ/CL</u> 0.200 0.200	<u>DL</u> 0.0620 0.0620	<u>Units</u> mg/L mg/L	<u>DF</u> 1 1	<u>Allowable</u> Limits	Date Analyzed 08/12/16 12:01 08/12/16 12:01
Nitrate-N Nitrite-N	0.100 U 0.100 U	0.200 0.200	0.0620 0.0620	mg/L ma/L	1 1		08/12/16 12:01 08/12/16 12:01
Sulfate	0.128 J	0.200	0.0620	mg/L	1		08/12/16 12:01
Batch Information							
Analytical Batch: WIC5558 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 08/12/16 12:01 Container ID: 1164672001-J		i i i i i i i i i i i i i i i i i i i	Prep Batch: Prep Method Prep Date/Tin Prep Initial W Prep Extract	WXX11589 : METHOD me: 08/10/ [,] /t./Vol.: 10 n Vol: 10 mL	16 13:05 mL		
<u>Parameter</u> Chemical Oxygen Demand	<u>Result Qual</u> 26.3	<u>LOQ/CL</u> 20.0	<u>DL</u> 6.20	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/16/16 15:30
Batch Information Analytical Batch: WSP5345 Analytical Method: EPA 410.4 Analyst: KBE Analytical Date/Time: 08/16/16 15:30 Container ID: 1164672001-A							
<u>Parameter</u> Total Organic Carbon	<u>Result Qual</u> 9.94	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/23/16 18:53
Batch Information							
Analytical Batch: WTC2621 Analytical Method: SM 5310B Analyst: VDL Analytical Date/Time: 08/23/16 18:53 Container ID: 1164672001-C							
<u>Parameter</u> Turbidity	<u>Result Qual</u> 75.0	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/12/16 12:16
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Results of TPW-5-0816								
Client Sample ID: <b>TPW-5-0816</b> Client Project ID: <b>Kenai Wells - Aug A</b> Lab Sample ID: 1164672001 Lab Project ID: 1164672	NPT Event A	Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Waters Department								
Batch Information								
Analytical Batch: WAT10712 Analytical Method: SM21 2130B Analyst: NEG Analytical Date/Time: 08/12/16 12:16 Container ID: 1164672001-I								
Parameter Alkalinity	<u>Result Qual</u> 36.3	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/15/16 22:27	
Analytical Method: SM21 2320B Analyst: ACF Analytical Date/Time: 08/15/16 22:27 Container ID: 1164672001-X								
Parameter Total Solids	<u>Result</u> Qual 114	<u>LOQ/CL</u> 10.0	<u>DL</u> 10.0	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 08/19/16 15:00	
Batch Information Analytical Batch: STS5157 Analytical Method: SM21 2540B Analyst: LLP Analytical Date/Time: 08/19/16 15:00 Container ID: 1164672001-D								
Parameter Total Dissolved Solids	<u>Result Qual</u> 30.0	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/16/16 15:20	
Batch Information Analytical Batch: STS5153 Analytical Method: SM21 2540C Analyst: LLP Analytical Date/Time: 08/16/16 15:20 Container ID: 1164672001-I								
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Allowable</u> Limits	Date Analyzed	
int Date: 09/02/2016 3:16:28PM						J flaggin	g is activated	
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Results of TPW-5-0816							
Client Sample ID: <b>TPW-5-0816</b> Client Project ID: <b>Kenai Wells - Aug /</b> Lab Sample ID: 1164672001 Lab Project ID: 1164672	Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Waters Department							
<u>Parameter</u> Total Suspended Solids	<u>Result Qual</u> 75.0	<u>LOQ/CL</u> 3.33	<u>DL</u> 1.03	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/17/16 14:30
Batch Information Analytical Batch: STS5154 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 08/17/16 14:30 Container ID: 1164672001-K							
<u>Parameter</u> pH	<u>Result Qual</u> 8.20	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 08/15/16 22:27
Analytical Batch: WTI4497 Analytical Method: SM21 4500-H B Analyst: ACF Analytical Date/Time: 08/15/16 22:27 Container ID: 1164672001-X							
<u>Parameter</u> Total Kjeldahl Nitrogen	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 08/24/16 16:04
Batch Information Analytical Batch: WDA3843 Analytical Method: SM21 4500-N D Analyst: NEG Analytical Date/Time: 08/24/16 16:04 Container ID: 1164672001-A		F F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11606 METHOD ne: 08/23/16 t./Vol.: 25 m Vol: 25 mL	6 18:00 L		
<u>Parameter</u> Ammonia-N	<u>Result Qual</u> 0.0671 J	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	<u>Date Analyzed</u> 08/16/16 14:29
rint Date: 09/02/2016 3:16:28PM						J flaggin	g is activated
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Results of TPW-5-0816									
Client Sample ID: <b>TPW-5-0816</b> Client Project ID: <b>Kenai Wells - Aug APT Event A</b> Lab Sample ID: 1164672001 Lab Project ID: 1164672		Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%):							
Batch Information									
Analytical Batch: WDA3838 Analytical Method: SM21 4500-NH3 G Analyst: NEG Analytical Date/Time: 08/16/16 14:29 Container ID: 1164672001-A	Prep Batch: WXX11601 Prep Method: METHOD Prep Date/Time: 08/16/16 13:00 Prep Initial Wt./Vol.: 6 mL Prep Extract Vol: 6 mL								
Devenueter	Desult Quel	1.00/01	DI	Linita	DE	Allowable	Data Analyzad		
<u>Parameter</u> Ortho Phosphate-P		0.0100	<u>DL</u> 0.00310	<u>onits</u> ma/l	<u>DF</u> 1	Limits	08/12/16 12:05		
Total Phosphorus	0.0500 U	0.100	0.0310	mg/L	1		08/17/16 12:23		
Analytical Batch: WDA3835 Analytical Method: SM21 4500P-B,E Analyst: NEG Analytical Date/Time: 08/12/16 12:05 Container ID: 1164672001-B Analytical Batch: WDA3839 Analytical Method: SM21 4500P-B,E Analyst: NEG Analytical Date/Time: 08/17/16 12:23 Container ID: 1164672001-A		Prep Batch: WXX11593 Prep Method: SM21 4500P-B,E Prep Date/Time: 08/12/16 11:30 Prep Initial Wt./Vol.: 25 mL Prep Extract Vol: 25 mL Prep Batch: WXX11595 Prep Method: SM21 4500P-B,E Prep Date/Time: 08/16/16 12:30 Prep Initial Wt./Vol.: 2.5 mL Prep Extract Vol: 25 mL							
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Results of TPW-5-0816									
Client Sample ID: <b>TPW-5-0816</b> Client Project ID: <b>Kenai Wells - Aug</b> Lab Sample ID: 1164672002 Lab Project ID: 1164672	APT Event A	Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by <b>Dissolved Metals</b>									
Parameter Mercury	<u>Result</u> Qual 0.924 J	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 08/29/16 16:43		
Batch Information									
Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 08/29/16 16:43 Container ID: 1164672002-C			Prep Batch: Prep Method Prep Date/Ti Prep Initial V Prep Extract	MXX30134 I: METHOD me: 08/26/1 /t./Vol.: 50 n Vol: 50 mL	16 15:00 mL				

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#### Results of TPW-5-0816

Client Sample ID: **TPW-5-0816** Client Project ID: **Kenai Wells - Aug APT Event A** Lab Sample ID: 1164672002 Lab Project ID: 1164672 Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	4.84	2.00	0.620	ug/L	2.5		08/19/16 09:41
Antimony	0.0516	0.0500	0.0150	ug/L	2.5		08/19/16 09:41
Arsenic	0.418 J	0.800	0.200	ug/L	2.5		08/19/16 09:41
Barium	2.82	0.250	0.0400	ug/L	2.5		08/19/16 09:41
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		08/19/16 09:41
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		08/19/16 09:41
Boron	6.30	5.00	1.50	ug/L	2.5		08/19/16 09:41
Cadmium	0.892	0.0500	0.0150	ug/L	2.5		08/19/16 09:41
Calcium	8330	50.0	15.0	ug/L	2.5		08/19/16 09:41
Chromium	0.250 U	0.500	0.150	ug/L	2.5		08/19/16 09:41
Cobalt	0.228	0.0200	0.0100	ug/L	2.5		08/19/16 09:41
Copper	0.331 J	0.500	0.200	ug/L	2.5		08/19/16 09:41
Iron	3880	20.0	6.20	ug/L	2.5		08/19/16 09:41
Lead	2.78	0.100	0.0310	ug/L	2.5		08/19/16 09:41
Magnesium	3610	20.0	6.20	ug/L	2.5		08/19/16 09:41
Manganese	112	0.100	0.0310	ug/L	2.5		08/19/16 09:41
Molybdenum	0.0733	0.0500	0.0150	ug/L	2.5		08/19/16 09:41
Nickel	0.579 J	0.620	0.0620	ug/L	2.5		08/19/16 09:41
Potassium	3180	50.0	15.0	ug/L	2.5		08/19/16 09:41
Selenium	0.500 U	1.00	0.310	ug/L	2.5		08/19/16 09:41
Silicon	826	100	31.0	ug/L	2.5		08/19/16 09:41
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 09:41
Sodium	4590	100	31.0	ug/L	2.5		08/19/16 09:41
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		08/19/16 09:41
Tin	0.100 U	0.200	0.0620	ug/L	2.5		08/19/16 09:41
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		08/19/16 09:41
Zinc	483	3.10	0.400	ug/L	2.5		08/19/16 09:41
Batch Information							
Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 08/19/16 09:41 Container ID: 1164672002-B		P P P	rrep Batch: M rrep Method: rrep Date/Tim rrep Initial Wt. rrep Extract V	XX30094 E200.2 e: 08/18/16 /Vol.: 50 m ol: 10 mL	6 07:36 L		



#### Results of TPW-5-0816

Client Sample ID: **TPW-5-0816** Client Project ID: **Kenai Wells - Aug APT Event A** Lab Sample ID: 1164672002 Lab Project ID: 1164672 Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 08/19/16 09:41 Container ID: 1164672002-B Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/16 07:36 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/02/2016 3:16:28PM

E-247

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Results of <b>TPW-5-0816</b> Client Sample ID: <b>TPW-5-0816</b> Client Project ID: <b>Kenai Wells - Aug A</b> Lab Sample ID: 1164672002 Lab Project ID: 1164672	PT Event A	Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Waters Department           Parameter           Total Organic Carbon.Dissolved	<u>Result Qual</u> 9.54	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/17/16 16:59	
				5				
Analytical Batch: WTC2620 Analytical Method: SM 5310B Analyst: VDL Analytical Date/Time: 08/17/16 16:59 Container ID: 1164672002-A								
Print Date: 09/02/2016 3:16:28PM						J flaggin	g is activated	

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### Results of TB-1-1405

SG

Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
1,1,1,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/15/16 15:29
1,1,1-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,1,2,2-Tetrachloroethane	0.250 U	0.500	0.150	ug/L	1		08/15/16 15:29
1,1,2-Trichloroethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,1-Dichloroethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,1-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,1-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,2,3-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,2,3-Trichloropropane	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,2,4-Trichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,2,4-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,2-Dibromo-3-chloropropane	5.00 U	10.0	3.10	ug/L	1		08/15/16 15:29
1,2-Dibromoethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,2-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,2-Dichloroethane	0.250 U	0.500	0.150	ug/L	1		08/15/16 15:29
1,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,3,5-Trimethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,3-Dichlorobenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
1,3-Dichloropropane	0.250 U	0.500	0.150	ug/L	1		08/15/16 15:29
1,4-Dichlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/15/16 15:29
2,2-Dichloropropane	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
2-Butanone (MEK)	5.00 U	10.0	3.10	ug/L	1		08/15/16 15:29
2-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
2-Hexanone	5.00 U	10.0	3.10	ug/L	1		08/15/16 15:29
4-Chlorotoluene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
4-Isopropyltoluene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
4-Methyl-2-pentanone (MIBK)	5.00 U	10.0	3.10	ug/L	1		08/15/16 15:29
Benzene	0.200 U	0.400	0.120	ug/L	1		08/15/16 15:29
Bromobenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Bromochloromethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Bromodichloromethane	0.250 U	0.500	0.150	ug/L	1		08/15/16 15:29
Bromoform	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Bromomethane	5.00 U	10.0	3.10	ug/L	1		08/15/16 15:29
Carbon disulfide	5.00 U	10.0	3.10	ug/L	1		08/15/16 15:29
Carbon tetrachloride	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Chlorobenzene	0.250 U	0.500	0.150	ug/L	1		08/15/16 15:29
Chloroethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29

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## Results of TB-1-1405

SG

Client Sample ID: **TB-1-1405** Client Project ID: **Kenai Wells - Aug APT Event A** Lab Sample ID: 1164672003 Lab Project ID: 1164672 Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	Date Analyzed
Chloroform	0.500 U	1.00	0.300	ug/L	1		08/15/16 15:29
Chloromethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
cis-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
cis-1,3-Dichloropropene	0.250 U	0.500	0.150	ug/L	1		08/15/16 15:29
Dibromochloromethane	0.250 U	0.500	0.150	ug/L	1		08/15/16 15:29
Dibromomethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Dichlorodifluoromethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Ethylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Freon-113	5.00 U	10.0	3.10	ug/L	1		08/15/16 15:29
Hexachlorobutadiene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Isopropylbenzene (Cumene)	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Methylene chloride	2.50 U	5.00	1.00	ug/L	1		08/15/16 15:29
Methyl-t-butyl ether	5.00 U	10.0	3.10	ug/L	1		08/15/16 15:29
Naphthalene	5.00 U	10.0	3.10	ug/L	1		08/15/16 15:29
n-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
n-Propylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
o-Xylene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
P & M -Xylene	1.00 U	2.00	0.620	ug/L	1		08/15/16 15:29
sec-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Styrene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
tert-Butylbenzene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Tetrachloroethene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Toluene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
trans-1,2-Dichloroethene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
trans-1,3-Dichloropropene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Trichloroethene	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Trichlorofluoromethane	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Vinyl acetate	5.00 U	10.0	3.10	ug/L	1		08/15/16 15:29
Vinyl chloride	0.500 U	1.00	0.310	ug/L	1		08/15/16 15:29
Xylenes (total)	1.50 U	3.00	1.00	ug/L	1		08/15/16 15:29
Surrogates							
1,2-Dichloroethane-D4 (surr)	103	81-118		%	1		08/15/16 15:29
4-Bromofluorobenzene (surr)	104	85-114		%	1		08/15/16 15:29
Toluene-d8 (surr)	99.9	89-112		%	1		08/15/16 15:29

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### Results of TB-1-1405

Client Sample ID: **TB-1-1405** Client Project ID: **Kenai Wells - Aug APT Event A** Lab Sample ID: 1164672003 Lab Project ID: 1164672 Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Volatile GC/MS

# **Batch Information**

Analytical Batch: VMS16076 Analytical Method: SW8260B Analyst: TJT Analytical Date/Time: 08/15/16 15:29 Container ID: 1164672003-A Prep Batch: VXX29367 Prep Method: SW5030B Prep Date/Time: 08/15/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL

Print Date: 09/02/2016 3:16:28PM

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Results of <b>TB-2-1405</b> Client Sample ID: <b>TB-2-1405</b> Client Project ID: <b>Kenai Wells - Aug /</b> Lab Sample ID: 1164672004 Lab Project ID: 1164672	APT Event A	C R M Si	ollection Da eceived Dat latrix: Water olids (%): ocation:	te: 08/11/ te: 08/11/ (Surface,	/16 14:05 16 18:10 Eff., Grou	und)	
Results by Volatile Fuels Parameter Constitute Operation	Result Qual	LOQ/CL	DL	<u>Units</u>	DF 1	Allowable Limits	Date Analyzec
urrogates 4-Bromofluorobenzene (surr)	88.6	50-150	0.0310	mg/∟ %	1		08/19/16 21:5
Satch Information Analytical Batch: VFC13238 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 08/19/16 21:51 Container ID: 1164672004-A		F F F F	Prep Batch: N Prep Method: Prep Date/Tir Prep Initial W Prep Extract N	VXX29386 SW5030E ne: 08/19/ [;] t./Vol.: 5 m Vol: 5 mL	3 16 06:00 1∟		
rint Date: 09/02/2016 3:16:28PM						J flaccin	g is activated

SGS				S	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re 222-00-0020	Confidential water Quality port - Event 2 16-004 Rev. 0 16-Dec-16	
Results of TB-3-1405								
Client Sample ID: <b>TB-3-1405</b> Client Project ID: <b>Kenai Wells - Aug A</b> Lab Sample ID: 1164672005 Lab Project ID: 1164672	APT Event A	Collection Date: 08/11/16 14:05 Received Date: 08/11/16 18:10 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Metals Department								
<u>Parameter</u> Mercury	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/29/16 16:15	
Batch Information								
Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 08/29/16 16:15 Container ID: 1164672005-A			Prep Batch: Prep Method Prep Date/Ti Prep Initial V Prep Extract	MXX30134 I: METHOD me: 08/26/ [,] Vt./Vol.: 50 Vol: 50 mL	16 15:00 mL			

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# Method Blank

SG

Blank ID: MB for HBN 1741781 [MXX/30094] Blank Lab ID: 1345941 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001, 1164672002

#### Results by 200.8 Low Level

Parameter	Results	LOQ/CL	DL	<u>Units</u>
Aluminum	1.00U	2.00	0.620	ug/L
Antimony	0.0250U	0.0500	0.0150	ug/L
Arsenic	0.400U	0.800	0.200	ug/L
Barium	0.125U	0.250	0.0400	ug/L
Beryllium	0.0250U	0.0500	0.0250	ug/L
Bismuth	0.0250U	0.0500	0.0150	ug/L
Boron	2.50U	5.00	1.50	ug/L
Cadmium	0.0250U	0.0500	0.0150	ug/L
Calcium	25.0U	50.0	15.0	ug/L
Chromium	0.250U	0.500	0.150	ug/L
Cobalt	0.0100U	0.0200	0.0100	ug/L
Copper	0.250U	0.500	0.200	ug/L
Iron	10.0U	20.0	6.20	ug/L
Lead	0.0500U	0.100	0.0310	ug/L
Magnesium	10.0U	20.0	6.20	ug/L
Manganese	0.0500U	0.100	0.0310	ug/L
Molybdenum	0.0250U	0.0500	0.0150	ug/L
Nickel	0.0979J	0.620	0.0620	ug/L
Potassium	25.0U	50.0	15.0	ug/L
Selenium	0.500U	1.00	0.310	ug/L
Silicon	31.3J	100	31.0	ug/L
Silver	0.0100U	0.0200	0.00620	ug/L
Sodium	50.0U	100	31.0	ug/L
Thallium	0.0100U	0.0200	0.00620	ug/L
Tin	0.100U	0.200	0.0620	ug/L
Vanadium	0.500U	1.00	0.310	ug/L
Zinc	1.65J	3.10	0.400	ug/L

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Analytical Date/Time: 8/19/2016 9:35:36AM Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 8/18/2016 7:36:47AM Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/02/2016 3:16:39PM

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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1164672 [MXX30094] Blank Spike Lab ID: 1345942 Date Analyzed: 08/19/2016 09:38

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001, 1164672002

# Results by 200.8 Low Level

	E	Blank Spike	(ug/L)	
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>
Aluminum	50	51.5	103	(85-115)
Antimony	5	5.39	108	(85-115)
Arsenic	25	25.1	101	(85-115)
Barium	25	25.0	100	(85-115)
Beryllium	12.5	12.9	103	(85-115)
Bismuth	12.5	12.8	102	(85-115)
Boron	50	49.1	98	(85-115)
Cadmium	12.5	12.9	103	(85-115)
Calcium	5000	4700	94	(85-115)
Chromium	12.5	11.5	92	(85-115)
Cobalt	12.5	12.8	103	(85-115)
Copper	25	23.6	95	(85-115)
Iron	500	486	97	(85-115)
Lead	5	5.10	102	(85-115)
Magnesium	5000	5120	102	(85-115)
Manganese	50	49.3	99	(85-115)
Molybdenum	12.5	12.9	103	(85-115)
Nickel	12.5	12.5	100	(85-115)
Potassium	5000	5190	104	(85-115)
Selenium	25	25.5	102	(85-115)
Silicon	2500	2590	104	(85-115)
Silver	5	5.03	101	(85-115)
Sodium	5000	5220	104	(85-115)
Thallium	2.5	2.56	103	(85-115)
Tin	12.5	12.8	102	(85-115)
Vanadium	25	24.5	98	(85-115)
Zinc	50	52.4	105	(85-115)

# **Batch Information**

Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Prep Batch: MXX30094 Prep Method: E200.2 Prep Date/Time: 08/18/2016 07:36 Spike Init Wt./Vol.: 50 ug/L Extract Vol: 10 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 09/02/2016 3:16:43PM

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## Matrix Spike Summary

Original Sample ID: 1346128 MS Sample ID: 1346129 MS MSD Sample ID: 1346130 MSD

QC for Samples: 1164672001, 1164672002

Analysis Date: 08/19/2016 9:41 Analysis Date: 08/19/2016 9:44 Analysis Date: 08/19/2016 9:47 Matrix: Water (Surface, Eff., Ground)

Results by 200.8 Low Level			_							
		Ma	itrix Spike (	(ug/L)	Spik	e Duplicate	e (ug/L)			
Parameter	Sample	<u>Spike</u>	Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Aluminum	4.84	50.0	50.8	92	50.0	53.8	98	70-130	5.60	(< 20)
Antimony	0.0516	5.00	5.28	105	5.00	5.44	108	70-130	2.90	(< 20)
Arsenic	0.418J	25.0	24.4	96	25.0	25.5	100	70-130	4.70	(< 20)
Barium	2.82	25.0	27.8	100	25.0	28.4	102	70-130	1.90	(< 20)
Beryllium	0.0250U	12.5	11.5	92	12.5	12.3	98	70-130	6.20	(< 20)
Bismuth	0.0250U	12.5	12.1	97	12.5	12.6	101	70-130	3.90	(< 20)
Boron	6.30	50.0	50.8	89	50.0	52.5	92	70-130	3.20	(< 20)
Cadmium	0.892	12.5	13.3	100	12.5	13.7	102	70-130	2.40	(< 20)
Calcium	8330	5000	12600	85	5000	12800	90	70-130	2.20	(< 20)
Chromium	0.250U	12.5	11.1	89	12.5	11.5	92	70-130	3.60	(< 20)
Cobalt	0.228	12.5	12.6	99	12.5	13.1	103	70-130	3.60	(< 20)
Copper	0.331J	25.0	22.9	90	25.0	23.9	94	70-130	4.30	(< 20)
Iron	3880	500	4420	107	500	4570	138 *	70-130	3.50	(< 20)
Lead	2.78	5.00	7.71	99	5.00	7.91	103	70-130	2.50	(< 20)
Magnesium	3610	5000	7710	82	5000	8140	91	70-130	5.50	(< 20)
Manganese	112	50.0	152	81	50.0	159	94	70-130	4.20	(< 20)
Molybdenum	0.0733	12.5	12.6	100	12.5	13.0	103	70-130	2.70	(< 20)
Nickel	0.579J	12.5	12.6	96	12.5	13.3	102	70-130	5.60	(< 20)
Potassium	3180	5000	8120	99	5000	8480	106	70-130	4.40	(< 20)
Selenium	0.500U	25.0	23.7	95	25.0	24.3	97	70-130	2.70	(< 20)
Silver	0.0100U	5.00	5.16	103	5.00	5.21	104	70-130	0.97	(< 20)
Sodium	4590	5000	8740	83	5000	9470	97	70-130	7.90	(< 20)
Thallium	0.0100U	2.50	2.47	99	2.50	2.50	100	70-130	1.30	(< 20)
Tin	0.100U	12.5	12.3	99	12.5	12.9	103	70-130	4.00	(< 20)
Vanadium	0.500U	25.0	24.3	97	25.0	24.7	99	70-130	1.60	(< 20)
Zinc	483	50.0	508	50 *	50.0	531	96	70-130	4.40	(< 20)

#### **Batch Information**

Analytical Batch: MMS9498 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Analytical Date/Time: 8/19/2016 9:44:19AM Prep Batch: MXX30094 Prep Method: LL Digest for Metals on ICP-MS Prep Date/Time: 8/18/2016 7:36:47AM Prep Initial Wt./Vol.: 50.00mL Prep Extract Vol: 10.00mL

Print Date: 09/02/2016 3:16:44PM

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#### Bench Spike Summary

Original Sample ID: 1346128 MS Sample ID: 1346131 BND MSD Sample ID: Analysis Date: 08/19/2016 9:41 Analysis Date: 08/19/2016 9:50 Analysis Date: Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001, 1164672002

Results by 200.8 Low Level										
		Ма	trix Spike (	(ug/L)	Spik	e Duplicate	e (ug/L)			
Parameter	Sample	<u>Spike</u>	Result	Rec (%)	Spike	Result	Rec (%)	CL	<u>RPD (%)</u>	RPD CL
Iron	3880	500	4470	118				70-130		
Zinc	483	50.0	525	84				70-130		
Batch Information Analytical Batch: MMS9498 Analytical Method: 200.8 Loo Instrument: Perkin Elmer Ne Analyst: VDL Analytical Date/Time: 8/19/2	w Level xlon P5 016 9:50:11/	AM		Prep Prep Prep Prep Prep	) Batch: M ) Method: ) Date/Tin ) Initial Wit ) Extract \	MXX30094 LL Digesi ne: 8/18/2 t./Vol.: 50. /ol: 10.00	t for Metals 016 7:36:4 00mL mL	on ICP-MS 7AM	5	

Print Date: 09/02/2016 3:16:44PM

Blank ID: MB for HBN 1742357 [M Blank Lab ID: 1348656	XX/30134]	Matrix	: Water (Surfac	ce, Eff., Ground)	
QC for Samples: 164672001, 1164672002, 11646720	05				
Results by EPA 1631 E					
Parameter Re Nercury 0.4	<u>esults</u> 500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	
atch Information					
Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Instrument: Analyst: NEG Analytical Date/Time: 8/29/2016	2:50:32PM	Prep Bat Prep Me Prep Dat Prep Init Prep Ext	tch: MXX30134 thod: METHOD te/Time: 8/26/20 ial Wt./Vol.: 50 rr ract Vol: 50 mL	nL 3:00:00PM	

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Results by EPA 1631 E Parameter Results Mercury 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	
Analytical Batch: MCV5734 Analytical Method: EPA 1631 E Instrument: Analyst: NEG Analytical Date/Time: 8/29/2016 3:26:22PM	Prep Bate Prep Met Prep Dat Prep Initi Prep Extr	ch: MXX30134 hod: METHOD e/Time: 8/26/20 al Wt./Vol.: 50 m act Vol: 50 mL	16 3:00:00РМ 1L	

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Blank ID: MB for HBN Blank Lab ID: 134866 QC for Samples: 1164672001, 11646720	N 1742357 [MXX/30134] 60 002, 1164672005	Matri	x: Water (Surfa	ace, Eff., Ground)
Results by EPA 1631	E			
<u>Parameter</u> Mercury	<u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L
atch Information	]			
Analytical Batch: M Analytical Method: I Instrument: Analyst: NEG Analytical Date/Time	CV5734 EPA 1631 E e: 8/29/2016 3:53:15PM	Prep Ba Prep Mi Prep Da Prep Ini Prep Ex	atch: MXX30134 ethod: METHOE ate/Time: 8/26/2 itial Wt./Vol.: 50 «tract Vol: 50 ml	l 0 016 3:00:00PM mL -

Blank ID: MB for HBN Blank Lab ID: 134866 QC for Samples: 1164672001, 11646720	1742357 [MXX/30134] 5 02, 1164672005	Matrix	k: Water (Surfa	ce, Eff., Ground)
Results by <b>EPA 1631</b> Parameter Mercury	E <u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L
Analytical Batch: MC Analytical Method: E Instrument: Analyst: NEG Analytical Date/Time	CV5734 EPA 1631 E :: 8/29/2016 5:01:01PM	Prep Ba Prep Me Prep Da Prep Init Prep Ex	tch: MXX30134 ethod: METHOD te/Time: 8/26/20 tial Wt./Vol.: 50 tract Vol: 50 mL	016 3:00:00PM mL

Method Blank Blank ID: MB for HB Blank Lab ID: 13486	N 1742357 [MXX/30134] 67	Matri	x: Water (Surfa	ce, Eff., Ground)	
QC for Samples: 1164672001, 1164672	002, 1164672005				
Results by EPA 163	1 E				
<u>Parameter</u> Mercury	<u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	
Batch Information	]				
Analytical Batch: M Analytical Method: Instrument: Analyst: NEG Analytical Date/Tim	ICV5734 EPA 1631 E e: 8/29/2016 5:19:03PM	Prep Ba Prep Me Prep Da Prep Ini Prep Ex	atch: MXX30134 ethod: METHOD ate/Time: 8/26/20 tial Wt./Vol.: 50 ttract Vol: 50 mL	) 016 3:00:00PM mL	

SGS

Method Blank Blank ID: MB for HB Blank Lab ID: 13486	N 1742357 [MXX/30134] 68	Matrix	x: Water (Surfa	ce, Eff., Ground)	
QC for Samples: 1164672001, 1164672	002, 1164672005	1			
Results by EPA 163	1 E <u>Results</u>	LOQ/CL	DL	Units	
Mercury	0.500U	1.00	0.500	ng/L	
Batch Information	]				
Analytical Batch: M Analytical Method: Instrument: Analyst: NEG Analytical Date/Tim	ICV5734 EPA 1631 E e: 8/29/2016 4:20:09PM	Prep Ba Prep Me Prep Da Prep Ini Prep Ex	tch: MXX30134 ethod: METHOD te/Time: 8/26/20 tial Wt./Vol.: 50 n tract Vol: 50 mL	016 3:00:00PM mL	

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<b>SGS</b>				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
Blank Spike ID: LCS for HE Blank Spike Lab ID: 13486 Date Analyzed: 08/29/201	BN 1164672 [N 54 6 14:41	ИXX3013	4]	
QC for Samples: 116467	2001, 1164672	2002, 1164	1672005	Matrix: Water (Surface, Eff., Ground)
Results by EPA 1631 E				
	B	lank Spike	e (ng/L)	
<u>Parameter</u> Mercury	<u>Spike</u> 25	<u>Result</u> 24.9	<u>Rec (%)</u> 100	<u>CL</u> (77-123)
Batch Information				
Analytical Batch: MCV5734 Analytical Method: EPA 163 Instrument: Analyst: NEG	1 E			Prep Batch: <b>MXX30134</b> Prep Method: <b>METHOD</b> Prep Date/Time: <b>08/26/2016 15:00</b> Spike Init Wt./Vol.: 25 ng/L Extract Vol: 50 mL Dupe Init Wt./Vol.: Extract Vol:
nt Date: 09/02/2016 3:16:52PM				
nt Date: 09/02/2016 3:16:52PM	1 200		or Drive Ancher	rado AK 05518
SGS North Americ	a Inc. 200	7.562.2343	6 <b>f</b> 907.561.530	aye, AN 90010 1 www.us.sgs.com



## Matrix Spike Summary

Original Sample ID: 1164639015 MS Sample ID: 1348658 MS MSD Sample ID: 1348659 MSD Analysis Date: 08/29/2016 15:39 Analysis Date: 08/29/2016 15:44 Analysis Date: 08/29/2016 15:48 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001, 1164672002, 1164672005

Results by EPA 1631 E											
			Mat	trix Spike (	ng/L)	Spike	e Duplicate	e (ng/L)			
<u>Parameter</u> Mercury	<u>Sample</u> 0.557J	<u>Sp</u> 25	oike .0	<u>Result</u> 24.3	<u>Rec (%)</u> 95	<u>Spike</u> 25.0	<u>Result</u> 24.3	<u>Rec (%)</u> 95	<u>CL</u> 71-125	<u>RPD (%)</u> 0.04	<u>RPD CL</u> (< 24 )
Batch Information Analytical Batch: MCV5734 Analytical Method: EPA 163 Instrument: Analyst: NEG Analytical Date/Time: 8/29/2	1 E 016 3:44	1:17PM			Prej Prej Prej Prej	o Batch: M o Method: o Date/Tim o Initial Wt	//XX30134 Digestion ne: 8/26/2 t./Vol.: 50. /ol: 50.00	I Low Level 016 3:00:0 .00mL mL	Mercury (\ IOPM	∕∕)	

Print Date: 09/02/2016 3:16:53PM



# Matrix Spike Summary

Original Sample ID: 1164672002 MS Sample ID: 1348662 MS MSD Sample ID: 1348663 MSD Analysis Date: 08/29/2016 16:43 Analysis Date: 08/29/2016 16:47 Analysis Date: 08/29/2016 16:52 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001, 1164672002, 1164672005

Results by EPA 1631 E										
		Ма	trix Spike	(ng/L)	Spik	e Duplicate	e (ng/L)			
<u>Parameter</u> Mercury	<u>Sample</u> 0.924J	<u>Spike</u> 25.0	<u>Result</u> 26.2	<u>Rec (%)</u> 101	<u>Spike</u> 25.0	<u>Result</u> 26.2	<u>Rec (%)</u> 101	<u>CL</u> 71-125	<u>RPD (%)</u> 0.00	<u>RPD CL</u> (< 24 )
Batch Information Analytical Batch: MCV5734 Analytical Method: EPA 163 Instrument: Analyst: NEG Analytical Date/Time: 8/29/20	1 E 016 4:47:3	34PM		Prep Prep Prep Prep Prep	) Batch: M Method: ) Date/Tin ) Initial Wt	//XX30134 Digestion ne: 8/26/2 ./Vol.: 50. /ol: 50.00	I Low Level 016 3:00:0 .00mL mL	Mercury (\ )0PM	N)	

Print Date: 09/02/2016 3:16:53PM

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LNG Facilities Ground	dwater Quality
Sampling and Testing Re	port - Event 2
USAL-FG-GRZZZ-00-0020	16-004 Rev. 0
	16-Dec-16

SGS Method Blank		1		S US	Sampling and Testing Report - Event 2 AL-FG-GR222-50-502016-004 Rev. 0 16-Dec-16					
Blank ID: MB for HBN 174 Blank Lab ID: 1345361	Blank ID: MB for HBN 1741657 [STS/5153] Blank Lab ID: 1345361				Matrix: Water (Surface, Eff., Ground)					
QC for Samples: 1164672001										
Results by SM21 2540C										
Parameter	Results		LOQ/CL	<u>DL</u>	Units					
Total Dissolved Solids	5.00U		10.0	3.10	mg/L					
Batch Information Analytical Batch: STS51 Analytical Method: SM2* Instrument: Analyst: LLP Analytical Date/Time: 8/*	53 I 2540C 16/2016 3:20:14PM									

SGS			US	LNG Facilities Gro Sampling and Testing GAL-FG-GRZZZ-00-0	Confidential oundwater Quality g Report - Event 2 02016-004 Rev. 0 16-Dec-16		
Duplicate Sample Summa	у						
Original Sample ID: 11646 Duplicate Sample ID: 1345 QC for Samples: 1164672001		Analysis Date: 08/16/2016 15:20 Matrix: Water (Surface, Eff., Ground)					
Results by SM21 2540C							
NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL		
Fotal Dissolved Solids	30.0	31.0	mg/L	3.30	(< 5)		
Batch Information Analytical Batch: STS5153 Analytical Method: SM21 25 Instrument: Analyst: LLP	i40C						

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#### Blank Spike Summary

Blank Spike ID: LCS for HBN 1164672 [STS5153] Blank Spike Lab ID: 1345362 Date Analyzed: 08/16/2016 15:20 Spike Duplicate ID: LCSD for HBN 1164672 [STS5153] Spike Duplicate Lab ID: 1345363 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001

Results by SM21 2540C									
		Blank Spike	e (mg/L)	5	Spike Dupli	cate (mg/L)			
Parameter	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Total Dissolved Solids	330	342	104	330	348	105	(75-125)	1.70	(< 5)
Batch Information Analytical Batch: STS5153 Analytical Method: SM21 25400 Instrument: Analyst: LLP				Pre Pre Pre Spil Dup	p Batch: p Method: p Date/Tim ke Init Wt./\ pe Init Wt./\	e: Vol.: 330 mg	g/L Extract V	'ol: 100 mL ol: 100 mL	

Print Date: 09/02/2016 3:16:56PM

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Sampling and Testing Re	port - Event 2
USAL-FG-GRZZZ-00-0020	16-004 Rev. 0
	16-Dec-16

SGS			Sa USA	mpling and Testing R L-FG-GR222-00-002(	eport - Event 2 116-004 Rev. 0 16-Dec-16		
Method Blank		·					
Blank ID: MB for HBN 174 Blank 3a]  ID: 1L4T7L1	Blank ID: MB for HBN 1741747 65[ 593174/ Blank 3a] ID: 1L4T7L1		Matrix: Watpr (5 urfacp, Eff., Ground)				
b Q for 5 aC mpe: 11s4s72001							
Rpeulte ] y SM21 2540D							
ParaCptpr [ otal 5 uenpndpd 5 olide	<u>Rpeulte</u> 0.T00U	<u>30b \$23</u> 1.00	<u>D3</u> 0.L10	<u>Unite</u> Cvເ			
Batch Information gnalytical BatcA: 5[ 5T1 ⁻ gnalytical MptAod: 5M21 InetruCpnt: gnalyet: 33P gnalytical Datp\$ iCp: hS	79201s 2:L0:LLPM						

Print Datp: 08\$02\$201s L:1s:T7PM

5G5 NortAgCprica Inc.

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

I					
Duplicate Sample Summary					
Original Sample ID: 1164726 Duplicate Sample ID: 13457	Original Sample ID: 1164726001 Duplicate Sample ID: 13457A6		y nals8i8 Date: 02/17/M016 14:30 x atriW( ater fSur,aceE. ,,œordun) R		
CP ,dr Sample8:					
116467M001					
b e8ult8 Qs SM21 2540D					
	Original	Duplicate	L nit8	h %D fN R	h %D PT
			<u></u>	<u>578 mm</u>	
v dtal Suspen) e) Sdii) 8	315	3IVb	mg/ I	IMLAU	1< 5 R
Batch Information					
y nalstical Batch: Sv S5154 y nalstical x ethd) : Sx MI M540 In8trument: y nals8t: TT%	)D				

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icate Lnit8	b %D fN R	b %D PT
mg/T	0 <b>(5</b> A	f< 5 R
	i <u>cate Lnit8</u> mg/T	icate <u>Lnit8</u> <u>b %D fN R</u> mg/T 0 <b>G</b> A

%rint Date: 0A/0M/M016 3:16:52%x

So S Udrth y merica IncG

M00 ( e8t %dtter Dri9e y nchdrageEy K A5512 t A07(56MB/843 f A07(561(5301 www@8(8)8)8(8)8)8(8)



Blank Spike ID: LCS for HBN 1164672 [STS51543 Blank Spike La] ID: 1b457b2 Date Analyzed: 08/17/2016 14:b0 Spike Duplicate ID: LCSD for HBN 1164672 [STS51543 Spike Duplicate La] ID: 1b457bb Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001

Results ] y <b>SM21 2540D</b>									
		Blank Spike	e (mg/L)	5	Spike Duplic	cate (mg/L)			
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Total Suspended Solids	50	50.0	100	50	50.0	100	(75v125)	0.00	(- 5)
Batch Information									
Analytical Batc<: STS5154				Pre	p Batc<:				
Analytical Met <od: 2540d<="" sm21="" td=""><td>)</td><td></td><td></td><td>Pre</td><td>p Met<od: n Date/Time</od: </td><td><u>o</u>.</td><td></td><td></td><td></td></od:>	)			Pre	p Met <od: n Date/Time</od: 	<u>o</u> .			
Analyst: LLP				Spi	ke Init Wt./h	ol.: 50 mg/L	Extract ho	ol: 1000 mL	
				Dup	e Init Wt./h	ol.: 50 mg/L	Extract hol	: 1000 mL	

Print Date: 0V/02/2016 b:16:5VPM

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LNG Facilities Groundwater Quality
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16-Dec-16

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Method Blank							
Blank ID: MB for HBN Blank Lab ID: 1Q4C40	Blank ID: MB for HBN 1741665 [STS/3137] Blank Lab ID: 1Q4C4C3		Mair₩V(ai2ruScrfa, 2E.ff0Edrocn) R				
mp_for Sae sl20: 11C4C7t 551							
y 20cli0 bU <b>SM21 254</b>	0B						
<u>v arae 2i2r</u> Toial Sol)) 0	<u>y 20cli0</u> 15 <b>G</b> O	<u>LPm/pL</u> 15 <b>3</b>	<u>DL</u> 15 <b>(3</b> )	<u>Onxi0</u> e g/L			
Batch Information AnalUx al Bai, h: S AnalUx al M2iho) : AnalUx al M2iho) : AnalUx al M2iho) : AnalU0: LLv AnalU0: LLv AnalUx al Dai2/Txe 2	FS3137 SMt 1 t 345B 2: 6/18/t 51C Q55:5t v M						

v mi Dai2: 58/5t /t 51C Q17:55v M

Sd S Norih Ae 2rx a In, G

t 55 ( 20i v oii2r Drx92 An, horag2EAK 83316 t 8573Ct @Q4Qf 8573C13C51 www@0@g0Goe

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	•				
Original Sample ID: 1164672001			Analysis Date:	08/19/2016 15:00 Surface Eff Grou	ad)
OC for Samples	00				ia)
1164672001					
1104072001					
Results by SM21 2540D					
NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL
Total Solids	114	140	mg/L	20.50*	(< 5)
Dt eah Infoyr t econ Analytical Batch: STS5157 Analytical Method: SM21 254 Instrument: Analyst: LLP	10B				
Print Date: 09/02/2016 3:17:01PM					

#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GR222-00-002016-004 Rev. 0 16-Dec-16

Matrix: Water (Surface, Eff., Ground)

# Method Blank

SG

Blank ID: MB for HBN 1741752 [VXX/29367] Blank Lab ID: 1345771

QC for Samples: 1164672001, 1164672003

# Results by SW8260B

Parameter	Results	LOQ/CL	DL	<u>Units</u>
1,1,1,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,1-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1,2,2-Tetrachloroethane	0.250U	0.500	0.150	ug/L
1,1,2-Trichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethane	0.500U	1.00	0.310	ug/L
1,1-Dichloroethene	0.500U	1.00	0.310	ug/L
1,1-Dichloropropene	0.500U	1.00	0.310	ug/L
1,2,3-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,3-Trichloropropane	0.500U	1.00	0.310	ug/L
1,2,4-Trichlorobenzene	0.500U	1.00	0.310	ug/L
1,2,4-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,2-Dibromo-3-chloropropane	5.00U	10.0	3.10	ug/L
1,2-Dibromoethane	0.500U	1.00	0.310	ug/L
1,2-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,2-Dichloroethane	0.250U	0.500	0.150	ug/L
1,2-Dichloropropane	0.500U	1.00	0.310	ug/L
1,3,5-Trimethylbenzene	0.500U	1.00	0.310	ug/L
1,3-Dichlorobenzene	0.500U	1.00	0.310	ug/L
1,3-Dichloropropane	0.250U	0.500	0.150	ug/L
1,4-Dichlorobenzene	0.250U	0.500	0.150	ug/L
2,2-Dichloropropane	0.500U	1.00	0.310	ug/L
2-Butanone (MEK)	5.00U	10.0	3.10	ug/L
2-Chlorotoluene	0.500U	1.00	0.310	ug/L
2-Hexanone	5.00U	10.0	3.10	ug/L
4-Chlorotoluene	0.500U	1.00	0.310	ug/L
4-Isopropyltoluene	0.500U	1.00	0.310	ug/L
4-Methyl-2-pentanone (MIBK)	5.00U	10.0	3.10	ug/L
Benzene	0.200U	0.400	0.120	ug/L
Bromobenzene	0.500U	1.00	0.310	ug/L
Bromochloromethane	0.500U	1.00	0.310	ug/L
Bromodichloromethane	0.250U	0.500	0.150	ug/L
Bromoform	0.500U	1.00	0.310	ug/L
Bromomethane	5.00U	10.0	3.10	ug/L
Carbon disulfide	5.00U	10.0	3.10	ug/L
Carbon tetrachloride	0.500U	1.00	0.310	ug/L
Chlorobenzene	0.250U	0.500	0.150	ug/L
Chloroethane	0.500U	1.00	0.310	ug/L
Chloroform	0.500U	1.00	0.300	ug/L

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#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GR222-00-002016-004 Rev. 0 16-Dec-16

# Method Blank

SG:

Blank ID: MB for HBN 1741752 [VXX/29367] Blank Lab ID: 1345771 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001, 1164672003

#### Results by SW8260B

Parameter	<u>Results</u>	LOQ/CL	<u>DL</u>	<u>Units</u>
Chloromethane	0.500U	1.00	0.310	ug/L
cis-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
cis-1,3-Dichloropropene	0.250U	0.500	0.150	ug/L
Dibromochloromethane	0.250U	0.500	0.150	ug/L
Dibromomethane	0.500U	1.00	0.310	ug/L
Dichlorodifluoromethane	0.500U	1.00	0.310	ug/L
Ethylbenzene	0.500U	1.00	0.310	ug/L
Freon-113	5.00U	10.0	3.10	ug/L
Hexachlorobutadiene	0.500U	1.00	0.310	ug/L
Isopropylbenzene (Cumene)	0.500U	1.00	0.310	ug/L
Methylene chloride	2.50U	5.00	1.00	ug/L
Methyl-t-butyl ether	5.00U	10.0	3.10	ug/L
Naphthalene	5.00U	10.0	3.10	ug/L
n-Butylbenzene	0.500U	1.00	0.310	ug/L
n-Propylbenzene	0.500U	1.00	0.310	ug/L
o-Xylene	0.500U	1.00	0.310	ug/L
P & M -Xylene	1.00U	2.00	0.620	ug/L
sec-Butylbenzene	0.500U	1.00	0.310	ug/L
Styrene	0.500U	1.00	0.310	ug/L
tert-Butylbenzene	0.500U	1.00	0.310	ug/L
Tetrachloroethene	0.500U	1.00	0.310	ug/L
Toluene	0.500U	1.00	0.310	ug/L
trans-1,2-Dichloroethene	0.500U	1.00	0.310	ug/L
trans-1,3-Dichloropropene	0.500U	1.00	0.310	ug/L
Trichloroethene	0.500U	1.00	0.310	ug/L
Trichlorofluoromethane	0.500U	1.00	0.310	ug/L
Vinyl acetate	5.00U	10.0	3.10	ug/L
Vinyl chloride	0.500U	1.00	0.310	ug/L
Xylenes (total)	1.50U	3.00	1.00	ug/L
Surrogates				
1,2-Dichloroethane-D4 (surr)	101	81-118		%
4-Bromofluorobenzene (surr)	103	85-114		%
Toluene-d8 (surr)	99.6	89-112		%

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Method Blank		ì <b></b>					
Blank ID: MB for HBN 1741752 [VXX/29367] Blank Lab ID: 1345771		Matrix: Water (Surface, Eff., Ground)					
QC for Samples: 1164672001, 1164672003	3						
Results by SW8260B		)(					
Parameter	Results	LOQ/CL	DL	<u>Units</u>			
Batch Information							
Analytical Batch: VMS16076 Analytical Method: SW8260B Instrument: VSA Agilent GC/MS 7890B/5977A Analyst: TJT Analytical Date/Time: 8/15/2016 10:18:00AM		Prep Batch: VXX29367 Prep Method: SW5030B Prep Date/Time: 8/15/2016 6:00:00AM Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL					

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GR222-00-002016-004 Rev. 0 16-Dec-16

#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1164672 [VXX29367] Blank Spike Lab ID: 1345772 Date Analyzed: 08/15/2016 10:34 Spike Duplicate ID: LCSD for HBN 1164672 [VXX29367] Spike Duplicate Lab ID: 1345773 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001, 1164672003

#### Results by SW8260B

	Blank Spike (ug/L)			Spike Duplicate (ug/L)					
Parameter	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
1,1,1,2-Tetrachloroethane	30	29.9	100	30	30.8	103	(78-124)	2.70	(< 20)
1,1,1-Trichloroethane	30	31.3	104	30	32.5	108	(74-131)	3.80	(< 20)
1,1,2,2-Tetrachloroethane	30	31.7	106	30	32.9	110	(71-121)	3.70	(< 20)
1,1,2-Trichloroethane	30	31.3	104	30	32.7	109	(80-119)	4.40	(< 20)
1,1-Dichloroethane	30	30.7	102	30	31.9	106	(77-125)	3.70	(< 20)
1,1-Dichloroethene	30	29.4	98	30	31.0	103	(71-131)	5.30	(< 20)
1,1-Dichloropropene	30	31.0	103	30	32.1	107	(79-125)	3.40	(< 20)
1,2,3-Trichlorobenzene	30	31.3	104	30	33.4	111	(69-129)	6.50	(< 20)
1,2,3-Trichloropropane	30	30.9	103	30	33.1	110	(73-122)	6.80	(< 20)
1,2,4-Trichlorobenzene	30	32.2	107	30	33.3	111	(69-130)	3.10	(< 20)
1,2,4-Trimethylbenzene	30	32.4	108	30	33.3	111	(79-124)	2.60	(< 20)
1,2-Dibromo-3-chloropropane	30	29.0	97	30	33.4	111	(62-128)	14.00	(< 20)
1,2-Dibromoethane	30	32.0	107	30	33.6	112	(77-121)	5.10	(< 20)
1,2-Dichlorobenzene	30	30.9	103	30	32.0	107	(80-119)	3.30	(< 20)
1,2-Dichloroethane	30	29.3	98	30	30.1	100	(73-128)	2.50	(< 20)
1,2-Dichloropropane	30	31.6	105	30	32.8	109	(78-122)	3.40	(< 20)
1,3,5-Trimethylbenzene	30	32.1	107	30	33.1	110	(75-124)	3.10	(< 20)
1,3-Dichlorobenzene	30	31.0	103	30	31.9	106	(80-119)	2.70	(< 20)
1,3-Dichloropropane	30	32.0	107	30	33.5	112	(80-119)	4.60	(< 20)
1,4-Dichlorobenzene	30	31.8	106	30	32.2	107	(79-118)	1.40	(< 20)
2,2-Dichloropropane	30	32.9	110	30	34.1	114	(60-139)	3.60	(< 20)
2-Butanone (MEK)	90	83.3	93	90	103	115	(56-143)	21.40	* (< 20)
2-Chlorotoluene	30	32.2	107	30	32.6	109	(79-122)	1.50	(< 20)
2-Hexanone	90	84.3	94	90	101	112	(57-139)	17.80	(< 20)
4-Chlorotoluene	30	32.0	107	30	32.8	109	(78-122)	2.60	(< 20)
4-Isopropyltoluene	30	32.2	107	30	33.3	111	(77-127)	3.30	(< 20)
4-Methyl-2-pentanone (MIBK)	90	85.6	95	90	97.9	109	(67-130)	13.50	(< 20)
Benzene	30	30.6	102	30	31.6	105	(79-120)	3.30	(< 20)
Bromobenzene	30	31.5	105	30	31.6	105	(80-120)	0.35	(< 20)
Bromochloromethane	30	30.6	102	30	31.5	105	(78-123)	2.90	(< 20)
Bromodichloromethane	30	32.2	107	30	33.2	111	(79-125)	3.20	(< 20)
Bromoform	30	30.2	101	30	31.6	105	(66-130)	4.40	(< 20)
Bromomethane	30	29.0	97	30	30.3	101	(53-141)	4.40	(< 20)
Carbon disulfide	45	43.9	98	45	46.4	103	(64-133)	5.30	(< 20)

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

#### Blank Spike Summary

Blank Spike ID: LCS for HBN 1164672 [VXX29367] Blank Spike Lab ID: 1345772 Date Analyzed: 08/15/2016 10:34 Spike Duplicate ID: LCSD for HBN 1164672 [VXX29367] Spike Duplicate Lab ID: 1345773 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001, 1164672003

#### Results by SW8260B

	Blank Spike (ug/L)			;	Spike Duplicate (ug/L)				
Parameter	Spike	<u>Result</u>	<u>Rec (%)</u>	<u>Spike</u>	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Carbon tetrachloride	30	32.4	108	30	33.5	112	(72-136)	3.30	(< 20)
Chlorobenzene	30	30.8	103	30	31.9	106	(82-118)	3.70	(< 20)
Chloroethane	30	26.4	88	30	29.0	97	(60-138)	9.40	(< 20)
Chloroform	30	29.0	97	30	30.1	100	(79-124)	3.70	(< 20)
Chloromethane	30	26.4	88	30	31.3	104	(50-139)	16.80	(< 20)
cis-1,2-Dichloroethene	30	30.4	101	30	31.5	105	(78-123)	3.50	(< 20)
cis-1,3-Dichloropropene	30	30.4	101	30	31.5	105	(75-124)	3.60	(< 20)
Dibromochloromethane	30	30.3	101	30	31.0	103	(74-126)	2.30	(< 20)
Dibromomethane	30	30.2	101	30	31.4	105	(79-123)	3.80	(< 20)
Dichlorodifluoromethane	30	26.0	87	30	27.3	91	(32-152)	5.00	(< 20)
Ethylbenzene	30	31.1	104	30	32.6	109	(79-121)	4.80	(< 20)
Freon-113	45	45.1	100	45	47.4	105	(70-136)	5.10	(< 20)
Hexachlorobutadiene	30	31.5	105	30	33.2	111	(66-134)	5.20	(< 20)
Isopropylbenzene (Cumene)	30	31.6	105	30	33.3	111	(72-131)	5.50	(< 20)
Methylene chloride	30	28.1	94	30	29.1	97	(74-124)	3.30	(< 20)
Methyl-t-butyl ether	45	47.0	104	45	49.3	109	(71-124)	4.70	(< 20)
Naphthalene	30	28.5	95	30	31.5	105	(61-128)	10.00	(< 20)
n-Butylbenzene	30	29.3	98	30	30.3	101	(75-128)	3.30	(< 20)
n-Propylbenzene	30	31.5	105	30	32.5	108	(76-126)	3.00	(< 20 )
o-Xylene	30	31.6	105	30	32.8	109	(78-122)	3.90	(< 20 )
P & M -Xylene	60	62.3	104	60	65.3	109	(80-121)	4.60	(< 20)
sec-Butylbenzene	30	32.4	108	30	33.6	112	(77-126)	3.80	(< 20 )
Styrene	30	29.2	97	30	30.4	101	(78-123)	3.90	(< 20 )
tert-Butylbenzene	30	32.2	107	30	32.7	109	(78-124)	1.60	(< 20 )
Tetrachloroethene	30	30.7	102	30	31.9	106	(74-129)	4.00	(< 20 )
Toluene	30	29.6	99	30	30.8	103	(80-121)	3.90	(< 20)
trans-1,2-Dichloroethene	30	29.3	98	30	30.6	102	(75-124)	4.20	(< 20 )
trans-1,3-Dichloropropene	30	30.6	102	30	31.7	106	(73-127)	3.50	(< 20)
Trichloroethene	30	30.7	102	30	31.9	106	(79-123)	3.80	(< 20)
Trichlorofluoromethane	30	27.6	92	30	29.5	98	(65-141)	6.30	(< 20)
Vinyl acetate	30	31.0	103	30	33.0	110	(54-146)	6.30	(< 20)
Vinyl chloride	30	27.9	93	30	29.6	99	(58-137)	6.00	(< 20)
Xylenes (total)	90	93.9	104	90	98.1	109	(79-121)	4.40	(< 20 )

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Blank Spike ID: LCS for HBN 1164672 [VXX29367] Blank Spike Lab ID: 1345772 Date Analyzed: 08/15/2016 10:34 Spike Duplicate ID: LCSD for HBN 1164672 [VXX29367] Spike Duplicate Lab ID: 1345773 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001, 1164672003

# Results by SW8260B

· · ·									
		Blank Spil	ke (%)		Spike Duplicate (%)				
Parameter	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Surrogates									
1,2-Dichloroethane-D4 (surr)	30	98.4	98	30	99.3	99	(81-118)	0.84	
4-Bromofluorobenzene (surr)	30	102	102	30	99.9	100	(85-114)	1.60	
Toluene-d8 (surr)	30	97.8	98	30	98.4	98	(89-112)	0.58	

#### **Batch Information**

Analytical Batch: VMS16076 Analytical Method: SW8260B Instrument: VSA Agilent GC/MS 7890B/5977A Analyst: TJT Prep Batch: VXX29367 Prep Method: SW5030B Prep Date/Time: 08/15/2016 06:00 Spike Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL Dupe Init Wt./Vol.: 30 ug/L Extract Vol: 5 mL

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SGS North America Inc.

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# Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

<b>SGS</b>			Sar USAL	npling and Testing Re FG-GRZZZ-00-00201	port - Event 2 6-004 Rev. 0 16-Dec-16
<b>Method Blank</b> Blank ID: MB for HBN 17419	17 [VXX/29386]	Matrix	: Water (Surfa	ce, Eff., Ground)	
Blank Lab ID: 1346639 QC for Samples: 1164672001, 1164672004					
Results by AK101					
Parameter Gasoline Range Organics	<u>Results</u> 0.0500U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	
<b>Surrogates</b> 4-Bromofluorobenzene (surr)	88.7	50-150		%	
atch Information					
Analytical Batch: VFC13238 Analytical Method: AK101 Instrument: Agilent 7890 PID/FID Analyst: ST Analytical Date/Time: 8/19/2016 10:13:00AM		Prep Ba Prep Me Prep Da Prep Init Prep Ex	tch: VXX29386 hthod: SW5030B te/Time: 8/19/20 iial Wt./Vol.: 5 m tract Vol: 5 mL	3 016 6:00:00AM IL	



Blank Spike ID: LCS for HBN 1164672 [VXX29386] Blank Spike Lab ID: 1346640 Date Analyzed: 08/19/2016 20:54 Spike Duplicate ID: LCSD for HBN 1164672 [VXX29386] Spike Duplicate Lab ID: 1346641 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001, 1164672004

Results by AK101									
	1	Blank Spike	e (mg/L)	S	pike Dupli	cate (mg/L)			
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Gasoline Range Organics	1.00	0.865	87	1.00	0.776	78	(60-120)	10.90	(< 20 )
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	106	106	0.0500	93.4	93	(50-150)	12.20	
Batch Information									
Analytical Batch: VFC13238 Analytical Method: AK101 Instrument: Agilent 7890 PID/ Analyst: ST	VFC13238       Prep Batch: VXX29386         d: AK101       Prep Method: SW5030B         ant 7890 PID/FID       Prep Date/Time: 08/19/2016 06:00         Spike Init Wt./Vol.: 1.00 mg/L       Extract Vol: 5 mL         Dupo bit Wt (Vol.: 1.00 mg/L       Extract Vol: 5 mL								

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LNG Facilities Groundwater Quality
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16-Dec-16

Method Blank         Blank ID: MB for HBN 1741490 [WAT/10712]         Blank Lab ID: 1344520         QC for Samples:         1164672001         Results by SM21 2130B         Parameter       Results         LOQ/CL       DL       Units         Turbidity       0.100J       0.200       0.100         Batch Information	<b>SGS</b>			Sa USA	mpling and Testing Rer L-FG-GRZZZ-00-00201	6-004 Rev. 0 16-Dec-16
Blank Lab ID: 11344520 QC for Samples: 1164672001 Results by SM21 2130B Parameter Results UOU/CL DL Units Turbidity 0.100J 0.200 0.100 NTU 3atch Information Analytical Batch: WAT10712 Analytical Batch: WAT10712 Analytical Date/Time: 8/12/2016 12:16:00PM	Method Blank	1741400 [[4]/4]/10712]	Matri	v: Mator (Surfa	aco Eff Ground)	
QC for Samples:         1164672001         Results by SM21 2130B         Parameter       Results       LOQ/CL       DL       Units         Turbidity       0.100       0.200       0.100       NTU         Satch Information       Analytical Batch: WAT10712       Analytical Method: SM21 2130B         Instrument: Turbidimeter       Analytical Date/Time: 8/12/2016 12:16:00PM         Analytical Date/Time: 8/12/2016 12:16:00PM       Difference	Blank Lab ID: 134452	0	Iviau		ce, Ell., Glound)	
Arguntes         LOQ/CL         DL         Units           Turbidity         0.100J         0.200         0.100         NTU           Statch Information   Analytical Batch: WAT10712 Analytical Method: SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market SM21 21308 Market	QC for Samples: 1164672001					
Parameter TurbidityResults 0.100JLOQ/CLDLUnits Units3dech InformationAnalytical Batch: WAT10712 Analytical Batch: Turbidimeter Analytical Date/Time: 8/12/2016 12:16:00PMAnalytical Date/Time: 8/12/2016 12:16:00PM	Results by SM21 213	)B				
Satch Information Analytical Batch: WAT10712 Analytical Method: SM21 2130B Instrument: Turbidimeter Analyst: NEG Analytical Date/Time: 8/12/2016 12:16:00PM	<u>Parameter</u> Turbidity	<u>Results</u> 0.100J	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	

Print Date: 09/02/2016 3:17:08PM

SGS			US	LNG Facilities Gr Sampling and Testin SAL-FG-GRZZZ-00-0	Confidential oundwater Quality g Report - Event 2 02016-004 Rev. 0 16-Dec-16		
Original Sample ID: 1164672 Duplicate Sample ID: 134452 QC for Samples: 1164672001		Analysis Date: 08/12/2016 12:16 Matrix: Water (Surface, Eff., Ground)					
Results by SM21 2130B							
NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL		
Turbidity	75.0	75.0	NTU	0.00	(v 20)		
Batch Information Analytical <atcb: wat10712<br="">Analytical MetBod: SM21 2130 Instrument: Turbidimeter Analyst: NEG</atcb:>	)<						

Print Date: 0h/02/2016 3:17:0hPM

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<b>GS</b>				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GR222-00-002016-004 Rev. 0 16-Dec-16
3lank Spike Summary				
31ank Spike ID: LCS for HBN 31ank Spike Lab ID: 1344521 Date Analyzed: 08/12/2016	1164672 [ 12:16	WAT1071	2]	Matrix: Water (Surface, Eff., Ground)
QC for Samples: 116467200	)1			
Results by SM21 2130B				
	E	Blank Spike	e (NTU)	
<u>²arameter</u> ⁻ urbidity	<u>Spike</u> 10	<u>Result</u> 11.0	<u>Rec (%)</u> 110	<u>CL</u> (90-110)
Batch Information				
Analytical Batch: WAT10712 Analytical Method: SM21 2130E Instrument: Turbidimeter Analyst: NEG	3			Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 10 NTU Extract Vol: 1 mL Dupe Init Wt./Vol.: Extract Vol:
nt Date: 09/02/2016 3:17:10PM	200	West Pott	er Drive Anchor	rage AK 95518

Blank Spike Sur LCS for HBN 1164672 (WAT10712) Blank Spike LDD: 1344524 Date Analyzed: 08/12/2016 12:16 Cf of Samples: 1164672001 Blank Spike (NTU) Parameter Spike (NTU) Parameter Spike (NTU) Parameter Spike (NTU) Parameter Spike (NTU) Parameter Spike (NTU) Parameter Spike (NTU) Prop Matching Instrument: Turbidimeter Analysical Matching SM2 (23 100) Instrument: Turbidimeter SM2 (23 00) Instrument: Turbidimeter SM2	SGS				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Lis LCS for HEN 1164672 (WAT10712) Blank Spike Lab U2: 124424 Date Analyzei: 00/12/2016 12:19 Matrix: Water (Surface, Eff, Ground) Cf or Samples: 118467201 Results by SM2121308 Blank Spike (NTU) Parameter Solute Matrix: Result Result Analytical Batch: WAT10712 Analytical Batch: WAT10	Blank Spike Summary				
Cord Sample:       104672001         Results by SM21 21308       Bank Spike (NTU)         Turbidity       10       10       10       (90-110)         Batch Information       Information       Prep Batch:       (90-110)         Instrument:       Turbidimeter       Spike (NTU)       Prep Datch:         Instrument:       Turbidimeter       Spike (NTU)       Spike (NTU)         Analys:       NEG       Prep Datch:       Prep Datch:         Instrument:       Spike (NTU/Noi):       10 NTU       Extract Voi: 1 mL         Dupe Init WL/Voi:       Extract Voi: 1 mL       Dupe Init WL/Voi:       Extract Voi: 1 mL	Blank Spike ID: LCS for HBN 1 Blank Spike Lab ID: 1344524 Date Analyzed: 08/12/2016 1	164672 2:16	[WAT1071	2]	Matrix: Water (Surface, Eff., Ground)
Beaults by SM21 2130B         Barnelier       Sink       Result       Rec CS       CL         Turbidiy       10       11.0       10       (0.11.0)         Bath Information       Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marken Marke	QC for Samples: 116467200	1			
Biank Spike (NTU)         Parameter       Spike Result Resc (%)       CL         Tubidity       10       11.0       10       (90-110)         Batch Information       Analytical Method: SM2121308       Prop Batch: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: Prop Method: P	Results by SM21 2130B				
Parameter       Solite       Result       Rec(%)       CL         Turbidity       10       11.0       110       (90-110)         Batch       Marking Solita       Prep Batch:       Prep Method:         Analytical Batch:       WAT10712       Prep Method:       Prep DateTime:         Analytical Batch:       WAT10712       Prep Method:       Prep DateTime:         Analytical Batch:       WAT10712       Prep Method:       Prep Method:         Analytical Batch:       Wat1001       DateTime:       DateTime:         Analytical Wat2016       Site Int WL/Vol:       Extract Vol:       1 mL         Dup Init WL/Vol:       Extract Vol:       1 mL       Dup Init WL/Vol:       Extract Vol:         with Date 2002016       Site Method:       Marking Add Participe       Add Participe         With Date 2002016       Site Method:       Marking Add Participe       Add Participe	_		Blank Spike	e (NTU)	
Batch Information         Analytical Batch: WAT19718         Analytical Method: SW12130B         Instrument: Turbidimeter         Analysit: NEG    Prep Batch:: Prep Date/Time: Spike Init WL/Vol: 10 NTU Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL With the WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: 2 mL Due Init WL/Vol: 2 mL Due Init WL/Vol: 2 mL Due Init WL/Vol: 2 mL Due Init WL/Vol: 2 mL Due Init WL/Vol: 2 mL Due Init WL/Vol: 2 mL Due Init WL/Vol: 2 mL Due Init WL/Vol: 2 mL Due Init WL/Vol: 2 mL Due Init WL/Vol: 2 mL Due Init WL/Vol: 2 mL Due Init WL/Vol: 2 mL Due Init WL/Vol: 2 mL Due Init WL	<u>Parameter</u> Turbidity	<u>Spike</u> 10	<u>Result</u> 11.0	<u>Rec (%)</u> 110	<u>CL</u> ( 90-110 )
Analytical Batch: WAT'0712         Analytical Method: SW21 2130B         Instrument: Urbidimeter         Analyst: NEG    Prep Batch: Prep Batch: Prep DateTime: Spike Init WL/Vol: 10 NTU Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: Extract Vol: 1 mL Due Init WL/Vol: 2 ML Due Init WL/Vol: 2 ML Due Init WL/Vol: 2 ML Due Init WL/Vol: 2 ML Due Init WL/Vol: 2 ML Due Init WL/Vol: 2 ML Due Init WL/Vol: 2 ML Due Init WL/Vol: 2 ML Due Init WL/Vol: 2 ML Due Init WL/Vol: 2 ML </td <td>Batch Information</td> <td></td> <td></td> <td></td> <td></td>	Batch Information				
Int Date: 09/02/2016 3:17:10PM	Analytical Batch: WAT10712 Analytical Method: SM21 2130B Instrument: Turbidimeter Analyst: NEG	i			Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 10 NTU Extract Vol: 1 mL Dupe Init Wt./Vol.: Extract Vol:
int Date: 09/02/2016 3:17:10PM 200 West Potter Drive Anchorage, AK 95518 1007 562 2043 f 907 561 501 www us sec com					
nt Date: 09/02/2016 3:17:10PM 200 West Potter Drive Anchorage, AK 95518 1907 562 23431 907 561 5301 www.us.scs.com					
nt Date: 09/02/2016 3:17:10PM 200 West Potter Drive Anchorage, AK 95518 t 907 562 2343 f 907 561 5301 www us sos com					
nt Date: 09/02/2016 3:17:10PM 200 West Potter Drive Anchorage, AK 95518 t 907 562 2343 f 907 561 5301 www.us sos com					
int Date: 09/02/2016 3:17:10PM SGS North America Inc. 200 West Potter Drive Anchorage, AK 95518 t 907 562 2343 f 907 561 5301, www.us sos com					
int Date: 09/02/2016 3:17:10PM 200 West Potter Drive Anchorage, AK 95518 SGS North America Inc. 200 West Potter Drive Anchorage, AK 95518 t 907 562 2343 f 907 561 5301 www.us sqs com					
	int Date: 09/02/2016 3:17:10PM SGS North America Inc	200	) West Pott	er Drive Anchor	rage, AK 95518

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16-Dec-16

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Method Blank Blank ID: MB for HBN 1741 Blank baQID: 154]]]C mp for Tae sl20: 11C4C7t 661	765 [S T/ 3 54] L	Mairx	₩S ai2r (Turf	ac2, Eff., Ground)	
R20uli0 Qy EPA 410.4 <u>/ arae 2i2r</u> p P2e xal OWyv2n D2e and Batch Information gnalyixal BaicP: S T/ ] 54] gnalyixal M2iPod: E/ g 41 In0irue 2ni: gnaly0i: ABE gnalyixal Dai23te 2: 831C	<u>R20uli0</u> 16.6U 6.4 3 61C 5:56:66/ M	<u>bOmֆ b</u> t 6.6	Db Ct 6	<u>Unxi0</u> e v3b	

TGT NoriPge 2rxa Inc.



Blank Spike ID: LCS for HBN 1164672 [WSP5345] Blank Spike Lab ID: 1345557 Date Analyzed: 08/16/2016 15:30 Spike Duplicate ID: LCSD for HBN 1164672 [WSP5345] Spike Duplicate Lab ID: 1345558 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001

Results by EPA 410.4									
		Blank Spike	e (mg/L)	5	Spike Dupli	cate (mg/L)			
Parameter	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Chemical Oxygen Demand	500	490	98	500	493	99	(90-110)	0.50	(< 25)
Batch Information Analytical Batch: WSP5345 Analytical Method: EPA 410.4 Instrument: Analyst: KBE				Pre Pre Pre Spil	p Batch: p Method: p Date/Tim ke Init Wt./\	e: Vol.: 500 mg	J/L Extract ∖	/ol: 2 mL	

Print Date: 09/02/2016 3:17:13PM

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#### Matrix Spike Summary Original Sample ID: 1164639001 Analysis Date: 08/16/2016 15:30 MS Sample ID: 1345559 MS Analysis Date: 08/16/2016 15:30 MSD Sample ID: 1345560 MSD Analysis Date: 08/16/2016 15:30 Matrix: Water (Surface, Eff., Ground) QC for Samples: 1164672001 Results by EPA 410.4 Matrix Spike (mg/L) Spike Duplicate (mg/L) Parameter Sample <u>Spike</u> Result Rec (%) <u>Spike</u> Result Rec (%) <u>CL</u> RPD (%) RPD CL Chemical Oxygen Demand 30.0 560 500 106 500 512 96 90-110 9.00 (< 25) **Batch Information** Analytical Batch: WSP5345 Prep Batch: Analytical Method: EPA 410.4 Prep Method: Prep Date/Time: Instrument: Analyst: KBE Prep Initial Wt./Vol.: 2.00mL Analytical Date/Time: 8/16/2016 3:30:00PM Prep Extract Vol: 2.00mL

Print Date: 09/02/2016 3:17:14PM

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			Sa USAI	mpling and Testing Report. -FG-GRZZZ-00-002016-00 16	- Event 2 A Rev. 0 3-Dec-16
Method Blank					
Blank ID: MB for HBN 1 Blank Lab ID: 1346019	741796 [WTC/2620]	Matri	x: Water (Surfa	ce, Eff., Ground)	
QC for Samples: 1164672002					
Results by SM 5310B					
<u>Parameter</u> Total Organic Carbon	<u>Results</u> 0.250U	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	

Print Date: 09/02/2016 3:17:15PM

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Blank Spike Summary Blank Spike ID: LCS for HBN Blank Spike Lab ID: 1346017 Date Analyzed: 08/17/2016	1164672	[WTC2620	]	
QC for Samples: 11646720	02			Matrix: Water (Surface, Eff., Ground)
Results by SM 5310B				
		Blank Spike	e (mg/L)	
<u>Parameter</u> Total Organic Carbon	<u>Spike</u> 75	<u>Result</u> 79.0	<u>Rec (%)</u> 105	<u>CL</u> ( 80-120 )
Batch Information				
Analytical Batch: WTC2620 Analytical Method: SM 5310B Instrument: TOC Analyzer Analyst: VDL				Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 75 mg/L Extract Vol: 30 mL Dupe Init Wt./Vol.: Extract Vol:
int Date: 09/02/2016 3:17:17PM				
SGS North America In	C. 200	) West Potte )7.562.2343	er Drive Anchor f 907.561.530	rage, AK 95518 11 www.us.sgs.com

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16 Matrix Spike Summary Original Sample ID: 1168390001 Analysis Date: 08/17/2016 15:52 MS Sample ID: 1345982 MS Analysis Date: 08/17/2016 16:05 MSD Sample ID: 1345983 MSD Analysis Date: 08/17/2016 16:19 Matrix: Drinking Water QC for Samples: 1164672002 Results by SM 5310B Matrix Spike (mg/L) Spike Duplicate (mg/L) Parameter Sample <u>Spike</u> Result Rec (%) <u>Spike</u> Result Rec (%) <u>CL</u> RPD (%) RPD CL Total Organic Carbon 7.87 10.0 18.9 111 10.0 19.1 112 75-125 0.58 (< 25) **Batch Information** Analytical Batch: WTC2620 Prep Batch: Analytical Method: SM 5310B Prep Method: Instrument: TOC Analyzer Prep Date/Time: Analyst: VDL Prep Initial Wt./Vol.: 30.00mL Analytical Date/Time: 8/17/2016 4:05:49PM Prep Extract Vol: 30.00mL

Print Date: 09/02/2016 3:17:18PM

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16-Dec-16

<b>SGS</b>			Sa USAI	mpling and Testing Report- Even -FG-GRZZZ-00-002016-004 Rec 16-Dec-	1 2 - 0 -16
Method Blank					
Blank ID: MB for HBN 174 Blank Lab ID: 1347699	2157 [WTC/2621]	Matrix	k: Water (Surfa	ce, Eff., Ground)	
QC for Samples: 1164672001					
Results by SM 5310B		·			
<u>Parameter</u> Total Organic Carbon	<u>Results</u> 0.304J	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	
atch Information					
Analytical Batch: WTC26 Analytical Method: SM 53 Instrument: TOC Analyze Analyst: VDL Analytical Date/Time: 8/2	21 i10B r 3/2016 4:43:08PM				

Print Date: 09/02/2016 3:17:19PM

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200 West Potter Drive Anchorage, AK 95518 t 907.562.2343 f 907.561.5301 www.us.sgs.com

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Blank Spike Summary				
Blank Spike ID: LCS for HBN Blank Spike La] ID: 1b47637 Date Analyzed: 8/ 52b52816	1164672 16:27	[WTC2621	0	Matrix: Water (Surface, Eff., Ground)
QC for Samples: 11646728	81			
Results ] y SM 5310B				
		Blank Spike	e (mg <b>5</b> _)	
<u>Parameter</u> Total Organic Car] on	<u>Spike</u> 7-	<u>Result</u> 77.3	<u>Rec (%)</u> 184	<u>CL</u> (/89128)
Batch Information				
Analytical Batch: WTC2621 Analytical Method: SM 5310B Instrument: TOC Analyzer Analyst: VDL				Prep Batch: Prep Method: Prep Date5Time: Spike Init Wt.5/ol.: 7- mg5L Extract Vol: b8 mL Dupe Init Wt.5/ol.: Extract Vol:
rint Date: 8338252816 b:17:28PM				
SGS North America In	C. <u>t 38</u>	5 vvest Pott 87 62.2b4l	er Drive Anchoi o <b>f</b> 387 61 b8	rage, AK 3 1/ 11 www.us.sgs.com

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- Matrix Spike Summary										
Original Sample ID: 116 4 S Sample ID: 10833M 4 SD Sample ID: 10833 T. Rer SampleA: 11686	83901M11 18 4 S 81M9 4 SD 33/ MM1		_		5nal2AiA 5nal2AiA 5nal2AiA 4 ayri7: 3	NDaye: Mi NDaye: Mi NDaye: Mi Nayer KSN	st/0t/M16 st/0t/M16 st/0t/M16 M/Raueb(R8	16:9s 13:11 13:/3 b) rcWiQ	C	
t eavilya o2 SM 5310B		4 av	ri7 SpiPe k	mat%C	SpiPe	e DWøliuave	e kmat%C			
<u>- arameyer</u> Bcyal Organiu . arocn	<u>Sample</u> 3169	<u>SpiPe</u> 1MM	<u>f eAWy</u> 1sL6	<u>f eu k&lt; C</u> 11M	<u>SpiPe</u> 1MM	<u>f eAWy</u> 1sL3	<u>f eu k&lt; C</u> 111	<u>. %</u> 39h1/ 9	<u>f - D k&lt; (</u> M9d	C <u>f - D . %</u> kV / 9 C
5 nal2Ąy. GD% 5 nal2yiual DayetBime: s	t/ 0t/ M16 9:11:8s-	- 4		- rep	Iniyial x y	dtGcIL: 0MM GcI: 0MMM	LMm% m%			

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Duplicate Sample Sum Original Sample ID: 11 Duplicate Sample ID: 1 QC for Samples: 1164672001	i <b>mary</b> 64594001 345864		Analysis Date: 0 Matrix: Water (S	8/15/2016 19:37 urface, Eff., Grou	nd)
Results by <b>SM21 4500</b> -	H B Original	Duplicato	Lipite		
NAME pH	<u>- 7.80</u>	7.80	offics pH units	0.00	(< 5)
Instrument: Titration Analyst: ACF					

SGS	-		Sa USA	LNG Facilities Gro ampling and Testing L-FG-GR222-00-0	Confidential oundwater Quality 2 Report - Event 2 02016-004 Rev. 0 16-Dec-16
Duplicate Sample Su	ummary				
Original Sample ID: Duplicate Sample ID: QC for Samples: 1164672001	1164594002 1345865		Analysis Date: 0 Matrix: Water (S	8/15/2016 19:57 urface, Eff., Grou	ind)
Results by SM21 450	0-Н В				
NAME	Original	Duplicate	Units	<u>RPD (%)</u>	RPD CL
рН	8.00	8.10	pH units	1.20	(< 5)

Print Date: 09/02/2016 3:17:23PM

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Blank Spike Summary			
Blank Spike ID: LCS for Hl Blank Spike Lab ID: 13458 Date Analyzed: 08/15/20	BN 1164672 [WTI449 861 16 18:16	7]	Matrix: Water (Surface, Eff., Ground)
QC for Samples: 11646	72001		
Results by SM21 4500-H E	3		
	Blank Spike	e (pH units)	
<u>Parameter</u> pH	<u>Spike</u> <u>Result</u> 7 7.02	<u>Rec (%)</u> 100	<u>CL</u> (99-101)
Batch Information			
Analytical Batch: WTI4497 Analytical Method: SM21 4 Instrument: Titration Analyst: ACF	500-Н В		Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 7 pH units Extract Vol: 1 mL Dupe Init Wt./Vol.: Extract Vol:
rint Date: 09/02/2016 3:17:24PM			
SGS North Americ	200 West Po	otter Drive Ancho	rage, AK 95518

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LNG Facilities Groundwater Quality
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16-Dec-16

Blank ID: MB for HBN 1741770 [WTI/4499] Blank Lab ID: 1345885 QC for Samples: 1164672001 Results by SM21 2320B Parameter Results LOQ/CL DL Units Alkalinity 5.00U 10.0 3.10 mg/L Batch Information Analytical Batch: WTI4499 Analytical Batch: WTI4499 Instrument: Titration Analyst: ACF Analytical Date/Time: 8/15/2016 7:03:14PM	Method Blank			S US/	Sampling and Testing Report - Event 2 AL-FG-GRZZ2-00-002016-004 Rev. 0 16-Dec-16
Results by SM21 2320B         Parameter       Results       LOQ/CL       DL       Units         Alkalinity       5.00U       10.0       3.10       mg/L         Batch Information       Analytical Batch: WTI4499       Analytical Method: SM21 2320B       Instrument: Titration         Analyst: ACF       Analytical Date/Time: 8/15/2016       7:03:14PM	Blank ID: MB for HBN Blank Lab ID: 134588 QC for Samples: 1164672001	1741770 [WTI/4499] 5	Matrix	x: Water (Suri	face, Eff., Ground)
Batch Information         Analytical Batch: WTI4499         Analytical Method: SM21 2320B         Instrument: Titration         Analyst: ACF         Analytical Date/Time: 8/15/2016	Results by <b>SM21 2320</b> <u>Parameter</u> Alkalinity	I <b>B</b> <u>Results</u> 5.00U	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L
	Satch Information Analytical Batch: WT Analytical Method: S Instrument: Titration Analyst: ACF Analytical Date/Time:	14499 M21 2320B 8/15/2016 7:03:14PM			

Print Date: 09/02/2016 3:17:26PM

Duplicate Sample Summary Original Sample ID: 1164594002 Duplicate Sample ID: 1345888 QC for Samples:		<u> </u>			
		Analysis Date: 08/15/2016 19:57 Matrix: Water (Surface, Eff., Ground)			
1164672001					
Results by SM21 2320B					
NAME	<u>Original</u>	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL
Alkalinity	180	167	mg/L	7.10	(< 25 )
Batch Information Analytical Batch: WTI4499 Analytical Method: SM21 2320B Instrument: Titration Analyst: ACF					

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Blank Spike Summary Blank Spike ID: LCS for HBN	1164672	WTI44991		
Blank Spike Lab ID: 1345886 Date Analyzed: 08/15/2016	19:17			
- C for Samples: 11646720	01			Matrix: Water (Surface, Eff., Ground)
Results by SM21 2320B				
		Blank Spike	e (mQL)	
<u>Parameter</u> Alkalinity	<u>Spike</u> 250	<u>Result</u> 236	<u>Rec (%)</u> 95	<u>CL</u> (85h115)
Batch Information				
Analytical BatcV: WTI4499 Analytical MetVod: SM21 2320 Instrument: Titration Analyst: ACF	В			Prep BatcV: Prep MetVod: Prep Date/Time: Spike Init Wt./vol.: 250 mQL Extract vol: 50 mL Dupe Init Wt./vol.: Extract vol:
int Date: 09/02/2016 3:17:28PM				
SGS NortV America Ir	10. 200	) West Pott	er Drige AncVor	aQe, AK 95518

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# Method Blank

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Blank ID: MB for HBN 1741471 [WXX/11589] Blank Lab ID: 1344421

QC for Samples: 1164672001

## Results by EPA 300.0

Parameter	Results	LOQ/CL	
Chloride	0.100U	0.200	
Fluoride	0.100U	0.200	
Nitrate-N	0.100U	0.200	
Nitrite-N	0.100U	0.200	
Sulfate	0.100U	0.200	
Total Nitrate/Nitrite-N	0.100U	0.200	

# **Batch Information**

Analytical Batch: WIC5558 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Analytical Date/Time: 8/11/2016 4:32:54AM Prep Batch: WXX11589 Prep Method: METHOD Prep Date/Time: 8/10/2016 1:05:00PM Prep Initial Wt./Vol.: 10 mL Prep Extract Vol: 10 mL

Matrix: Water (Surface, Eff., Ground)

Print Date: 09/02/2016 3:17:29PM



Blank Spike ID: LCS for HBN 1164672 [WXX11589] Blank Spike Lab ID: 1344422 Date Analyzed: 08/11/2016 04:55

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001

Results by EPA 300.0				
		Blank Spike	e (mg/L)	
Parameter_	Spike	Result	<u>Rec (%)</u>	<u>CL</u>
Chloride	5	4.57	91	(90-110)
Fluoride	5	4.76	95	(90-110)
Nitrate-N	5	4.53	91	(90-110)
Nitrite-N	5	4.61	92	(90-110)
Sulfate	5	4.63	93	(90-110)
Total Nitrate/Nitrite-N	10	9.14	91	(90-110)

# **Batch Information**

Analytical Batch: WIC5558 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Prep Batch: WXX11589 Prep Method: METHOD Prep Date/Time: 08/10/2016 13:05 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 09/02/2016 3:17:31PM



## Matrix Spike Summary

Original Sample ID: 1344413 MS Sample ID: 1344423 MS MSD Sample ID: 1344424 MSD

QC for Samples: 1164672001

#### Results by EPA 300.0

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Analysis Date: 08/11/2016 5:17 Analysis Date: 08/11/2016 5:39 Analysis Date: 08/11/2016 6:01 Matrix: Water (Surface, Eff., Ground)

, , , , , , , , , , , , , , , , , , ,										
		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
Parameter	Sample	Spike	Result	<u>Rec (%)</u>	Spike	Result	Rec (%)	CL	<u>RPD (%)</u>	RPD CL
Chloride	0.413	5.00	5.53	102	5.00	5.62	104	90-110	1.70	(< 15)
Fluoride	0.0830J	5.00	5.22	103	5.00	5.28	104	90-110	1.10	(< 15)
Nitrate-N	0.222	5.00	5.22	100	5.00	5.31	102	90-110	1.80	(< 15)
Nitrite-N	0.100U	5.00	5.11	102	5.00	5.36	107	90-110	4.70	(< 15)
Sulfate	0.100U	5.00	5.17	103	5.00	5.26	105	90-110	1.60	(< 15)
Total Nitrate/Nitrite-N	0.222	10.0	10.3	101	10.0	10.7	104	90-110	3.20	(< 15)

#### **Batch Information**

Analytical Batch: WIC5558 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Analytical Date/Time: 8/11/2016 5:39:43AM Prep Batch: WXX11589 Prep Method: EPA 300.0 Extraction Waters/Liquids Prep Date/Time: 8/10/2016 1:05:00PM Prep Initial Wt./Vol.: 10.00mL Prep Extract Vol: 10.00mL

Print Date: 09/02/2016 3:17:32PM

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16-Dec-16

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Method Blank		]		<b>F</b> ( <b>1 )</b>			
Blank ID: MB for HBN 1 Blank Lab ID: 1344975	1741572 [WXX/11593]	Matri	x: Water (Surfac	ce, Eff., Ground)			
QC for Samples: 1164672001							
Results by SM21 4500	P-B,E						
Parameter Ortho Phosphate-P	<u>Results</u> 0.00500U	LOQ/CL 0.0100	<u>DL</u> 0.00310	<u>Units</u> mg/L			
Batch Information							
Analytical Batch: WD/ Analytical Method: SM Instrument: Discrete A Analyst: NEG Analytical Date/Time:	A3835 1/21 4500P-B,E Analyzer 3 8/12/2016 12:02:30PM	Prep Ba Prep Me Prep Da Prep Ini Prep Ex	atch: WXX11593 ethod: SM21 450 ate/Time: 8/12/20 tial Wt./Vol.: 25 r ctract Vol: 25 mL	0P-B,E 116 11:30:00AM nL			

Print Date: 09/02/2016 3:17:33PM

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Blank Spike ID: LCS for HBN 1164672 [V XX11938] Blank Spike Lab ID: 1844376 Date t nalAyez: d/ 51252d16 12:d8 Spike Duplica@ ID: LCSD for HBN 1164672 [V XX11938] Spike Duplica@ Lab ID: 1844377 Ma@ix: V a@er Wsurface(, fftf. rounzG

g C for SaP ples: 1164672dd1

Resulus bA SM21 4500P-B,	E								
		Blank Spike W %LG		5	pike Duplic	:a0e ₩7%5LG			
<u>) araPe0er</u>	<u>Spike</u>	Resul0	<u>Rec Wh</u> G	<u>Spike</u>	Resul0	<u>Rec Wh</u> G	<u>CL</u>	<u>R)DWm</u> G	<u>R) D CL</u>
Qr0Co) OospOa0e-)	dE2	dE2d4	1d2	dE2	dE2d6	1d8	W 9-119 G	dB/	₩ 29 G
Batch Information				) re	Balco. W	XX11593			
t nalAucal Metuoz: SM2145 InstruPent Discrete Analyz t nalAst NEG	zer 3			) re ) re Spil Dup	o Meuloz: o Dale5hiPe ke Ini0V 055 e Ini0V 055	SM21 4500P e: 08/12/201 fole de P% fole de P%	- <b>B,E</b> 6 11:30 5⊥ , x0rac0T 5⊥ , x0rac0Tc	ol: 29 P L bl: 29 P L	

) rin0Da0e: d35d252d16 8:17:89) M

SGS Matrix Spike Summary						Sa USA	LNG Facil ampling apg L-FG-GRZZ	ities Groun Testing R 22-00-0020	Confider dwater Qua eport - Eve 16-004 Re 16-Dec	ntial ality nt 2 V. 0 16
Original Sample ID: 116 MS Sample ID: 134497 MSD Sample ID: 13449 QC for Samples: 11646	4672001 8 MS 79 MSD 72001				Analysis Analysis Analysis Matrix: '	Date: 06 Date: 06 Date: 08 Water (Si	8/12/2016 8/12/2016 8/12/2016 urface, Eff	12:05 12:06 12:07 ., Ground)	)	
Results by SM21 4500P	-B,E	Ма	trix Spike (	ma/L)	Spike	e Duplicate	e (ma/L)			
<u>Parameter</u> Ortho Phosphate-P	<u>Sample</u> 0.00520J	<u>Spike</u> 0.200	<u>Result</u> .203	<u>Rec (%)</u> 99	<u>Spike</u> 0.200	<u>Result</u> 0.202	<u>Rec (%)</u> 99	<u>CL</u> 75-125	<u>RPD (%)</u> 0.54	<u>RPD CL</u> (< 25 )
Batch Information Analytical Batch: WDA3 Analytical Method: SM2 Instrument: Discrete An Analyst: NEG Analytical Date/Time: 8/	835 1 4500P-B,E alyzer 3 /12/2016 12:06:13	PM		Pre Pre Pre Pre	9 Batch: V 9 Method: 9 Date/Tin 9 Initial Wt 9 Extract V	WXX11593 Ortho Ph ne: 8/12/2 :./Vol.: 25. /ol: 25.00	3 osphorus S 016 11:30: .00mL mL	M4500P B 00AM	,E(W) Extra	act

Print Date: 09/02/2016 3:17:36PM

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Method Blank		]				
Blank ID: MB for HBN 17 Blank Lab ID: 1345436	41677 [WXX/11595]	Matrix	k: Water (Surfac	ce, Eff., Ground)		
QC for Samples: 1164672001						
Results by SM21 4500P-	B,E					
<u>Parameter</u> Total Phosphorus	<u>Results</u> 0.00610J	LOQ/CL 0.0100	<u>DL</u> 0.00310	<u>Units</u> mg/L		
Batch Information						
Analytical Batch: WDA3 Analytical Method: SM2 Instrument: Discrete An Analyst: NEG Analytical Date/Time: 8/	8839 11 4500P-B,E alyzer 2 /17/2016 12:15:15PM	Prep Ba Prep Me Prep Da Prep Ini Prep Ex	tch: WXX11595 ethod: SM21 450 te/Time: 8/16/20 tial Wt./Vol.: 25 n tract Vol: 25 mL	0P-B,E 16 12:30:00PM nL		

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16-Dec-16

RPD CL

(< 25)

Dupe Init Wt./Vol.: 0.2 mg/L Extract Vol: 25 mL

Matrix Spike Summary													
Original Sample ID: 1164390001 MS Sample ID: 1345439 MS MSD Sample ID: 1345440 MSD				Analysis Date: 08/17/2016 12:18 Analysis Date: 08/17/2016 12:19 Analysis Date: 08/17/2016 12:19 Matrix: Water (Surface, Eff., Ground)									
QC for Samples: 11646	72001												
Results by SM21 4500P	-B,E												
		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)						
<u>Parameter</u> Total Phosphorus	<u>Sample</u> 0.0461	<u>Spike</u> 0.200	<u>Result</u> .249	<u>Rec (%)</u> 102	<u>Spike</u> 0.200	<u>Result</u> 0.267	<u>Rec (%)</u> 110	<u>CL</u> 75-125	<u>RPD (%)</u> 6.80	<u>RPD CL</u> (< 25 )			
Batch Information													
Analytical Batch: WDA3839 Analytical Method: SM21 4500P-B,E Instrument: Discrete Analyzer 2				Prep Batch: WXX11595 Prep Method: Total Phosphorus (W) Ext. Prep Date/Time: 8/16/2016 12:30:00PM									
Analyst: NEG Analytical Date/Time: 8/17/2016 12:19:13PM				Prep Initial Wt./Vol.: 25.00mL Prep Extract Vol: 25.00mL									

Print Date: 09/02/2016 3:17:41PM

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Blank ID: MB for HBN Blank ] aL ID: 1b4Q 41	1741757 2 WWM 1/ 913	Ma0rti:[a0sr xm(rfausc, ff胚.ro(nGd						
CS for map els6: 11/ 4/ 75991								
) s6(106 LR <b>SM21 4500</b> <u>Oarap s0sr</u> Ba a antatN	-NH3 G	<u>]UCX6]</u>	<u>D]</u>	<u>y nt06</u>				
Batch Information PnalR0ual Ba0ug: [DPbAbA PnalR0ual Ms0goG mM51 4Q99hNHb. In60r(psn0 Dt6urs0s PnalR8sr 5 PnalR60 N, . PnalR0ual Da0s3ztps: AXI/3591/ 1:QQ4bOM		Orse Ba Orse Ms Orse Da Orse Inti Orse , i	0ug: [WW11/91 0goG:M,zHUD 0sXatps:AX1/X59 3tal[0EXTolE/p] 0rau0Tol:/p]	1/ 1:99:99OM				

Ortn0Da0s: 9VX95X591/ b:17:45OM

m mNor0g Pp srtua InuE



Blank Spike ID: LCS for HBN 1164672 [WXX116519 Blank Spike La] ID: 1b43642 Date Analyzed: 50816&516 1b:37 Spike D/ pliuate ID: LCSD for HBN 1164672 [WXX116519 Spike D/ pliuate La] ID: 1b4364b s atriM Water xS/ rfaue(, fftf, ro/ ndG

g C for SaP pleR 1164672551

#### c eR' ltR] y SM21 4500-NH3 G Blank Spike xP % G Spike D/ pliuate xP %&G ) araP eter <u>Spike</u> <u>Spike</u> <u>ceuxmG</u> CL <u>c) D CL</u> <u>c eR⁄ It</u> <u>ceuxmG</u> <u>c eR⁄ It</u> <u>c) DxmG</u> AP P onia QN 1554 1552 x73Q23 G 2E25 xT 23 G 1 154 1 152 **Batch Information** Analytiual Batuh: WDA3838 ) rep Batuh: WXX11601 Analytiual s ethod: SM21 4500-NH3 G ) rep s ethod: METHOD InRtr/ Pent: Discrete Analyzer 2 ) rep Date& iP e: 08/16/2016 13:00 Spike Init WtB<olE 1 P % , Mraut <ol: 6 P L D/ pe Init WtB<olE 1 P % , Mraut <ol: 6 P L AnalyRt: NEG

) rint Date: 5V85282516 b:17:44) s



#### Matrix Spike Summary Original Sample ID: 1164390001 Analysis Date: 08/16/2016 15:02 MS Sample ID: 1345644 MS Analysis Date: 08/16/2016 15:04 MSD Sample ID: 1345645 MSD Analysis Date: 08/16/2016 15:05 Matrix: Water (Surface, Eff., Ground) QC for Samples: 1164672001 Results by SM21 4500-NH3 G Matrix Spike (mg/L) Spike Duplicate (mg/L) Parameter Sample Spike Result Rec (%) <u>Spike</u> Result Rec (%) <u>CL</u> RPD (%) RPD CL Ammonia-N 13.4 1.00 14.2 82 1.00 14.4 103 75-125 1.50 (< 25) **Batch Information** Analytical Batch: WDA3838 Prep Batch: WXX11601 Analytical Method: SM21 4500-NH3 G Prep Method: Ammonia by SM21 4500F prep (W) Instrument: Discrete Analyzer 2 Prep Date/Time: 8/16/2016 1:00:00PM Analyst: NEG Prep Initial Wt./Vol.: 6.00mL Analytical Date/Time: 8/16/2016 3:04:06PM Prep Extract Vol: 6.00mL

Print Date: 09/02/2016 3:17:44PM

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Method Blank	42200 IWXX/446061	Motri	w Motor (Surf	and Eff Cround)				
Blank Lab ID: 1347961	42208 [WXX/11606]	Matrix	x: vvater (Suna	ace, Eff., Ground)				
QC for Samples: 1164672001								
Results by SM21 4500-N	D							
<u>Parameter</u> Total Kjeldahl Nitrogen	<u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.310	<u>Units</u> mg/L				
atch Information								
Analytical Batch: WDA3 Analytical Method: SM2 Instrument: Discrete Ana Analyst: NEG Analytical Date/Time: 8/	843 1 4500-N D alyzer 3 24/2016 3:53:56PM	Prep Ba Prep Me Prep Da Prep Ini Prep Ex	tch: WXX1160 ethod: METHO tte/Time: 8/23/2 tial Wt./Vol.: 25 tract Vol: 25 m	6 D 2016 6:00:00PM 5 mL L				

Print Date: 09/02/2016 3:17:46PM



# 3 GBI a Snkap Sie e Bum

Blank Spike ID: LCS for HBN 1164672 [WXX11606] Blank Spike Lab ID: 1347962 Date Analyzed: 08/24/2016 15:55 Spike Duplicate ID: LCSD for HBN 1164672 [WXX11606] Spike Duplicate Lab ID: 1347963 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001

Results by SM21 4500-N H									
		Blank Spike (mg/L)		Spike Duplicate (mg/L)					
Parameter	Spike	Result	Rec (%)	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Total Kjeldahl Nitrogen	4	3.81	95	4	3.86	97	(75-125)	1.40	(< 25)
3 Bryt d H ue Brk I Analytical Batch: f Ho WD4W Analytical Method: SM21 4500-N H Instrument: HkAyuprp ol B@8puW Analyst: Nsz			Prep Batch: <b>f EE11X0X</b> Prep Method: <b>Ms6TOH</b> Prep Date/Time: <b>0D/2W201X 1D:00</b> Spike Init Wt./Vol.: 4 mg/L Extract Vol: 25 mL Dupe Init Wt./Vol.: 4 mg/L Extract Vol: 25 mL						

Print Date: 09/02/2016 3:17:47PM
Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16 Matrix Spike Summary Original Sample ID: 1164728001 Analysis Date: 08/24/2016 16:37 MS Sample ID: 1347964 MS Analysis Date: 08/24/2016 16:38 MSD Sample ID: 1347965 MSD Analysis Date: 08/24/2016 16:39 Matrix: Water (Surface, Eff., Ground) QC for Samples: 1164672001 Results by SM21 4500-N D Matrix Spike (mg/L) Spike Duplicate (mg/L) Result Parameter Sample Spike Result Rec (%) <u>Spike</u> Rec (%) RPD (%) RPD CL CL Total Kjeldahl Nitrogen 37.2 4.00 43.1 149 * 4.00 42.7 139 75-125 0.92 (< 25) **Batch Information** Analytical Batch: WDA3843 Prep Batch: WXX11606 Analytical Method: SM21 4500-N D Prep Method: Distillation TKN by Phenate (W) Instrument: Discrete Analyzer 3 Prep Date/Time: 8/23/2016 6:00:00PM Analyst: NEG Prep Initial Wt./Vol.: 25.00mL Analytical Date/Time: 8/24/2016 4:38:42PM Prep Extract Vol: 25.00mL

Print Date: 09/02/2016 3:17:48PM

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Matrix: Water (Surface, Eff., Ground)

#### Method Blank

SG

Blank ID: MB for HBN 1741698 [XXX/36071] Blank Lab ID: 1345539

QC for Samples: 1164672001

#### Results by 8270D SIM (PEST)

	D #	1.0.0.101		
Parameter	Results	LOQ/CL	DL	Units
4,4'-DDD	0.0150U	0.0300	0.00940	ug/L
4,4'-DDE	0.0150U	0.0300	0.00940	ug/L
4,4'-DDT	0.0150U	0.0300	0.00940	ug/L
Aldrin	0.0150U	0.0300	0.00940	ug/L
alpha-BHC	0.0150U	0.0300	0.00940	ug/L
alpha-Chlordane	0.0150U	0.0300	0.00940	ug/L
beta-BHC	0.0150U	0.0300	0.00940	ug/L
delta-BHC	0.0150U	0.0300	0.00940	ug/L
Dieldrin	0.0150U	0.0300	0.00940	ug/L
Endosulfan I	0.0150U	0.0300	0.00940	ug/L
Endosulfan II	0.0150U	0.0300	0.00940	ug/L
Endosulfan sulfate	0.0150U	0.0300	0.00940	ug/L
Endrin	0.0150U	0.0300	0.00940	ug/L
Endrin aldehyde	0.0150U	0.0300	0.00940	ug/L
Endrin ketone	0.0150U	0.0300	0.00940	ug/L
gamma-BHC (Lindane)	0.0150U	0.0300	0.00940	ug/L
gamma-Chlordane	0.0150U	0.0300	0.00940	ug/L
Heptachlor	0.0150U	0.0300	0.00940	ug/L
Heptachlor epoxide	0.0150U	0.0300	0.00940	ug/L
Methoxychlor	0.0150U	0.0300	0.00940	ug/L
Toxaphene	1.00U	2.00	0.620	ug/L
Surrogates				
2-Fluorobiphenyl (surr)	68	53-106		%
Terphenyl-d14 (surr)	78.4	58-132		%

#### **Batch Information**

Analytical Batch: XMS9554 Analytical Method: 8270D SIM (PEST) Instrument: HP 6890 Series II MS2 SVOA Analyst: DSH Analytical Date/Time: 8/17/2016 5:57:00PM Prep Batch: XXX36071 Prep Method: SW3520C Prep Date/Time: 8/17/2016 10:13:42AM Prep Initial Wt./Vol.: 1000 mL Prep Extract Vol: 1 mL

Print Date: 09/02/2016 3:17:49PM

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#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1164672 [XXX36071] Blank Spike Lab ID: 1345540 Date Analyzed: 08/17/2016 18:46 Spike Duplicate ID: LCSD for HBN 1164672 [XXX36071] Spike Duplicate Lab ID: 1345541 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001

# Results by 8270D SIM (PEST)

		Blank Spike	e (ug/L)		Spike Dupli	cate (ug/L)			
Parameter	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
4,4'-DDD	0.25	0.221	89	0.25	0.212	85	(56-143)	4.40	(< 20)
4,4'-DDE	0.25	0.181	72	0.25	0.171	68	(57-135)	5.70	(< 20)
4,4'-DDT	0.25	0.194	78	0.25	0.188	75	(51-143)	3.20	(< 20)
Aldrin	0.25	0.192	77	0.25	0.162	65	(45-134)	16.70	(< 20)
alpha-BHC	0.25	0.171	68	0.25	0.145	58	(54-138)	16.60	(< 20)
alpha-Chlordane	0.25	0.186	74	0.25	0.161	64	(60-129)	14.20	(< 20)
beta-BHC	0.25	0.168	67	0.25	0.150	60	(56-136)	11.50	(< 20)
delta-BHC	0.25	0.185	74	0.25	0.163	65	(52-142)	12.90	(< 20)
Dieldrin	0.25	0.217	87	0.25	0.201	80	(60-136)	8.00	(< 20)
Endosulfan I	0.25	0.153	61	* 0.25	0.130	52	* (62-126)	16.00	(< 20)
Endosulfan II	0.25	0.181	72	0.25	0.174	70	(52-135)	4.10	(< 20)
Endosulfan sulfate	0.25	0.220	88	0.25	0.219	88	(62-133)	0.48	(< 20)
Endrin	0.25	0.200	80	0.25	0.191	76	(60-138)	4.50	(< 20)
Endrin aldehyde	0.25	0.202	81	0.25	0.194	78	(51-132)	3.90	(< 20)
Endrin ketone	0.25	0.243	97	0.25	0.229	92	(58-134)	5.90	(< 20)
gamma-BHC (Lindane)	0.25	0.172	69	0.25	0.150	60	(59-134)	14.00	(< 20)
gamma-Chlordane	0.25	0.182	73	0.25	0.162	65	(56-136)	11.70	(< 20)
Heptachlor	0.25	0.195	78	0.25	0.163	65	(54-130)	17.80	(< 20)
Heptachlor epoxide	0.25	0.184	74	0.25	0.164	66	(61-133)	11.40	(< 20)
Methoxychlor	0.25	0.196	78	0.25	0.192	77	(54-145)	1.90	(< 20)
Surrogates									
2-Fluorobiphenyl (surr)	0.5	69.8	70	0.5	59.9	60	(53-106)	15.20	
Terphenyl-d14 (surr)	0.5	80.7	81	0.5	76.8	77	(58-132)	4.90	

#### **Batch Information**

Analytical Batch: XMS9554 Analytical Method: 8270D SIM (PEST) Instrument: HP 6890 Series II MS2 SVOA Analyst: DSH Prep Batch: XXX36071 Prep Method: SW3520C Prep Date/Time: 08/17/2016 10:13 Spike Init Wt./Vol.: 0.25 ug/L Extract Vol: 1 mL Dupe Init Wt./Vol.: 0.25 ug/L Extract Vol: 1 mL

Print Date: 09/02/2016 3:17:52PM

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Matrix: Water (Surface, Eff., Ground)

# Method Blank

SG

Blank ID: MB for HBN 1741699 [XXX/36072] Blank Lab ID: 1345542

QC for Samples: 1164672001

#### Results by SW8270D

1.2.4-Trichlorobenzene         0.00500U         0.0100         0.00310         mg/L           1.3-Dichlorobenzene         0.00500U         0.0100         0.00310         mg/L           1.4-Dichlorobenzene         0.00500U         0.0100         0.00310         mg/L           1.4-Dichlorobenzene         0.00500U         0.0100         0.00310         mg/L           1.4-Dichlorobenzene         0.00500U         0.0100         0.00310         mg/L           2.4.5-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4.5-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dinitrophenol         0.0250U         0.0500         0.0100         0.00310         mg/L           2.4-Dinitrophenol         0.0250U         0.0500         0.0100         0.00310         mg/L           2.4-Dinitrophenol         0.0250U         0.0100         0.00310         mg/L           2.4-Dinitrophenol         0.0250U         0.0100         0.00310         mg/L           2.6-Dinitrotoluene         0.00500U         0.0100         0.00310         mg/L           2.Chloronaphthalene         0.00500U         0.0100         0.00310         mg/L	Parameter	Results	LOQ/CL	<u>DL</u>	<u>Units</u>
1,2-Dichlorobenzene         0.00500U         0.0100         0.00310         mg/L           1,4-Dichlorobenzene         0.00500U         0.0100         0.00310         mg/L           1.4-Dichlorobenzene         0.00500U         0.0100         0.00310         mg/L           1-Methylnaphthalene         0.00500U         0.0100         0.00310         mg/L           2.4,5-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dinitroblene         0.00500U         0.0100         0.00310         mg/L           2.4-Dinitroblene         0.00500U         0.0100         0.00310         mg/L           2.Chiorophthalene         0.00500U         0.0100         0.00310         mg/L           2.Chiorophenol         0.0250U         0.0100         0.00310         mg/L           2.Methylhenol (p&m-Cresol)	1,2,4-Trichlorobenzene	0.00500U	0.0100	0.00310	mg/L
1.3-Dichlorobenzene         0.00500U         0.0100         0.00310         mg/L           1.4-Dichlorobenzene         0.00500U         0.0100         0.00310         mg/L           1-Chloronaphthalene         0.00500U         0.0100         0.00310         mg/L           2.4,5-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4,5-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dinethylphenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dinethylphenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dinitrobluene         0.00500U         0.0100         0.00310         mg/L           2.4-Dinitrobluene         0.00500U         0.0100         0.00310         mg/L           2.6-Dinitrobluene         0.00500U         0.0100         0.00310         mg/L           2.Methylphenol (o-Cresol)         0	1,2-Dichlorobenzene	0.00500U	0.0100	0.00310	mg/L
1.4-Dichlorobenzene         0.00500U         0.0100         0.00310         mg/L           1-Chloronaphthalene         0.00500U         0.0100         0.00310         mg/L           2.4.5-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4.5-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4.5-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dintrophenol         0.0250U         0.0100         0.00310         mg/L           2.4-Dintrophenol         0.0250U         0.0100         0.00310         mg/L           2.4-Dintrophenol         0.00500U         0.0100         0.00310         mg/L           2.6-Dintrophenol         0.00500U         0.0100         0.00310         mg/L           2.6-Dintrophenol         0.00500U         0.0100         0.00310         mg/L           2.Chloronaphthalene         0.00500U         0.0100         0.00310         mg/L           2.Methyl-4.6-dinitrophenol         0.0250U         0.0100         0.00310         mg/L           2.Methyl-4.6-dinitrophenol         0.00500U         0.0100         0.00310         mg/L           2.Methyl-4.6-dinitrophenol	1,3-Dichlorobenzene	0.00500U	0.0100	0.00310	mg/L
1-Chioronaphthalene         0.00500U         0.0100         0.00310         mg/L           1-Methylnaphthalene         0.00500U         0.0100         0.00310         mg/L           2.4.5-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4.5-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dintrophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dinitrophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dinitrotoluene         0.00500U         0.0100         0.00310         mg/L           2.6-Dinitrotoluene         0.00500U         0.0100         0.00310         mg/L           2.6-Dinitrotoluene         0.00500U         0.0100         0.00310         mg/L           2.6-Chiorophenol         0.00500U         0.0100         0.00310         mg/L           2.Methyl-4.6-dinitrophenol         0.0250U         0.0100         0.00310         mg/L           2.Methyl-4.6-dinitrophenol         0.00500U         0.0100         0.00310         mg/L           2.Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2.Mitroaniline	1,4-Dichlorobenzene	0.00500U	0.0100	0.00310	mg/L
1-Methylnaphthalene         0.00500U         0.0100         0.00310         mg/L           2,4,5-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2,4,6-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2,4-Dinkhorophenol         0.00500U         0.0100         0.00310         mg/L           2,4-Dinktrophenol         0.00500U         0.0100         0.00310         mg/L           2,4-Dinktrobluene         0.00500U         0.0100         0.00310         mg/L           2,6-Dinktrobluene         0.00500U         0.0100         0.00310         mg/L           2-Chlorophenol         0.00500U         0.0100         0.00310         mg/L           2-Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Methylphenol (p&m-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Methylphenol (p&m-Cresol)	1-Chloronaphthalene	0.00500U	0.0100	0.00310	mg/L
2.4,5-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4,5-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dinthorophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dinthrophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dinthrobluene         0.00500U         0.0100         0.00310         mg/L           2.6-Dinthrobluene         0.00500U         0.0100         0.00310         mg/L           2.6-Dinthrobluene         0.00500U         0.0100         0.00310         mg/L           2.Chloronaphthalene         0.00500U         0.0100         0.00310         mg/L           2.Chloronaphthalene         0.00500U         0.0100         0.00310         mg/L           2.Methylhaphtalene         0.00500U         0.0100         0.00310         mg/L           2.Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2.Mitrophenol         0.00500U         0.0100         0.00310         mg/L           3.A-Dichorobenzidine         0.00500U         0.0100         0.00310         mg/L           4.Nitrophenol         0.00500U	1-Methylnaphthalene	0.00500U	0.0100	0.00310	mg/L
2.4,6-Trichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dimethylphenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dinitrophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dinitrotoluene         0.00500U         0.0100         0.00310         mg/L           2.6-Dichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.6-Dichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.6-Dichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.6-Chloronaphthalene         0.00500U         0.0100         0.00310         mg/L           2-Methyl+4.6-dinitrophenol         0.0250U         0.0500         0.0150         mg/L           2-Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Methylphenol         0.00500U         0.0100         0.00310         mg/L           2-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           3-Dichlorobenzidine	2,4,5-Trichlorophenol	0.00500U	0.0100	0.00310	mg/L
2.4-Dichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dimethylphenol         0.0250U         0.0100         0.00310         mg/L           2.4-Dinitrophenol         0.0250U         0.0100         0.00310         mg/L           2.4-Dinitrophenol         0.00500U         0.0100         0.00310         mg/L           2.6-Dichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.6-Dichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.6-Dichlorophenol         0.00500U         0.0100         0.00310         mg/L           2.Chloronaphthalene         0.00500U         0.0100         0.00310         mg/L           2.Methyl-4.6-dinitrophenol         0.0250U         0.0100         0.00310         mg/L           2.Methyl-1.6-dinitrophenol         0.0250U         0.0100         0.00310         mg/L           2.Methyl-1.6-dinitrophenol         0.00500U         0.0100         0.00310         mg/L           2.Methyl-1.6-dinitrophenol         0.00500U         0.0100         0.00310         mg/L           3.4Dichorobenzidine         0.00500U         0.0100         0.00310         mg/L           4.Nitrophenol	2,4,6-Trichlorophenol	0.00500U	0.0100	0.00310	mg/L
2.4-Dimethylphenol         0.00500U         0.0100         0.00310         mg/L           2.4-Dinitrophenol         0.0250U         0.0500         0.0150         mg/L           2.4-Dinitrobluene         0.00500U         0.0100         0.00310         mg/L           2.6-Dinitrobluene         0.00500U         0.0100         0.00310         mg/L           2.6-Dinitrobluene         0.00500U         0.0100         0.00310         mg/L           2.6-Dinitrobluene         0.00500U         0.0100         0.00310         mg/L           2.6-Dinitrophenol         0.00500U         0.0100         0.00310         mg/L           2-Methyl-4,6-dinitrophenol         0.0250U         0.0500         0.0150         mg/L           2-Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Nitrophenol         0.00500U         0.0100         0.00310         mg/L           2-Nitrophenol         0.00500U         0.0100         0.00310         mg/L           3.7bichorobenzidine         0.00500U         0.0100         0.00310         mg/L           4-Chlorobenzidine         0.00500U         0.0100         0.00310         mg/L           4-Chlorobenzidine         0.00500U	2,4-Dichlorophenol	0.00500U	0.0100	0.00310	mg/L
2,4-Dinitrophenol         0.0250U         0.0500         0.0150         mg/L           2,4-Dinitrotoluene         0.00500U         0.0100         0.00310         mg/L           2,6-Dinitrotoluene         0.00500U         0.0100         0.00310         mg/L           2,6-Dinitrotoluene         0.00500U         0.0100         0.00310         mg/L           2-Chlorophthalene         0.00500U         0.0100         0.00310         mg/L           2-Chlorophthalene         0.00500U         0.0100         0.00310         mg/L           2-Methyl-4,6-dinitrophenol         0.0250U         0.0100         0.00310         mg/L           2-Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Mitrophenol         0.00500U         0.0100         0.00310         mg/L           2-Mitrophenol         0.00500U         0.0100         0.00310         mg/L           3-Nitrophenol         0.00500U         0.0100         0.00310         mg/L           3-Solichorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Storoa-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chloroa-1iline         0.0	2,4-Dimethylphenol	0.00500U	0.0100	0.00310	mg/L
2,4-Dinitrotoluene         0.00500U         0.0100         0.00310         mg/L           2,6-Dichlorophenol         0.00500U         0.0100         0.00310         mg/L           2,6-Dinitrotoluene         0.00500U         0.0100         0.00310         mg/L           2-Chloronaphthalene         0.00500U         0.0100         0.00310         mg/L           2-Chloronaphthalene         0.00500U         0.0100         0.00310         mg/L           2-Methyl-4,6-dinitrophenol         0.0250U         0.0500         0.0100         mg/L           2-Methyl-4,6-dinitrophenol         0.0250U         0.0100         0.00310         mg/L           2-Methyl-4,6-dinitrophenol         0.0250U         0.0100         0.00310         mg/L           2-Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           3-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methy	2,4-Dinitrophenol	0.0250U	0.0500	0.0150	mg/L
2,6-Dichlorophenol         0.00500U         0.0100         0.00310         mg/L           2,6-Dinitrotoluene         0.00500U         0.0100         0.00310         mg/L           2-Chloronaphthalene         0.00500U         0.0100         0.00310         mg/L           2-Chlorophenol         0.0250U         0.0100         0.00310         mg/L           2-Methyl-4,6-dinitrophenol         0.0250U         0.0100         0.00310         mg/L           2-Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           3-Nitrophenol         0.00500U         0.0100         0.00310         mg/L           3-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Bromophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chloroaniline         0.00500U         0.0100         0.00310         mg/L           4-Chloroaniline         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether <t< td=""><td>2,4-Dinitrotoluene</td><td>0.00500U</td><td>0.0100</td><td>0.00310</td><td>mg/L</td></t<>	2,4-Dinitrotoluene	0.00500U	0.0100	0.00310	mg/L
2,6-Dinitrotoluene         0.00500U         0.0100         0.00310         mg/L           2-Chloronaphthalene         0.00500U         0.0100         0.00310         mg/L           2-Chlorophenol         0.00500U         0.0100         0.00310         mg/L           2-Methyl-4,6-dinitrophenol         0.0250U         0.0500         0.0150         mg/L           2-Methylnaphthalene         0.00500U         0.0100         0.00310         mg/L           2-Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           3&4-Methylphenol (p&m-Cresol)         0.0100U         0.0200         0.00620         mg/L           3.3-Dichlorobenzidine         0.00500U         0.0100         0.00310         mg/L           4-Bromophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L <td< td=""><td>2,6-Dichlorophenol</td><td>0.00500U</td><td>0.0100</td><td>0.00310</td><td>mg/L</td></td<>	2,6-Dichlorophenol	0.00500U	0.0100	0.00310	mg/L
2-Chloronaphthalene         0.00500U         0.0100         0.00310         mg/L           2-Chlorophenol         0.00500U         0.0100         0.00310         mg/L           2-Methyl-4,6-dinitrophenol         0.0250U         0.0500         0.0150         mg/L           2-Methylinaphthalene         0.00500U         0.0100         0.00310         mg/L           2-Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           2-Nitrophenol         0.00500U         0.0100         0.00310         mg/L           3-Airtophenol         0.00500U         0.0100         0.00310         mg/L           3-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Bromophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Nitroaniline	2,6-Dinitrotoluene	0.00500U	0.0100	0.00310	mg/L
2-Chlorophenol         0.00500U         0.0100         0.00310         mg/L           2-Methyl-4,6-dinitrophenol         0.0250U         0.0500         0.0150         mg/L           2-Methylnaphthalene         0.00500U         0.0100         0.00310         mg/L           2-Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           2-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           3-Altrophenol         0.00500U         0.0100         0.00310         mg/L           3-Altrophenol         0.00500U         0.0100         0.00310         mg/L           3-Altroaniline         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chloroaniline         0.00500U         0.0100         0.00310         mg/L           4-Chloroaniline         0.00500U         0.0100         0.00310         mg/L           4-Chloroaniline         0.00500U         0.0100         0.00310         mg/L           4-Nitroaniline         0.00500U         0.010	2-Chloronaphthalene	0.00500U	0.0100	0.00310	mg/L
2-Methyl-4,6-dinitrophenol         0.0250U         0.0500         0.0150         mg/L           2-Methylnaphthalene         0.00500U         0.0100         0.00310         mg/L           2-Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           2-Nitroaniline         0.00500U         0.0100         0.00510         mg/L           3&4-Methylphenol (p&m-Cresol)         0.0100U         0.0200         0.06620         mg/L           3,3-Dichlorobenzidine         0.00500U         0.0100         0.00310         mg/L           3-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Bromophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chloroaniline         0.00500U         0.0100         0.00310         mg/L           4-Chloroaniline         0.00500U         0.0100         0.00310         mg/L           4-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Nitroaniline <t< td=""><td>2-Chlorophenol</td><td>0.00500U</td><td>0.0100</td><td>0.00310</td><td>mg/L</td></t<>	2-Chlorophenol	0.00500U	0.0100	0.00310	mg/L
2-Methylnaphthalene         0.00500U         0.0100         0.00310         mg/L           2-Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           2-Nitrophenol         0.00500U         0.0100         0.00310         mg/L           3&4-Methylphenol (p&m-Cresol)         0.0100U         0.0200         0.00620         mg/L           3,3-Dichlorobenzidine         0.00500U         0.0100         0.00310         mg/L           4-Bromophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Shitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           Acenap	2-Methyl-4,6-dinitrophenol	0.0250U	0.0500	0.0150	mg/L
2-Methylphenol (o-Cresol)         0.00500U         0.0100         0.00310         mg/L           2-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           2-Nitrophenol         0.00500U         0.0100         0.00310         mg/L           3&4-Methylphenol (p&m-Cresol)         0.0100U         0.0200         0.00620         mg/L           3,3-Dichlorobenzidine         0.00500U         0.0100         0.00310         mg/L           4-Bromophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chloro-aniline         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Nitrophenol         0.0250U         0.0100         0.00310         mg/L           Acenaphthene         0.00500U         0.0100         0.00310         mg/L           Acenaphthylene	2-Methylnaphthalene	0.00500U	0.0100	0.00310	mg/L
2-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           2-Nitrophenol         0.00500U         0.0100         0.00310         mg/L           3&4-Methylphenol (p&m-Cresol)         0.0100U         0.0200         0.00620         mg/L           3,3-Dichlorobenzidine         0.00500U         0.0100         0.00310         mg/L           3-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Bromophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           Acenaphthene         0.00500U         0.0100         0.00310         mg/L           Acenaphthylene	2-Methylphenol (o-Cresol)	0.00500U	0.0100	0.00310	mg/L
2-Nitrophenol         0.00500U         0.0100         0.00310         mg/L           3&4-Methylphenol (p&m-Cresol)         0.0100U         0.0200         0.00620         mg/L           3,3-Dichlorobenzidine         0.00500U         0.0100         0.00310         mg/L           3-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Bromophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           Acenaphthene         0.00500U         0.0100         0.00310         mg/L           Acenaphthylene         0.00500U         0.0100         0.00310         mg/L           Acenaphthylene         0.00500U         0.0100         0.00310         mg/L           Acenaphthylene         0.005	2-Nitroaniline	0.00500U	0.0100	0.00310	mg/L
3&4-Methylphenol (p&m-Cresol)         0.0100U         0.0200         0.00620         mg/L           3,3-Dichlorobenzidine         0.00500U         0.0100         0.00310         mg/L           3-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Bromophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chloroaniline         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Nitrophenol         0.0250U         0.0100         0.00310         mg/L           Acenaphthene         0.00500U         0.0100         0.00310         mg/L           Acenaphthylene         0.00500U         0.0100         0.00310         mg/L           Arbiracene         <	2-Nitrophenol	0.00500U	0.0100	0.00310	mg/L
3,3-Dichlorobenzidine         0.00500U         0.0100         0.00310         mg/L           3-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Bromophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chloro-armethylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Nitrophenol         0.0250U         0.0500U         0.0100         mg/L           Acenaphthene         0.00500U         0.0100         0.00310         mg/L           Acenaphthylene         0.00500U         0.0100         0.00310         mg/L           Antiracene         0.00500U         0.0100         0.00310         mg/L           Benzo(a)Anthracene <td< td=""><td>3&amp;4-Methylphenol (p&amp;m-Cresol)</td><td>0.0100U</td><td>0.0200</td><td>0.00620</td><td>mg/L</td></td<>	3&4-Methylphenol (p&m-Cresol)	0.0100U	0.0200	0.00620	mg/L
3-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Bromophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Chloro-3-methylphenol         0.00500U         0.0100         0.00310         mg/L           4-Chloroaniline         0.00500U         0.0100         0.00310         mg/L           4-Chlorophenyl-phenylether         0.00500U         0.0100         0.00310         mg/L           4-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Nitrophenol         0.0250U         0.0100         0.00310         mg/L           Acenaphthene         0.00500U         0.0100         0.00310         mg/L           Acenaphthylene         0.00500U         0.0100         0.00310         mg/L           Anthracene         0.00500U         0.0100         0.00310         mg/L           Azobenzene         0.00500U         0.0100         0.00310         mg/L           Benzo(a)Anthracene         0.00500U         0.0100         0.00310         mg/L           Benzo[a]pyrene         0.00500U         0.0100         0.00310         mg/L           Benzo[b]Fluoranthene         0.00500U         0.0100 <td>3,3-Dichlorobenzidine</td> <td>0.00500U</td> <td>0.0100</td> <td>0.00310</td> <td>mg/L</td>	3,3-Dichlorobenzidine	0.00500U	0.0100	0.00310	mg/L
4-Bromophenyl-phenylether0.00500U0.01000.00310mg/L4-Chloro-3-methylphenol0.00500U0.01000.00310mg/L4-Chloroaniline0.00500U0.01000.00310mg/L4-Chlorophenyl-phenylether0.00500U0.01000.00310mg/L4-Nitroaniline0.00500U0.01000.00310mg/L4-Nitrophenol0.0250U0.05000.0150mg/LAcenaphthene0.00500U0.01000.00310mg/LAcenaphthylene0.00500U0.01000.00310mg/LAniline0.0250U0.01000.00310mg/LAnthracene0.00500U0.01000.00310mg/LAzobenzene0.00500U0.01000.00310mg/LBenzo(a)Anthracene0.00500U0.01000.00310mg/LBenzo[a]pyrene0.00500U0.01000.00310mg/LBenzo[b]Fluoranthene0.00500U0.01000.00310mg/L	3-Nitroaniline	0.00500U	0.0100	0.00310	mg/L
4-Chloro-3-methylphenol0.00500U0.01000.00310mg/L4-Chloroaniline0.00500U0.01000.00310mg/L4-Chlorophenyl-phenylether0.00500U0.01000.00310mg/L4-Nitroaniline0.00500U0.01000.00310mg/L4-Nitrophenol0.0250U0.05000.0150mg/LAcenaphthene0.00500U0.01000.00310mg/LAcenaphthylene0.00500U0.01000.00310mg/LAniline0.0250U0.01000.00310mg/LAnthracene0.00500U0.01000.00310mg/LAzobenzene0.00500U0.01000.00310mg/LBenzo(a)Anthracene0.00500U0.01000.00310mg/LBenzo[a]pyrene0.00500U0.01000.00310mg/LBenzo[b]Fluoranthene0.00500U0.01000.00310mg/L	4-Bromophenyl-phenylether	0.00500U	0.0100	0.00310	mg/L
4-Chloroaniline0.00500U0.01000.00310mg/L4-Chlorophenyl-phenylether0.00500U0.01000.00310mg/L4-Nitroaniline0.00500U0.01000.00310mg/L4-Nitrophenol0.0250U0.05000.0150mg/LAcenaphthene0.00500U0.01000.00310mg/LAcenaphthylene0.00500U0.01000.00310mg/LAniline0.0250U0.01000.00310mg/LAnthracene0.00500U0.01000.00310mg/LAzobenzene0.00500U0.01000.00310mg/LBenzo(a)Anthracene0.00500U0.01000.00310mg/LBenzo[a]pyrene0.00500U0.01000.00310mg/LBenzo[b]Fluoranthene0.00500U0.01000.00310mg/L	4-Chloro-3-methylphenol	0.00500U	0.0100	0.00310	mg/L
4-Chlorophenyl-phenylether0.00500U0.01000.00310mg/L4-Nitroaniline0.00500U0.01000.00310mg/L4-Nitrophenol0.0250U0.05000.0150mg/LAcenaphthene0.00500U0.01000.00310mg/LAcenaphthylene0.00500U0.01000.00310mg/LAniline0.0250U0.05000.0150mg/LAnthracene0.00500U0.01000.00310mg/LAzobenzene0.00500U0.01000.00310mg/LBenzo(a)Anthracene0.00500U0.01000.00310mg/LBenzo[a]pyrene0.00500U0.01000.00310mg/LBenzo[b]Fluoranthene0.00500U0.01000.00310mg/L	4-Chloroaniline	0.00500U	0.0100	0.00310	mg/L
4-Nitroaniline         0.00500U         0.0100         0.00310         mg/L           4-Nitrophenol         0.0250U         0.0500         0.0150         mg/L           Acenaphthene         0.00500U         0.0100         0.00310         mg/L           Acenaphthylene         0.00500U         0.0100         0.00310         mg/L           Aniline         0.0250U         0.0500         0.0150         mg/L           Anthracene         0.00500U         0.0100         0.00310         mg/L           Azobenzene         0.00500U         0.0100         0.00310         mg/L           Benzo(a)Anthracene         0.00500U         0.0100         0.00310         mg/L           Benzo[a]pyrene         0.00500U         0.0100         0.00310         mg/L           Benzo[b]Fluoranthene         0.00500U         0.0100         0.00310         mg/L	4-Chlorophenyl-phenylether	0.00500U	0.0100	0.00310	mg/L
4-Nitrophenol         0.0250U         0.0500         0.0150         mg/L           Acenaphthene         0.00500U         0.0100         0.00310         mg/L           Acenaphthylene         0.00500U         0.0100         0.00310         mg/L           Aniline         0.0250U         0.0500         0.0150         mg/L           Anthracene         0.00500U         0.0100         0.00310         mg/L           Azobenzene         0.00500U         0.0100         0.00310         mg/L           Benzo(a)Anthracene         0.00500U         0.0100         0.00310         mg/L           Benzo[a]pyrene         0.00500U         0.0100         0.00310         mg/L           Benzo[a]pyrene         0.00500U         0.0100         0.00310         mg/L	4-Nitroaniline	0.00500U	0.0100	0.00310	mg/L
Acenaphthene         0.00500U         0.0100         0.00310         mg/L           Acenaphthylene         0.00500U         0.0100         0.00310         mg/L           Aniline         0.0250U         0.0500         0.0150         mg/L           Anthracene         0.00500U         0.0100         0.00310         mg/L           Azobenzene         0.00500U         0.0100         0.00310         mg/L           Benzo(a)Anthracene         0.00500U         0.0100         0.00310         mg/L           Benzo[a]pyrene         0.00500U         0.0100         0.00310         mg/L           Benzo[b]Fluoranthene         0.00500U         0.0100         0.00310         mg/L	4-Nitrophenol	0.0250U	0.0500	0.0150	mg/L
Acenaphthylene         0.00500U         0.0100         0.00310         mg/L           Aniline         0.0250U         0.0500         0.0150         mg/L           Anthracene         0.00500U         0.0100         0.00310         mg/L           Azobenzene         0.00500U         0.0100         0.00310         mg/L           Benzo(a)Anthracene         0.00500U         0.0100         0.00310         mg/L           Benzo[a]pyrene         0.00500U         0.0100         0.00310         mg/L           Benzo[b]Fluoranthene         0.00500U         0.0100         0.00310         mg/L	Acenaphthene	0.00500U	0.0100	0.00310	mg/L
Aniline         0.0250U         0.0500         0.0150         mg/L           Anthracene         0.00500U         0.0100         0.00310         mg/L           Azobenzene         0.00500U         0.0100         0.00310         mg/L           Benzo(a)Anthracene         0.00500U         0.0100         0.00310         mg/L           Benzo[a]pyrene         0.00500U         0.0100         0.00310         mg/L           Benzo[b]Fluoranthene         0.00500U         0.0100         0.00310         mg/L	Acenaphthylene	0.00500U	0.0100	0.00310	mg/L
Anthracene         0.00500U         0.0100         0.00310         mg/L           Azobenzene         0.00500U         0.0100         0.00310         mg/L           Benzo(a)Anthracene         0.00500U         0.0100         0.00310         mg/L           Benzo[a]pyrene         0.00500U         0.0100         0.00310         mg/L           Benzo[a]pyrene         0.00500U         0.0100         0.00310         mg/L           Benzo[b]Fluoranthene         0.00500U         0.0100         0.00310         mg/L	Aniline	0.0250U	0.0500	0.0150	mg/L
Azobenzene         0.00500U         0.0100         0.00310         mg/L           Benzo(a)Anthracene         0.00500U         0.0100         0.00310         mg/L           Benzo[a]pyrene         0.00500U         0.0100         0.00310         mg/L           Benzo[b]Fluoranthene         0.00500U         0.0100         0.00310         mg/L	Anthracene	0.00500U	0.0100	0.00310	mg/L
Benzo(a)Anthracene         0.00500U         0.0100         0.00310         mg/L           Benzo[a]pyrene         0.00500U         0.0100         0.00310         mg/L           Benzo[b]Fluoranthene         0.00500U         0.0100         0.00310         mg/L	Azobenzene	0.00500U	0.0100	0.00310	mg/L
Benzo[a]pyrene         0.00500U         0.0100         0.00310         mg/L           Benzo[b]Fluoranthene         0.00500U         0.0100         0.00310         mg/L	Benzo(a)Anthracene	0.00500U	0.0100	0.00310	mg/L
Benzo[b]Fluoranthene 0.00500U 0.0100 0.00310 mg/L	Benzo[a]pyrene	0.00500U	0.0100	0.00310	mg/L
	Benzo[b]Fluoranthene	0.00500U	0.0100	0.00310	mg/L

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Matrix: Water (Surface, Eff., Ground)

# Method Blank

SG:

Blank ID: MB for HBN 1741699 [XXX/36072] Blank Lab ID: 1345542

QC for Samples: 1164672001

#### Results by SW8270D

Parameter	<u>Results</u>	LOQ/CL	DL	<u>Units</u>
Benzo[g,h,i]perylene	0.00500U	0.0100	0.00310	mg/L
Benzo[k]fluoranthene	0.00500U	0.0100	0.00310	mg/L
Benzoic acid	0.0250U	0.0500	0.0150	mg/L
Benzyl alcohol	0.00500U	0.0100	0.00310	mg/L
Bis(2chloro1methylethyl)Ether	0.00500U	0.0100	0.00310	mg/L
Bis(2-Chloroethoxy)methane	0.00500U	0.0100	0.00310	mg/L
Bis(2-Chloroethyl)ether	0.00500U	0.0100	0.00310	mg/L
bis(2-Ethylhexyl)phthalate	0.00500U	0.0100	0.00310	mg/L
Butylbenzylphthalate	0.00500U	0.0100	0.00310	mg/L
Carbazole	0.00500U	0.0100	0.00310	mg/L
Chrysene	0.00500U	0.0100	0.00310	mg/L
Dibenzo[a,h]anthracene	0.00500U	0.0100	0.00310	mg/L
Dibenzofuran	0.00500U	0.0100	0.00310	mg/L
Diethylphthalate	0.00500U	0.0100	0.00310	mg/L
Dimethylphthalate	0.00500U	0.0100	0.00310	mg/L
Di-n-butylphthalate	0.00500U	0.0100	0.00310	mg/L
di-n-Octylphthalate	0.00500U	0.0100	0.00310	mg/L
Fluoranthene	0.00500U	0.0100	0.00310	mg/L
Fluorene	0.00500U	0.0100	0.00310	mg/L
Hexachlorobenzene	0.00500U	0.0100	0.00310	mg/L
Hexachlorobutadiene	0.00500U	0.0100	0.00310	mg/L
Hexachlorocyclopentadiene	0.0150U	0.0300	0.00940	mg/L
Hexachloroethane	0.00500U	0.0100	0.00310	mg/L
Indeno[1,2,3-c,d] pyrene	0.00500U	0.0100	0.00310	mg/L
Isophorone	0.00500U	0.0100	0.00310	mg/L
Naphthalene	0.00500U	0.0100	0.00310	mg/L
Nitrobenzene	0.00500U	0.0100	0.00310	mg/L
N-Nitrosodimethylamine	0.00500U	0.0100	0.00310	mg/L
N-Nitroso-di-n-propylamine	0.00500U	0.0100	0.00310	mg/L
N-Nitrosodiphenylamine	0.00500U	0.0100	0.00310	mg/L
Pentachlorophenol	0.0250U	0.0500	0.0150	mg/L
Phenanthrene	0.00500U	0.0100	0.00310	mg/L
Phenol	0.00500U	0.0100	0.00310	mg/L
Pyrene	0.00500U	0.0100	0.00310	mg/L
Surrogates				
2,4,6-Tribromophenol (surr)	81.6	43-140		%
2-Fluorobiphenyl (surr)	63.6	44-119		%
2-Fluorophenol (surr)	57.2	19-119		%

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Method Blank					
Blank ID: MB for HBN 17416 Blank Lab ID: 1345542	99 [XXX/36072]	Matrix:	Water (Surfa	ace, Eff., Ground)	
QC for Samples: 1164672001					
Results by SW8270D					
<u>Parameter</u> Nitrobenzene-d5 (surr) Phenol-d6 (surr) Terphenyl-d14 (surr)	<u>Results</u> 60 56.8 105	LOQ/CL 44-120 10-115 50-134	<u>DL</u>	<u>Units</u> % % %	
Batch Information					
Analytical Batch: XMS9556 Analytical Method: SW8270 Instrument: HP 6890/5973 S Analyst: DSH Analytical Date/Time: 8/22/2	D SSA 2016 7:08:00PM	Prep Bato Prep Met Prep Dato Prep Initia Prep Extr	ch: XXX36072 hod: SW3520 e/Time: 8/17/2 al Wt./Vol.: 10 ract Vol: 1 mL	C 016 10:13:40AM 00 mL	

Print Date: 09/02/2016 3:17:54PM

SGS

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#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1164672 [XXX36072] Blank Spike Lab ID: 1345543 Date Analyzed: 08/22/2016 19:26 Spike Duplicate ID: LCSD for HBN 1164672 [XXX36072] Spike Duplicate Lab ID: 1345544 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001

#### Results by SW8270D

Blank Spike (mg/L) Spike Duplicate (mg/L)									
<u>Parameter</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
1,2,4-Trichlorobenzene	0.1	0.0592	59	0.1	0.0613	61	(29-116)	3.40	(< 20)
1,2-Dichlorobenzene	0.1	0.0557	56	0.1	0.0577	58	(32-111)	3.60	(< 20)
1,3-Dichlorobenzene	0.1	0.0549	55	0.1	0.0574	57	(28-110)	4.30	(< 20)
1,4-Dichlorobenzene	0.1	0.0556	56	0.1	0.0584	58	(29-112)	5.00	(< 20)
1-Chloronaphthalene	0.04	0.0286	72	0.04	0.0322	81	(58-111)	11.60	(< 20)
1-Methylnaphthalene	0.1	0.0657	66	0.1	0.0694	69	(41-119)	5.50	(< 20)
2,4,5-Trichlorophenol	0.1	0.0761	76	0.1	0.0812	81	(53-123)	6.50	(< 20)
2,4,6-Trichlorophenol	0.1	0.0725	73	0.1	0.0782	78	(50-125)	7.60	(< 20)
2,4-Dichlorophenol	0.1	0.0601	60	0.1	0.0651	65	(47-121)	7.90	(< 20)
2,4-Dimethylphenol	0.1	0.0546	55	0.1	0.0548	55	(31-124)	0.38	(< 20)
2,4-Dinitrophenol	0.18	0.140	78	0.18	0.164	91	(23-143)	15.30	(< 20)
2,4-Dinitrotoluene	0.1	0.0798	80	0.1	0.0836	84	(57-128)	4.50	(< 20)
2,6-Dichlorophenol	0.04	0.0241	60	0.04	0.0261	65	(50-118)	8.00	(< 20)
2,6-Dinitrotoluene	0.1	0.0766	77	0.1	0.0807	81	(57-124)	5.30	(< 20)
2-Chloronaphthalene	0.1	0.0665	67	0.1	0.0708	71	(40-116)	6.30	(< 20)
2-Chlorophenol	0.1	0.0519	52	0.1	0.0561	56	(38-117)	7.90	(< 20)
2-Methyl-4,6-dinitrophenol	0.18	0.156	87	0.18	0.167	93	(44-137)	7.20	(< 20)
2-Methylnaphthalene	0.1	0.0622	62	0.1	0.0664	66	(40-121)	6.40	(< 20)
2-Methylphenol (o-Cresol)	0.1	0.0542	54	0.1	0.0577	58	(30-117)	6.20	(< 20)
2-Nitroaniline	0.1	0.0833	83	0.1	0.0862	86	(55-117)	3.40	(< 20)
2-Nitrophenol	0.1	0.0649	65	0.1	0.0679	68	(47-123)	4.50	(< 20)
3&4-Methylphenol (p&m-Cresol)	0.14	0.0833	60	0.14	0.0893	64	(29-110)	7.00	(< 20 )
3,3-Dichlorobenzidine	0.1	0.0764	76	0.1	0.0762	76	(27-129)	0.24	(< 20)
3-Nitroaniline	0.1	0.0814	81	0.1	0.0861	86	(41-128)	5.50	(< 20)
4-Bromophenyl-phenylether	0.1	0.0840	84	0.1	0.0866	87	(55-124)	3.00	(< 20)
4-Chloro-3-methylphenol	0.1	0.0676	68	0.1	0.0734	73	(52-119)	8.10	(< 20)
4-Chloroaniline	0.1	0.0570	57	0.1	0.0584	58	(33-117)	2.50	(< 20)
4-Chlorophenyl-phenylether	0.1	0.0783	78	0.1	0.0843	84	(53-121)	7.30	(< 20)
4-Nitroaniline	0.1	0.0816	82	0.1	0.0869	87	(74-118)	6.30	(< 20)
4-Nitrophenol	0.14	0.0967	69	0.14	0.104	74	(52-111)	7.00	(< 20)
Acenaphthene	0.1	0.0734	73	0.1	0.0789	79	(47-122)	7.30	(< 20)
Acenaphthylene	0.1	0.0740	74	0.1	0.0776	78	(41-130)	4.70	(< 20)
Aniline	0.1	0.0340J	34	0.1	0.0320J	32	(10-87)	6.20	(< 20)
Anthracene	0.1	0.0740	74	0.1	0.0766	77	(57-123)	3.50	(< 20)

Print Date: 09/02/2016 3:17:56PM

SGS North America Inc.



#### Blank Spike Summary

Blank Spike ID: LCS for HBN 1164672 [XXX36072] Blank Spike Lab ID: 1345543 Date Analyzed: 08/22/2016 19:26 Spike Duplicate ID: LCSD for HBN 1164672 [XXX36072] Spike Duplicate Lab ID: 1345544 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001

#### Results by SW8270D

	Blank Spike (mg/L) Spike Duplicate (mg/L)								
Parameter	<u>Spike</u>	<u>Result</u>	<u>Rec (%)</u>	Spike	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Azobenzene	0.1	0.0879	88	0.1	0.0879	88	(61-116)	0.01	(< 20)
Benzo(a)Anthracene	0.1	0.0888	89	0.1	0.0889	89	(58-125)	0.08	(< 20)
Benzo[a]pyrene	0.1	0.0826	83	0.1	0.0848	85	(54-128)	2.60	(< 20)
Benzo[b]Fluoranthene	0.1	0.0936	94	0.1	0.0917	92	(53-131)	2.00	(< 20)
Benzo[g,h,i]perylene	0.1	0.0941	94	0.1	0.0932	93	(50-134)	0.91	(< 20)
Benzo[k]fluoranthene	0.1	0.0865	87	0.1	0.0942	94	(57-129)	8.50	(< 20)
Benzoic acid	0.14	0.0654	47	0.14	0.0839	60	(21-107)	24.80	* (< 20)
Benzyl alcohol	0.1	0.0551	55	0.1	0.0589	59	(31-112)	6.80	(< 20)
Bis(2chloro1methylethyl)Ether	0.1	0.0606	61	0.1	0.0634	63	(37-130)	4.60	(< 20)
Bis(2-Chloroethoxy)methane	0.1	0.0679	68	0.1	0.0707	71	(48-120)	4.00	(< 20)
Bis(2-Chloroethyl)ether	0.1	0.0539	54	0.1	0.0554	55	(43-118)	2.70	(< 20)
bis(2-Ethylhexyl)phthalate	0.1	0.0896	90	0.1	0.0909	91	(55-135)	1.50	(< 20)
Butylbenzylphthalate	0.1	0.0899	90	0.1	0.0925	93	(53-134)	2.90	(< 20)
Carbazole	0.1	0.0856	86	0.1	0.0903	90	(60-122)	5.40	(< 20)
Chrysene	0.1	0.0939	94	0.1	0.0946	95	(59-123)	0.75	(< 20)
Dibenzo[a,h]anthracene	0.1	0.0969	97	0.1	0.0961	96	(51-134)	0.77	(< 20)
Dibenzofuran	0.1	0.0732	73	0.1	0.0775	78	(53-118)	5.70	(< 20)
Diethylphthalate	0.1	0.0783	78	0.1	0.0826	83	(56-125)	5.40	(< 20)
Dimethylphthalate	0.1	0.0766	77	0.1	0.0795	80	(45-127)	3.80	(< 20)
Di-n-butylphthalate	0.1	0.0843	84	0.1	0.0889	89	(59-127)	5.30	(< 20)
di-n-Octylphthalate	0.1	0.0928	93	0.1	0.0929	93	(51-140)	0.14	(< 20)
Fluoranthene	0.1	0.0818	82	0.1	0.0859	86	(57-128)	4.90	(< 20)
Fluorene	0.1	0.0777	78	0.1	0.0791	79	(52-124)	1.90	(< 20)
Hexachlorobenzene	0.1	0.0812	81	0.1	0.0848	85	(53-125)	4.40	(< 20)
Hexachlorobutadiene	0.1	0.0627	63	0.1	0.0641	64	(22-124)	2.30	(< 20)
Hexachlorocyclopentadiene	0.1	0.0419	42	0.1	0.0388	39	(10-93)	7.60	(< 20)
Hexachloroethane	0.1	0.0527	53	0.1	0.0550	55	(21-115)	4.20	(< 20)
Indeno[1,2,3-c,d] pyrene	0.1	0.0904	90	0.1	0.0899	90	(52-134)	0.54	(< 20)
Isophorone	0.1	0.0609	61	0.1	0.0670	67	(42-124)	9.50	(< 20)
Naphthalene	0.1	0.0615	62	0.1	0.0634	63	(40-121)	3.00	(< 20)
Nitrobenzene	0.1	0.0609	61	0.1	0.0622	62	(45-121)	2.10	(< 20)
N-Nitrosodimethylamine	0.1	0.0467	47	0.1	0.0501	50	(41-117)	7.10	(< 20)
N-Nitroso-di-n-propylamine	0.1	0.0664	66	0.1	0.0719	72	(49-119)	7.90	(< 20)
N-Nitrosodiphenylamine	0.1	0.0699	70	0.1	0.0699	70	(51-123)	0.03	(< 20)

Print Date: 09/02/2016 3:17:56PM

SGS North America Inc.



#### Blank Spike Summary

Blank Spike ID: LCS for HBN 1164672 [XXX36072] Blank Spike Lab ID: 1345543 Date Analyzed: 08/22/2016 19:26 Spike Duplicate ID: LCSD for HBN 1164672 [XXX36072] Spike Duplicate Lab ID: 1345544 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1164672001

#### Results by SW8270D

		Blank Spike	(mg/L)	5	Spike Duplic	ate (mg/L)			
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Pentachlorophenol	0.14	0.124	89	0.14	0.131	94	(35-138)	5.20	(< 20)
Phenanthrene	0.1	0.0838	84	0.1	0.0856	86	(59-120)	2.10	(< 20)
Phenol	0.1	0.0452	45	0.1	0.0483	48	(39-84)	6.50	(< 20)
Pyrene	0.1	0.0860	86	0.1	0.0896	90	(57-126)	4.10	(< 20 )
Surrogates									
2,4,6-Tribromophenol (surr)	0.2	86.7	87	0.2	93.3	93	(43-140)	7.30	
2-Fluorobiphenyl (surr)	0.1	69	69	0.1	74.3	74	(44-119)	7.30	
2-Fluorophenol (surr)	0.2	53.3	53	0.2	58.5	59	(19-119)	9.30	
Nitrobenzene-d5 (surr)	0.1	62.3	62	0.1	64.8	65	(44-120)	4.00	
Phenol-d6 (surr)	0.2	55.3	55	0.2	60.5	61	(10-115)	8.90	
Terphenyl-d14 (surr)	0.1	91.9	92	0.1	100	100	(50-134)	8.70	

#### **Batch Information**

Analytical Batch: XMS9556 Analytical Method: SW8270D Instrument: HP 6890/5973 SSA Analyst: DSH Prep Batch: XXX36072 Prep Method: SW3520C Prep Date/Time: 08/17/2016 10:13 Spike Init Wt./Vol.: 0.1 mg/L Extract Vol: 1 mL Dupe Init Wt./Vol.: 0.1 mg/L Extract Vol: 1 mL

Print Date: 09/02/2016 3:17:56PM

SGS North America Inc.

#### Method Blank

SG

Blank ID: MB for HBN 1741723 [XXX/36075] Blank Lab ID: 1345632

QC for Samples: 1164672001

#### Results by SW8082A

Parameter	Results	LOQ/CL	DL	Units
Aroclor-1016	0.200U	0.400	0.120	ug/L
Aroclor-1221	0.500U	1.00	0.310	ug/L
Aroclor-1232	0.0500U	0.100	0.0310	ug/L
Aroclor-1242	0.0500U	0.100	0.0310	ug/L
Aroclor-1248	0.0500U	0.100	0.0310	ug/L
Aroclor-1254	0.0500U	0.100	0.0310	ug/L
Aroclor-1260	0.0500U	0.100	0.0310	ug/L
Surrogates				
Decachlorobiphenyl (surr)	96	40-135		%

#### **Batch Information**

Analytical Batch: XGC9464 Analytical Method: SW8082A Instrument: Agilent 7890B GC ECD SW F Analyst: S.G Analytical Date/Time: 8/18/2016 12:22:00PM Prep Batch: XXX36075 Prep Method: SW3520C Prep Date/Time: 8/17/2016 3:07:54PM Prep Initial Wt./Vol.: 1000 mL Prep Extract Vol: 1 mL

Matrix: Water (Surface, Eff., Ground)

Print Date: 09/02/2016 3:17:59PM

SGS North America Inc.



#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1164672 [WWWX6579] Blank Spike Lab ID: 1X496XX Da3e t nalAyez: 5d01d02516 12:X2 Spike D8pli/ a3e ID: LCSD for HBN 1164672 [WWWx6579] Spike D8pli/ a3e Lab ID: 1X496X4 Ra3is: Ma3er xS8rfa/ e(, fft . ro8nzG

g C for SaP plec: 1164672551

u ec8l3c bA SW8082A									
		Blank Spike	ex8%0LG	:	Spike D8pli/	a3ex8%0LG			
<u>) araPe3er</u>	Spike	<u>u ec8l3</u>	<u>ue/xm</u> G	<u>Spike</u>	<u>u ec8l3</u>	<u>ue/xm</u> G	<u>CL</u>	<u>u)Dxm</u> G	u) D CL
t ro/lorQ1516	1	5日T5	Π	1	155X	15X	x46Q2TG	XET6	xh X5 G
t ro/lorQ265	1	5日45	T4	1	5日75	T7	x49Q1X4 G	XE14	xh X5 G
Surrogates									
De/ a/ - lorobip- enAl xc8rrG	155	T4	T4	155	T7	T7	x45C1X9G	XE14	
Batch Information									

t nalA3/ al Ba3 - : XGC9464 t nalA3/ al Re3 oz: SW8082A Inc38Pen3 Agilent 7890B GC ECD SW F t nalAc3 S.G ) rep Ba3 - : XXX36075 ) rep Re3 oz: SW3520C ) rep Da3e0<iP e: 08/17/2016 15:07 Spike Ini3M3E0/oIE 1 8%L , s3a/ 3Vol: 1 PL D8pe Ini3M3E0/oIE 1 8%L , s3a/ 3Vol: 1 PL

) rin3Da3e: 5T05202516 X:1d:51) R

S. S Nor3 t Peri/ a In/ E

GS			Sar USAL	mpling and Testing Repo -FG-GRZZZ-00-002016-	r <u>L - Event 2</u> 004 Rev. 0 16-Dec-16			
Method Blank Blank ID: MB for HBN 174 Blank 5a] ID: 1647L4b QC for Samples: 1134372bb1	2123 [XXX/631670	Matrix: Water (Surface, Eff., Ground)						
Results ] y <b>AK102</b>	Results	<u>50Q/C5</u>	<u>D5</u>	Units				
Diesei RanAe OrAanics Surrogates La gndrostane (surr)	D.600U	b.3bb 3b812b	D.1- D	mA/5 h				
gnalyst: NRŌ gnalytical Date/Vime: -/2	L/2b13 11:1L:bbgM	Prep Ini Prep Ex	tial Wt./vol.: 2Lb tract vol: 1m5	o m5				

Print Date: b%b2/2b13 6:1-:b6PM

SGS Nort9 gmerica Inc.



#### Blank Spike Summary

Blank Spike ID: LCS for HBN 1164672 [VVVX61X79 Blank Spike La3 ID: 1X47841 Da]e bnal0t eA: yzd28d2y16 11:28 Spike D/ pli5a]e ID: LCSD for HBN 1164672 [VVVX61X79 Spike D/ pli5a]e La3 ID: 1X47842 Ra]ris: Ma]er xS/ rfa5eW( ff,WEro/ nA.

%C for Sa) plec: 1164672yy1

u ec/ l]c 30 AK102									
		Blank Spike	ex)mdL.	S	Spike D/ pli				
<u>Gara) e]er</u>	<u>Spike</u>	<u>u ec/ []</u>	<u>u e5 xP.</u>	<u>Spike</u>	<u>u ec/ []</u>	<u>u e5 xP.</u>	CL	<u>u GD xP.</u>	<u>u GD CL</u>
Diecel u anme g rmani5c	2y	16,-	z8	2y	16,1	zy	x78Q128.	8,2y	xO2y.
Surrogates									
8a bnAroc]ane xc/ rr.	у,4	z2,-	zX	у,4	zy,4	zy	x6yQl2y.	Х,уу	
Batch Information									
bnal0]i5al Ba]5<: XFC12740				Gre	р Ва]5<: <b>Х</b>	XX36137			
bnal0]i5al Re] <oa: ak102<="" td=""><td></td><td></td><td></td><td>Gre</td><td>pRe]<oa:< td=""><td>SW3520C</td><td></td><td></td><td></td></oa:<></td></oa:>				Gre	pRe] <oa:< td=""><td>SW3520C</td><td></td><td></td><td></td></oa:<>	SW3520C			
Inc]r/) en]: Agilent 7890B R				Gre	p Da]edi)	e: 08/24/201	6 16:23		
bhalucj: NRO				Spil	ke inij ivij,a Na kaj M1 di	iol,:2y)mo Tol:2v)mo			
				D/ p	be mij ivi],di	0i,. ∠y) mu	- (slige] io	I. I)∟	

Grin] Da]e: y-dy2d2y16 X:1z:y8GR

SES Nor]< b) eri5a In5,

Blank ID: MB for HBN 1742 Blank Lab ID: 1347540 QC for Samples:	126 [XXX/36137]	Matrix	k: Water (Surfa	ce, Eff., Ground)	
Results by <b>AK103</b>	Populto	L 00/0		Unito	
Residual Range Organics	0.386J	0.500	<u>DL</u> 0.150	mg/L	
<b>urrogates</b> n-Triacontane-d62 (surr)	79	60-120		%	
Analytical Batch: XFC1274 Analytical Batch: XFC1274 Analytical Method: AK103 Instrument: Agilent 7890B I Analyst: NRO Analytical Date/Time: 8/25/	0 R 2016 11:15:00AM	Prep Ba Prep Me Prep Da Prep Init Prep Ex	tch: XXX36137 ethod: SW35200 te/Time: 8/24/20 tial Wt./Vol.: 250 tract Vol: 1 mL	C 016 4:23:16PM ) mL	

Print Date: 09/02/2016 3:18:08PM

SGS North America Inc.



#### Blank Spike Summary

Blank Spike ID: LCS for HBN 1164672 [VVVX61X79 Blank Spike La3 ID: 1X47841 Da]e bnal0t eA: yzd28d2y16 11:28 Spike D/ pli5a]e ID: LCSD for HBN 1164672 [VVVX61X79 Spike D/ pli5a]e La3 ID: 1X47842 Ra]ris: Ma]er xS/ rfa5eW( ff,WEro/ nA.

%C for Sa) plec: 1164672yy1

Spikex)mdL.	S	pike D/ pli	5a]ex)mdL.			
<u>ue5xP.</u>	<u>Spike</u>	<u>u ec/ l]</u>	<u>u e5 xP.</u>	<u>CL</u>	<u>u GD xP .</u>	<u>u GD CL</u>
) z4	2y	18,z	7Q	x6yCl2y.	6,4y	ж 2у.
2 z4	у,4	z1,7	z2	x6yd2y.	2,6y	
	Gre Gre Gre Spil D/ p	o Ba]5h: XX o Re]hoA: o Da]ecki) ke Ini] M],đľ ve Ini] M],đľ	XX26124 SW2570C e: 09/78/701 fol,: 2y) mot fol,: 2y) mot	<b>6 16:72</b> _ (s]ra5] To _ (s]ra5] Tol	ol: 1) L : 1) L	
	\$pike x) moL. <u>'∐ ue5 xP.</u> } z4 2 z4	\$pike x) mdL. S <u>'  ] ue5 xP. Spike</u> ↓ z4 2y ↓ z4 y,4 Greµ Greµ Greµ Spik D/ p	spike x) mdL.       Spike D/ plit         '_]] <u>u e5 xP.</u> Spike <u>u ec/ I]</u> \       z4       2y       18,z         \       z4       y,4       z1,7         Grep Ba]5h: X.       Grep Re]hoA:       Grep Da]ed <i)< td="">         Spike Ini] M],dI       D/ pe Ini] M],dI</i)<>	spike x) mdL.       Spike D/ pli5a]e x) mdL.         '_[]       ue5xP.         2       z4         2       18,z         2       z4         y,4       z1,7         z2         Grep Ba]5h: XXX26124         Grep Re]hoA:         SW2570C         Grep Da]ed <i) e:<="" td="">       09/78/701         Spike Ini] M],dTol,:       2y ) md         D/ pe Ini] M],dTol,:       2y ) md</i)>	Spike X) mdL.       Spike D/ pli5a]e x) mdL.         '_[] <u>ue5 xP.</u> Spike <u>uec/I]</u> <u>ue5 xP.</u> CL         \       z4       2y       18,z       7Q       x6yCl2y.         \       z4       y,4       z1,7       z2       x6yCl2y.         \       grep Ba]5h:       XXX26124       Grep Re]hoA:       SW2570C         Grep Da]ed <i)< td="">       e:       09/78/7016       16:72         Spike Ini] M],dTol,:       2y)       mdL       (s]ra5] Tol</i)<>	Spike X) mtL.       Spike D/ pli5a]e X) mtL.         '_I]       ue5 xP.       CL       uGD xP.         2       z4       2y       18,z       7Q       x6yCl2y.       6,4y         2       z4       y,4       z1,7       z2       x6yCl2y.       2,6y         Grep Ba]5h: XXX26124         Grep Re]hoA:       SW2570C         Grep Da]ecki) e:       09/78/7016       16:72         Spike Ini] M],dTol,:       2y) mtL       (s]ra5] Tol:       1) L

Grin] Da]e: yQdy2d2y16 X:1z:yQGR

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GR222-00-002016-004 Rev. 0 Amended 16-Dec-16 SGS North America Inc. CHAIN OF CUSTODY RECORD CLIENT: Instructions: Sections 1 - 5 must be filled out. SLR International Omissions may delay the onset of analysis. 2. CONTACT: PHONE #: Jason Grav 264-6965 Section 3 Preservative PROJECT Project #: 105.00148.16001 # Section Kenai Wells - July APT NAME: Pres: Nalson H2SOA Event A 10 Type: Non С E-MAIL: REPORTS TO: 0 Comp Carbon 1 eTONOSON @ FUGIO. COM SW8270D SIM - Pesticides COD N Jason Gray jgray@slrconsulting.com **Total Organic Carbon** Grab Т NH4, TKN, T-Phos, Dissolved Organic SIM - PAH A QUOTE #: INVOICE TO: 2015 SLR General MI I SW8082 - PCB Fecal Coliform **Total Residue** P.O. #: SLR International (Multi-N incre-MATRIX/ E mental) 625 RESERVED DATE 0-Phos TIME SAMPLE IDENTIFICATION MATRIX R for lab use **REMARKS**/ mm/dd/yy HH:MM EPA CODE S LOC ID TP W-5-0816 8-11-16 1405 28 Water 63 d x d el 20 N. d TB-1-1405 Water 2 -On payle 2 TB-2-1405 Water 3 -N Dade CA S 12-3-1405 Section al Water pulle OA Water Water Water Water Water Water Relinquished By: (1) 14le Jonos Section 4 DOD Project? Yes No Date Time **Data Deliverable Requirements:** Received By: 8-11-16 1550 LVL2 Cooler ID: Relinguished By: (2) Date Time Received By: Requested Turnaround Time and/or Special Instructions: 5 Section Relinquished By: (3) Date Time **Received By:** Temp Blank °C: Chain of Custody Seal: (Circle) Relinguished By: (4) Date Time Received For Laboratory By: or Ambient [ ] INTACT BROKEN ABSENT

] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301

[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

http://www.sgs.com/terms-and-conditions

(See attached Sample Receipt Form)

(See attached Sample Receipt Form)

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		J.J.		ε.

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		SLR International						Omis	sions	may	dela	v the	ons	at of	analy	u oui	••		2 7
	CONTACT:		PHONE #:					T		- may	uoru	y crit	2 Onlo		anany	010.		-	Page of
		Jason Gray	264	4-6965		Sec	tion 3					Prese	rvative						
2	PROJECT	Kenai Wells - July APT	Project #:	105.0014	8.16001	#				/	1		7	-	1	-			1
ctio	NAME:	Event A					Pres: Type:	105	s /	se / on	e / 10	»/.c		3/0	. /.0	/		10	
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L										(See	attach	ed Sai	nple Re	eceipt F	·orm)	(Sc	e attac	ched Sa	imple Receipt Form)

[ ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
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#### SGS North America Inc. CHAIN OF CUSTODY BECODD

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	1		Jason Gray	264	-6965		Sec	tion 3					Drocor	votivo					
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L											(See	attach	ed Sam	ple Re	eceipt l	Form)	(See a	attache	d Sample Receipt Form

[ ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5301
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Ē		S		(	SGS No HAIN OF	orth A	merica ODY F	a Inc. RECO	RD		1	16	46	72	LNG Samplir SAL-FG	G Faciliti ng ang ⁻ -GRZZ	ies Gro Testing 2-00-00	Confidential oundwater Quality Report - Event 2 2016-004 Rev. 0 16-Dec-16
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		Jason Gray	26	6965		Sec	tion 3					Prese	rvativo					Page of
ection	PROJECT NAME:	Kenai Wells - July APT Event A	Project #:	105.0014	8.16001	#	Pres:		50 ⁴	ste / 2		/		/	./		_s o ^x /	/
S	REPORTS T	O: Jason Gray	E-MAIL: KeJownson @ jgray@slrcons	Fag.W. Com			Comp	6		5	Carbon	40.	Ho.	ticides	HO	Na.	<u> </u>	]
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	Polinquieto	Bur (2)	0 1110	1550			/	_		Cool	er ID:							LVL2
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CLIENT:	SI P International				T	In	struc	tions	: Sec	ctio								
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	Jason Gray jgra	ay@slrconsu	iting.com		N T	Grab	Turbldit	S04		y 200.8		tals by					IRRO	
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DI-W T	PW-5	8-11-16	1405	Water	28	6	×	x	×	d'	×	a	a	d	d	x	a	labels called
3A-C	TB-1-1405		4	Water	3	-								X				W-5 new
OH-C	TB-2-1405			Water	3	-										N		name TPU1-5
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[ ] 200 W. [ ] 5500 Bi	Potter Drive Anchorage, AK 995 usiness Drive Wilmington, NC 28	18 Tel: (907) 405 Tel: (910)	562-2343 Fa	x: (907) 561-5:	301	0			http://	www.sg	s.com/	terms-a	ind-con	ditions				

115 of 131 F083-Kit_Request_and_COC_Templates-Blank Revised 2013-03-24

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		Jason Gray	264	-6965		Sec	ction 3					Preserv	/ative				·
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tion 5					Neceiveu By					Reques	ted Tu	irnarour	nd Time	and/or	Speci	al Instruct	ions:
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[ ] 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 Fax: (907) 561-5304
 [ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

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AIRPORT OF DEPARTURE ENA 08/11/1	6 16:08 097	165	Confidential 808 7111599 G Facilities Groundwater Qualited ush
SHIPPER'S NAME, ADDRESS & PHONE FUGRO KYLE JOHNSON	SHIPPER'S	S ACCOUNT NUMBER	NOT AIR WAYBILL (AIR CONSIGNMENT NOTE)
KENAI     AK       CONSIGNEE'S NAME, ADDRESS & PHONE       SGS     JUSTIN NELSON       200     W POTTER DR       ANCHORAGE     AK	520 CONSIGNEE 9518 90	08081220 TS ACCOUNT NUMBER	It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT AS LISTED IN THE COMPANIES TARIFFS. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIERS' LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charge if required. Received in Good Condition Place
ISSUING CARRIER'S AGENT NAME, CITY & PH	IONE		ALSO NOTIFY NAME & ADDRESS
AGENT'S IATA CODE	ACCOUNT NO.	Insured Amount	ACCOUNTING INFORMATION 7133751 — Card VI 1531 Exp 0517
AIRPORT OF DESTINATION AIRPORT OF DESTINATION Anchorage			COMMENTS DEPT 841 ARVS 517P
No. Of Pieces Rcp Weight Ib Commodity Item No.	Chargeable Weight	Rate/Charge	Total Nature and Quantity of Goods
1 60 I F RUSH		581.88 S	\$81.88 SAMPLES
\$81.88 VALUATION CHARGE		AMOUNT	DESCRIPTION
\$0.00 FEDERAL EXCISE TAX \$5.12 TOTAL OTHER CHARGES DUE \$0.00	AGENT		HAZMAT No
TOTAL OTHER CHARGES DUE C \$0.00 ITOTAL PREPAID \$87.00 STATION NUMBERS ANCHORAGE - (907) 243-2781 BARROW - (907) 852-5300 BARROW - (907) 852-5300 NOME - (	ARRIER TOTAL COLLECT KS - (007) 450-7250 (007) 656-1875 16 - (007) 452-7250 107) 443-7595 5 - (007) 432-7255 5 - (007) 432-725 5 - (007) 432-725	Shipper certifies that to COMPANIES TARIFF unless a higher value part of the consignme by air according to ap Air Transport Associat Paid By Shippe	the particulars on the face hereof are correct, agrees to the CONDITIONS AS LISTED IN THE S, accepts that carrier's liability is limited as stated in the companies tariffs and accepts such value for carriage is declared on the face hereof subject to an additional charge and that insofar as any nt contains restricted articles, such part is described by name and is in proper condition for carriage plicable national governmental regulations, and for international shipments, the current international tion's Restricted Articles Regulations.
DEADHORSE - (907) 659-9222 ST. MAR UNALAKL Printed at 18:19:15 on 8/11/2016 at ANC-F	EET - (907) 824-3595 RT2 10.14.14.3	Printed Name and Title	·

**Customer Copy** 

<b>6-</b> 5		F RFCF		LNG F	-aciliti and 1	es Ground	Cor wate port	ifidential r Quality	
SGS		1	<b>1646</b>	72	H222		<b>16</b> 5 4 <b>6</b>	-Dec-16	
Review Criteria	Y/	/N (yes/n	o)	Except	ions l	Noted be	low		
				Y exemption permittee	d if san	npler hand	carrie	es/delivers.	
Were Custody Seals intact? Note #	& location	γ			1-F, 1-I	R			
COC accompanied	samples	? Y					_		
Y **exemption perm	nitted if ch	nilled & co	ollected <8	hrs ago or chlling not req	uired (	i.e., waste,	oil)		
		Υ	Cooler ID:	. 1	@	4.2	°C	Therm ID:	242
		Y	Cooler ID:	:	@		°C	Therm ID:	
Temperature blank compliant* (i.e., 0-6 °C	after CF)	? Y	Cooler ID:	:	@		°C	Therm ID:	
		Y	Cooler ID:	:	@		°C	Therm ID:	
		Y	Cooler ID:	:	@		°C	Therm ID:	
*If >6°C, were samples collected <8 hor	urs ago?	Y							
If <0°C, were sample containers	s ice free?	Y							1
be documented in lieu of the temperature blank & <b>'COOLER TEMP</b> " will to the right. In cases where neither a temp blank nor cooler temp can b obtained, note "ambient" or "chilled". Note: Identify containers received at non-compliant temperature . Us	l be notec be e form FS	-							
0029 Il more space is needed.			- (				_		
Were samples received within h	hold time?	P P P	ote: keter	to form F-083 "Sample G	uide" 1	or hola tim	es.		
Do samples match COC** (i.e.,sample IDs,dates/times of	collected)	? N							
**Note: If times differ <1hr, record details & logi	n per COC	* 							
Were analyses requested unar	nbiguous	2 Y							
				v ***Exemption perm	itted fo	or metals (f	g 20	0.8/6020A).	
Were proper containers (type/mass/yolume/preservative	***)used					// metalo , c	·b/=c		
	Jusee	إلفكا							
Were Trin Blanks (i.e., VOAs, LL-Hg) in cooler with	o samples								
Were all VOA vials free of headspace (i.e., hubble	samples								
Were all soil VOAs field extracted with M							—		
	2011 Di Di		th stand	la damaged and mou		· · · · · · · · · · · · · · · · · · ·			
Note to Lilent: Any no answer above multate	es non-co	mpliance	with stand	lard procedures and may	impac	t data quan	ty.		
*See revised COC for sample date/time changes.	uonai n	otes (n	аррпсар	IE).					

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# **Sample Containers and Preservatives**

<u>Container Id</u>	Preservative	<u>Container</u> Condition	<u>Container Id</u>	<u>Preservative</u>	<u>Container</u> <u>Condition</u>
1164672001-A	H2SO4 to pH < 2	ОК			
1164672001-В	No Preservative Required	ОК			
1164672001-C	HCL to pH < 2	ОК			
1164672001-D	No Preservative Required	ОК			
1164672001-E	No Preservative Required	ОК			
1164672001-F	No Preservative Required	ОК			
1164672001-G	No Preservative Required	ОК			
1164672001-H	No Preservative Required	ОК			
1164672001-I	No Preservative Required	ОК			
1164672001-J	No Preservative Required	ОК			
1164672001-K	No Preservative Required	ОК			
1164672001-L	HNO3 to pH < 2	ОК			
1164672001-M	HCL to pH < 2	ОК			
1164672001-N	HCL to pH < 2	ОК			
1164672001-0	HCL to $pH < 2$	ОК			
1164672001-P	HCL to $pH < 2$	ОК			
1164672001-Q	No Preservative Required	ОК			
1164672001-R	No Preservative Required	ОК			
1164672001-S	HCL to $pH < 2$	ОК			
1164672001-T	HCL to $pH < 2$	ОК			
1164672001-U	HCL to $pH < 2$	ОК			
1164672001-V	HCL to $pH < 2$	ОК			
1164672001-W	HCL to $pH < 2$	ОК			
1164672001-X	No Preservative Required	ОК			
1164672002-A	HCL to $pH < 2$	ОК			
1164672002-B	HNO3 to pH < 2	ОК			
1164672002-C	HCL to $pH < 2$	ОК			
1164672003-A	HCL to $pH < 2$	ОК			
1164672003-В	HCL to $pH < 2$	ОК			
1164672003-C	HCL to $pH < 2$	ОК			
1164672004-A	HCL to $pH < 2$	ОК			
1164672004-B	HCL to $pH < 2$	ОК			
1164672004-C	HCL to $pH < 2$	ОК			
1164672005-A	HCL to $pH < 2$	ОК			

Container Id

Preservative

Container Condition <u>Container Id</u>

Confidential <u>Preservative</u> Facilities Groundwater <u>Gruatitiver</u> Sampling and Testing Report <u>Fyent 2</u> USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM- The container was received damaged.

FR- The container was received frozen and not usable for Bacteria or BOD analyses.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

8/17/2016

E-341



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626 **T** : +1 360 577 7222 **F** : +1 360 636 1068 www.alsglobal.com

Analytical Report for Service Request No: K1609302

August 24, 2016

Julie Shumway SGS Environmental Services, Inc. 200 West Potter Drive Anchorage, AK 99518

# RE: Kenai Wells-July APT Event A

Dear Julie,

Enclosed are the results of the sample(s) submitted to our laboratory August 12, 2016 For your reference, these analyses have been assigned our service request number **K1609302**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

Janet mallich

Noward Holmes Project Manager





ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626 **T**: +1 360 577 7222 **F**: +1 360 636 1068 www.alsglobal.com

# **Table of Contents**

Acronyms Qualifiers State Certifications, Accreditations, And Licenses Chain of Custody General Chemistry

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## Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M MCL	Modified Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH tr	Total Petroleum Hydrocarbons Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

- **Inorganic Data Qualifiers**
- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

#### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

#### **Organic Data Qualifiers**

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- E The result is an estimated value.
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
   DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

#### Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

## ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	_
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPer mitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wisconsin DNR	http://dnr.wi.gov/	998386840
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA
Wyoming (EPA Region 8) Kelso Laboratory Website	http://www.epa.gov/region8/water/dwhome/wyomingdi.html www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



# Chain of Custody

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Bev. 0 16 Dec 16 / 93 // Locations Nationwide

Kentucky



# SGS North America Inc. CHAIN OF CUSTODY RECORD



Alaska	Maryland
New Jersey	New York
North Carolina	Indiana

West Virgina

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CLIENT:	SGS North Am	ierica Inc Al	aska Divisior	1	SGS	S Refere	nce:						willie werke witerstere		
CONTACT:	Julie Shumway	ONE NO:	(907) 56	2-2343	Addit reque	tional Co ested.	ommen	ts: /	All soil	s repo	ort ou	t in dry	weight unles	s otherwise	Page of
PROJECT NAME: REPORTS T	Kenai Wells - July Pr APT Event A Pr O: E-	IOJECT/ VSID/ IRMIT#: MAIL: Ju	lie Shumway(	@sgs.com	# C O N T A	Preserv- ative Used: TYPE C = COMP G =	ŋ								
NUVOICE TO	SGS - Alaska P.	0. #:	116467	72	N	GRAS MUHTI Incre-	thylf-								
RESERVED for lab use	SAMPLE IDENTIFICATION	DATE mm/dd/vv	TIME	MATRIX/	R	mental Soils	Chloro				мз	MSD	SGS lab #	Loc ID	REMARKS
	TPW-5	08/11/16	1405	GW	1	GRAB	Х						1164672001		
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[ X ] 200 W. F	Potter Drive Anchorage, AK 9	1518 Tel: (907	) 562-2343 F	ax: (907) 561-5	5301				http://v	ww.sq	s.com/	terms a	nd conditions.h	tm	

[ ] 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

Cooler Receipt and Preservation Form Client $\underline{SGSNorthAmerica, Inc.}$ Service Request K16 $\underline{O9302}$ Received: $\underline{8/12/16}$ Opened: $\underline{8/12/16}$ By: $\underline{CG}$ Unloaded: $\underline{8/12/16}$ By: $\underline{CG}$ 1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered						
Received: $\frac{8}{12}/16$ Opened: $\frac{8}{12}/16$ By: CG Unloaded: $\frac{8}{12}/16$ By: CG						
1. Samples were received via? USPS Fed Ex UPS DHL PDX Courier Hand Delivered						
2. Samples were received in: (circle) Cooler Box Envelope Other NA 3. Were custody seals on coolers? NA Y N If yes, how many and where? I From the Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second Second S						
It present, were clustody seals intact? N If present, were they signed and dated? N N						
Raw Connected Raw Connected Cont. Interminimeter ContentCoci NA Fit						
-0.9 $-0.9$ $2.4$ $2.3$ $-0.1$ $369$						
-0.1 $-0.2$ $1.8$ $1.1$ $-0.1$ $362$						
4. Packing material: Inserts Baggies Bubble Wap Gel Packs Wet Ice Dry Ice Sleeves						
5. Were custody papers properly filled out (ink, signed, etc.)? NA						
6. Were samples received in good condition (temperature, unbroken)? Indicate in the table below. NA (Y) N						
If applicable, tissue samples were received: Frozen Partially Thawed Thawed						
7. Were all sample labels complete (i.e analysis, preservation, etc.)? NA (Y) N						
8. Did all sample labels and tags agree with custody papers? Indicate major discrepancies in the table on page 2. NA Y						
9. Were appropriate bottles/containers and volumes received for the tests indicated? NA						
10. Were the pH-preserved bottles (see SMO GEN SOP) received at the appropriate pH? Indicate in the table below (NA) Y						
11. were VOA viais received without headspace? Indicate in the table below.						
12. Was C12/Res negative?						
Sample ID on Prittie						
$V_{5-0816}$ $T_{PW-5}$ $E_{limin}$						
W5-0816 ITW-5 Elimination						
Bottle Count     Out of Head- Bottle Type     Bottle Count     Out of Head- Temp space     Volume     Reagent     Lot       Sample ID     Bottle Type     Temp space     Broke     pH     Reagent     added     Number     Initials     Time						
Bottle Count     Out of Head- Bottle Type     Volume     Reagent Lot       Sample ID     Bottle Type     Temp space     Broke     pH     Reagent     added     Number     Initials     Time						
Bottle Count     Out of Head- Bottle Type     Prove Broke     Volume     Reagent     Lot       Sample ID     Bottle Type     Temp     space     Broke     pH     Reagent     added     Number     Initials     Time						
Bottle Count     Out of Head- Temp space     PH     Reagent     Volume added     Reagent Lot       Sample ID     Bottle Type     Temp space     Broke     pH     Reagent     added						
Bottle Count     Out of Head- Bottle Type     Processor     Volume     Reagent Lot       Sample ID     Bottle Type     Temp space     Broke     pH     Reagent     added						
Bottle Count     Out of Head- Bottle Type     Reagent     Volume     Reagent Lot       Sample ID     Bottle Type     Temp space     Broke     pH     Reagent     added						
Bottle Count     Out of Head- Temp space     Volume     Reagent Lot       Sample ID     Bottle Type     Temp space     Broke     pH     Reagent     added						
Notes, Discrepancies, & Resolutions:     Did     Out of Head- Temp space     Out of Head- Broke     PH     Reagent     Volume     Reagent Lot       Notes, Discrepancies, & Resolutions:     Did     rot     rec:rre     CCC     for     S&mple     W5     O&16'						
Sample ID     Bottle Count Bottle Type     Out of Temp space     Head- space     PH     Reagent     Volume added     Reagent Lot Number     Initials       Notes, Discrepancies, & Resolutions:     Did     not     recisive     COC     for     Sample WS     O816						
Sample ID     Bottle Count Bottle Type     Out of Temp space     Head- proke     Volume pH     Reagent     Added       Number     Initials     Time       Notes, Discrepancies, & Resolutions:     Did not     recent sec     COC     for     So mple     W5     O816       Empiled     With Auguri CHAPTION     Tot     recent sec     COC     for     So mple     W5     O816						
Sample ID     Bottle Count Bottle Type     Out of Temp space     Head- proke     PH     Reagent     Volume added     Reagent Lot Number     Initials     Time       Notes, Discrepancies, & Resolutions:     Did     Not     Vectore     COC     6r     Somple     W5     OS16       Empiled     Coc     Grade     State     State     State     State     State     State						

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# General Chemistry

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#### ALS Group USA, Corp. dba ALS Environmental

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GR222-00-002016-004 Rev. 0 16-Dec-16 Service Request: K1609302

Analytical	Report
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Client:	SGS Environmental Services, Inc.
Project:	Kenai Wells-July APT Event A
Sample Matrix:	Water
Analysis Method: Prep Method:	SM 10200 H Method

Service Request: K1609302 Date Collected: 08/11/16 Date Received: 08/12/16 Units: mg/m3

Basis: NA

**Chlorophyll A** 

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q
TPW-5	K1609302-001	ND U	1.6	0.6	1	08/17/16 18:07	8/17/16	
Method Blank	K1609302-MB1	ND U	0.80	0.30	1	08/17/16 18:07	8/17/16	
Method Blank	K1609302-MB2	ND U	0.80	0.30	1	08/17/16 18:07	8/17/16	

Chlorophyll A	2220	2160	103	2190	2160	102	88-113	1	20			
Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amoun	t % Rec	% Rec Limits	RPD	RPD Limit			
Lab Control SampleDuplicate Lab Control SampleK1609302-LCSK1609302-DLCS												
						Analysis	Lot:	510717				
Prep Method:	None					<b>Basis:</b>		NA				
Analysis Method:	SM 10200 I	H				Units:		mg/m3				
		Dup	General	Control Sa	ample Summary Parameters	Ĩ						
Sample Matrix:	water	D	ю / т і	<b>C</b> ( 10		Date Ext	racteu:	INA				
Somple Matrice	Weter	5-July Al I Lvent	<b>11</b>			Date Ent	maatad.	NIA				
Project:	Kenai Well	s-July APT Event	Δ			Date An	alvzed•	08/17/16	-			
Client:	SGS Enviro	nmental Services	Inc	QA/QC Rep	лт	Service F	Request:	K160930	2			
				OA/OC Repo	ort	USAL-I G-GR	222-00-0020	16-Dec-1	6			
			ALS dba	Group USA ALS Environ	, Corp. mental	LNG Facilities Groun Sampling and Testing Re			al y 2 1			

E-352


#### Laboratory Report of Analysis

To: SLR Alaska-Anchorage 2700 Gambell St Suite 200 Anchorage, AK 99503 (907)222-1112

Report Number: 1164707

Client Project: 105.00148.16001 Kenai Wells

Dear Jason Gray,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,	$\int \partial \partial \partial \partial$	Justin Nelson
SGS North America Inc.	Just The	2016.08.16
	SGS North America Inc. Environmental Services – Alaska Division Project Manager	09:21:52 -08'00'

Justin Nelson Project Manager Justin.Nelson@sgs.com Date

Print Date: 08/15/2016 4:27:49PM

SGS North America Inc.

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#### **Case Narrative**

SGS Client: SLR Alaska-Anchorage SGS Project: 1164707 Project Name/Site: 105.00148.16001 Kenai Wells Project Contact: Jason Gray

Refer to sample receipt form for information on sample condition.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 08/15/2016 4:27:51PM

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#### Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <<u>http://www.sgs.com/en/Terms-and-Conditions.aspx></u>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

Surrogate out of control limits. ndicates the analyte is found in a blank associated with the sample. Continuing Calibration Verification Closing Continuing Calibration Verification Control Limit The analyte concentration is the result of a dilution. Dilution Factor Detection Limit (i.e., maximum method detection limit) The analyte result is above the calibrated range. Indicates value that is greater than or equal to the DL Greater Than Instrument Blank Initial Calibration Verification The quantitation is an estimation. The analyte was positively identified, but the quantitation is a low estimation
ndicates the analyte is found in a blank associated with the sample. Continuing Calibration Verification Closing Continuing Calibration Verification Control Limit The analyte concentration is the result of a dilution. Dilution Factor Detection Limit (i.e., maximum method detection limit) The analyte result is above the calibrated range. Indicates value that is greater than or equal to the DL Greater Than Instrument Blank Initial Calibration Verification The quantitation is an estimation.
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The quantitation is an estimation.
The analyte was positively identified, but the quantitation is a low estimation
The analyte was positively identified, but the quantitation is a low estimation.
aboratory Control Spike (Duplicate)
imit of Detection (i.e., 1/2 of the LOQ)
imit of Quantitation (i.e., reporting or practical quantitation limit)
Less Than
A matrix effect was present.
/lethod Blank
Matrix Spike (Duplicate)
ndicates the analyte is not detected.
QC parameter out of acceptance range.
Rejected
Relative Percent Difference
ndicates the analyte was analyzed for but not detected.

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Note:



	:	Sample Summary	,	
Client Sample ID	Lab Sample ID	<u>Collected</u>	Received	<u>Matrix</u>
OW-2-0816	1164707001	08/12/2016	08/12/2016	Water (Surface, Eff., Ground)
OW-4-0816	1164707002	08/12/2016	08/12/2016	Water (Surface, Eff., Ground)
TPW-5-0816	1164707003	08/12/2016	08/12/2016	Water (Surface, Eff., Ground)

Method SM21 9222D Method Description Fecal Coliform (MF)

Print Date: 08/15/2016 4:27:52PM



#### **Detectable Results Summary**

Client Sample ID: **OW-2-0816** Lab Sample ID: 1164707001 **Microbiology Laboratory** 

Parameter Fecal Coliform

<u>Result</u> 4.9 <u>Units</u> col/100mL

Print Date: 08/15/2016 4:27:53PM

E-357

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518 t 907.562.2343 f 907.561.5301 www.us.sgs.com

SGS				Sa USAI	LNG Fa mpling a FG-GF	acilities Ground and Testing Re RZZZ-00-00201	Confidential Iwater Quality port - Event 2 I6-004 Rev. 0 16-Dec-16
Results of <b>OW-2-0816</b> Client Sample ID: <b>OW-2-0816</b> Client Project ID: <b>105.00148.16001 Ke</b> Lab Sample ID: 1164707001 Lab Project ID: 1164707	nai Wells	C R M S L	ollection D eceived Da latrix: Wate olids (%): ocation:	6 10:00 16:40 ff., Gro	) pund)		
Results by <b>Microbiology Laboratory</b> Parameter Fecal Coliform	<u>Result Qual</u> 4.9	<u>LOQ/CL</u> 1.64	<u>DL</u> 1.64	<u>Units</u> col/100ml	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 08/12/16 17:10
Batch Information Analytical Batch: BTF15043 Analytical Method: SM21 9222D Analyst: K.W Analytical Date/Time: 08/12/16 17:10 Container ID: 1164707001-A							
rint Date: 08/15/2016 4:27:54PM						J flaggin	g is activated
SGS North America Inc.	0 vvest Potter Dri 07.562.2343 <b>f</b> 90	ve Anchorage 7.561.5301 w	, AK 95518 ww.us.sgs.c	com		Month	

SGS				Sa USAL	LNG Fa mpling a FG-GF	acilities Ground and Testing Re RZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
Results of <b>OW-4-0816</b> Client Sample ID: <b>OW-4-0816</b> Client Project ID: <b>105.00148.16001 Ke</b> Lab Sample ID: 1164707002 Lab Project ID: 1164707	enai Wells	C R M S L	ollection D eceived Da latrix: Wate olids (%):	ate: 08/12/16 ate: 08/12/16 er (Surface, E	6 09:10 6 16:40 ff., Gro	) bund)	
Results by <b>Microbiology Laboratory</b> Parameter Fecal Coliform	<u>Result Qual</u> 1.64 U	<u>LOQ/CL</u> 1.64	<u>DL</u> 1.64	<u>Units</u> col/100mL	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 08/12/16 17:10
Batch Information Analytical Batch: BTF15043 Analytical Method: SM21 9222D Analyst: K.W Analytical Date/Time: 08/12/16 17:10 Container ID: 1164707002-A							
Print Date: 08/15/2016 4:27:54PM	10 West Pottor Dr		AK 05519			J flaggin	g is activated
SGS North America Inc.	907.562.2343 f 90	7.561.5301 w	ww.us.sgs.	com		Membe	or of SGS Group

SGS				Sa USAL	LNG Fa mpling a FG-GF	acilities Ground and Testing Re RZZZ-00-00201	Confidential lwater Quality port - Event 2 l6-004 Rev. 0 16-Dec-16
Results of <b>TPW-5-0816</b> Client Sample ID: <b>TPW-5-0816</b> Client Project ID: <b>105.00148.16001 Ke</b> Lab Sample ID: 1164707003 Lab Project ID: 1164707	nai Wells	C R M S L	ollection D eceived Da latrix: Wate olids (%): ocation:	) pund)			
Results by Microbiology Laboratory Parameter Fecal Coliform	<u>Result Qual</u> 1.64 U	<u>LOQ/CL</u> 1.64	<u>DL</u> 1.64	<u>Units</u> col/100ml	<u>DF</u> . 1	<u>Allowable</u> Limits	Date Analyzed 08/12/16 17:10
Batch Information Analytical Batch: BTF15043 Analytical Method: SM21 9222D Analyst: K.W Analytical Date/Time: 08/12/16 17:10 Container ID: 1164707003-A							
rint Date: 08/15/2016 4:27:54PM	0 West Potter Dri	ive Appherage	AV 05519			J flaggin	g is activated
SGS North America Inc.	07.562.2343 <b>f</b> 90	7.561.5301 w	WW.US.Sgs.	com		Month	

SGS			S US	Sampling and Testing Report - Event 2 AL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Method Blank				
Blank ID: MB for HBN Blank Lab ID: 1344672 QC for Samples: 1164707001, 116470700	1741514 [BTF/15043] 2 02, 1164707003	Ма	trix: Water (Sur	face, Eff., Ground)
	D	<u> </u>		
Parameter Fecal Coliform	<u>Results</u> 1.00U	LOQ/CL 1.00	<u>DL</u> 1.00	<u>Units</u> col/100mL
Batch Information Analytical Batch: BTI Analytical Method: S Instrument: Analyst: K.W Analytical Date/Time:	=15043 M21 9222D 8/12/2016 5:10:00PM			

Print Date: 08/15/2016 4:27:56PM

SGS North America Inc.

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~	SLR International	PHI Jason Grav		Kenai Wells - July APT Proj Event A	0: /C.E-N Jason Gray Jgra	QU LR International P.O	SAMPLE IDENTIFICATION	0W-2-08/6	011-4-0816	-0816									Kyle Johnson	I By: (2f		(By: (3)		HBy: (4)	otter Drive Anchorage, AK 9951 siness Drive Wilmington, NC 28.
SG	CLIENT:	CONTACT:		PROJECT NAME:	D REPORTS TO	INVOICE TO: SI	RESERVED for lab use	(ÚA	C)A	2A	UOI	290						Relinquisher		Relinquished		0 Relinquished		Relinquishee	4 200 W. P
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F083-Kit_Request_and_COC_Templates-Blank Revised 2013-03-24

AIF-JORT OF DEPARTURE ENA 08/12/16 11:2	29 097165	Confidential LNG Facilities Groundwater Quality 808 71125360 ping and Testing Report - Even Paush
FUGRO KYLE JOHNSON	SHIPPER'S ACCOUNT NUMBER	AIR WAYBILL (AIR CONSIGNMENT NOTE) ALLASS KALE
KENAI AK CONSIGNEE'S NAME, ADDRESS & PHONE SGS ATTN JUSTIN NELSON	5208081220 CONSIGNEE'S ACCOUNT NUMBER	It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT AS LISTED IN THE COMPANIES TARIFFS. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIERS' LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charge if required.
200 W POTTER DR ANCHORAGE AK 99518	9075622343	Received in Good Condition PlaceDate TO EXPEDITE MOVEMENT, SHIPMENT MAY BE DIVERTED TO MOTOR OR OTHER CARRIER AS PER TARIF RULE UNLESS SHIPPER GIVES OTHER INSTRUCTION HEREON
ISSUING CARRIER'S AGENT NAME, CITY & PHONE		ALSO NOTIFY NAME & ADDRESS
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Pieces Gross kg Commodity Chargeable Item No.	le Weight Rate/Charge	Total Nature and Quantity of Goods
1 7 PREPAID WEIGHT CHARGE COLLECT		\$38.59
\$38.59	OTHER C AMOUNT	HARGES AND DESCRIPTION DESCRIPTION
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TOTAL OTHER CHARGES DUE CARRIER \$0.00 TOTAL PREPAID \$41.00 ATION NUMBERS CHORAGE - (907) 243-3761 FAIRBANKS - (907) 450-725	COMPANES TARIERS, unless a higher value fo part of the consignment by air according to appli Air Transport Associatio	a particulars on the face hereof are correct, agrees to the CONDITIONS AS LISTED IN THE , accepts that carrier's liability is limited as stated in the companies tariffs and accepts such value r carriage is declared on the face hereof subject to an additional charge and that insofar as any contains restricted articles, such part is described by name and is in proper condition for carriage icable national governmental regulations, and for international shipments, the current International on's Restricted Articles Regulations.
Ar. (907) 655-4572         GALENA -(907) 656-1875           RAK. (907) 655-4572         KOTZEBUE - (907) 442-3021           RROW - (907) 852-5300         NOME - (907) 443-7595           THEL -(907) 543-3825         ST. MARYS - (907) 438-224           ADHORSE - (907) 659-9222         UNALAKLEET - (907) 624-31           inted at 11:42:00 on 8/12/2016 at ENA-FRT1 10.106.2.	Paid By Shipper Printed Name and Title	

**Consignee Copy** 

# Alert Expeditors Inc.

## #366894

Citywide Delivery • 440-3351 8421 Flamingo Drive • Anchorage, Alaska 99502

Collect 🗇	Prepay D Account D	Advance Charges
Job #	PO#	
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Review Criteria	Y/N (ye	es/no)		Exc	ceptions Note	ed below
				exemption perr	mitted if sampler	hand carries/delivers.
Were Custody Seals intact? Note # 8	location Y				2-B	
COC accompanied :	samples? Y					
Y **exemption perm	itted if chilled	& collect	ed <8r	hrs ago or chlling no	ot required (i.e.,	waste, oil)
		Coo	ler ID:		@	°C Therm ID:
		Coo	ler ID:		@	°C Therm ID:
Temperature blank compliant* (i.e., 0-6 °C a	after CF)?	Coo	ler ID:		@	°C Therm ID:
		Coo	ler ID:		@	°C Therm ID:
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*If >6°C, were samples collected <8 hou	ırs ago?	, Chilled	1			
If <0°C, were sample containers	ice free?	]				
If samples received <u>without</u> a temperature blank, the "cooler temperat be documented in lieu of the temperature blank & " <b>COOLER TEMP</b> " wi noted to the right. In cases where neither a temp blank nor cooler tem obtained, note "ambient" or "chilled".	ure" will ll be p can be					
Note: Identify containers received at non-compliant temperature . Us FS-0029 if more space is needed.	e form					
		Note:	Refer t	to form F-083 "Sam	nple Guide" for h	old times.
Were samples received within he	old time?					
Do samples match COC** (i.e.,sample IDs,dates/times co	ollected)? Y					
**Note: If times differ <1hr, record details & login	per COC.					
Were analyses requested unam	biguous?					
				***Exemption	permitted for me	etals (e.g,200.8/6020A).
Were proper containers (type/mass/volume/preservative*	**)used? Y	<i>,</i> ]	<u> </u>			
IF APPLICABLE						
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with	samples?	]				
Were all VOA vials free of headspace (i.e., bubbles	<mark>≤ 6mm)?</mark>					
Were all soil VOAs field extracted with Mer	OH+BFB?					
Note to Client: Any "no" answer above indicate	s <u>non-complia</u>	ance with	standa	ard procedures and	l may impact dat	a quality.
Addit	tional notes	s (if app	licabl	le):		



#### Laboratory Report of Analysis

To: SLR Alaska-Anchorage 2700 Gambell St Suite 200 Anchorage, AK 99503 (907)222-1112

Report Number: **1165399** 

Client Project: 105.00148.16001 KW Event 2

Dear Jason Gray,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Justin Nelson 2016.09.30

09:24:40 -08'00'

Sincerely, SGS North America Inc.

Just
SGS North America Inc.
Environmental Services - Alaska Division
Project Manager

Justin Nelson Project Manager Justin.Nelson@sgs.com Date

Print Date: 09/30/2016 9:15:14AM

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518 t 907.562.2343 f 907.561.5301 www.us.sgs.com



#### Case Narrative

#### SGS Client: SLR Alaska-Anchorage SGS Project: 1165399 Project Name/Site: 105.00148.16001 KW Event 2 Project Contact: Jason Gray

Refer to sample receipt form for information on sample condition.

#### TPW-1-0916 DUP (1165399016) BDUP

2540D - Total Suspended Solids - Sample duplicate RPD was outside of acceptance limits. The difference between sample and duplicate results is less than the LOQ.

#### TPW-1-0916 MS (1165399003) BMS

200.8LL - Metals MS recoveries for iron (38.5%) and zinc (151%) do not meet QC criteria. Post digestion spike was successful.

#### TPW-1-0916 MSD (1165399004) BMSD

200.8LL - Metals MSD recoveries for iron (-71.7%) and zinc (47.8%) do not meet QC criteria. Post digestion spike was successful.

#### 1165400001DUP (1351988) DUP

2540D - Total Suspended Solids - Sample duplicate RPD was outside of acceptance limits. Sample re-analyzed within hold time with valid QC. Results confirm sample is heterogeneous. Refer to LCS/LCSD RPD for batch precision.

#### 1165399002DUP (1352302) DUP

2540D - Total Suspended Solids - Sample duplicate RPD was outside of acceptance limits. The difference between sample and duplicate results is less than the LOQ.

#### LCSD for HBN 1743108 [STS/5201 (1351931) LCSD

2540D - Total Suspended Solids - LCS/LCSD RPD is within QC criteria after application of proper rounding rules.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 09/30/2016 9:15:15AM

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518 t 907.562.2343 f 907.561.5301 www.us.sgs.com



#### Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <<u>http://www.sgs.com/en/Terms-and-Conditions.aspx></u>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

ple.
estimation.
oist

Print Date: 09/30/2016 9:15:18AM

200 West Potter Drive, Anchorage, AK 99518 t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group

Note:

	Sa	mple Summary		
Client Sample ID	Lab Sample ID	Collected	Received	Matrix
TPW-2-0916	1165399001	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
TPW-1-0916	1165399002	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
TPW-1-0916 MS	1165399003	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
TPW-1-0916 MSD	1165399004	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
TPW-9-0916	1165399005	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
PQ-W1-0916	1165399006	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
TPW-5-0916	1165399007	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
TB-3-0916	1165399008	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
TB-4-0916	1165399009	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
TPW-2-0916	1165399010	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
TPW-1-0916	1165399011	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
TPW-1-0916 MS	1165399012	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
TPW-1-0916 MSD	1165399013	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
TPW-9-0916	1165399014	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
PQ-W1-0916	1165399015	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
TPW-1-0916 DUP	1165399016	09/12/2016	09/13/2016	Water (Surface, Eff., Ground)
Method	Method Descr	iption		
SM21 2320B	Alkalinity as C	aCO3 QC		
SM21 2340B	Dissolved Har	dness as CaCO3	ICP-MS-LowLv	
EPA 1631 E	Dissolved Low	Level Mercury E	PA 1631	
AK102	DRO/RRO Lov	w Volume Water		
AK103	DRO/RRO Lov	w Volume Water		
SM21 4500NO3-F	Flow Injection	Analysis		
AK101	Gasoline Rang	ge Organics (W)		
EPA 300.0	Ion Chromatog	graphic Analysis (	W)	
EPA 1631 E	Low Level Me	rcury EPA 1631		
200.8 Low Level	Metals in Wate	er by 200.8 ICP-M	IS LL	
200.8 Low Level	Metals in Wate	er by 200.8 ICP-M	IS LL DIS	
SM21 4500-H B	pH Analysis			

Print Date: 09/30/2016 9:15:19AM

SM21 2540C

SM21 2540D

SM21 2130B

SGS North America Inc.

Total Dissolved Solids SM18 2540C

**Turbidity Analysis** 

Total Suspended Solids SM20 2540D

SGS



Detectable	Results	Summary
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Client Sample ID: TPW-2-0916			
Lab Sample ID: 1165399001	Parameter	Result	Units
Metals by ICP/MS	Aluminum	1.89J	ug/L
	Arsenic	14.9	ug/L
	Barium	11.1	ug/L
	Boron	20.3	ug/L
	Calcium	17500	ug/L
	Cobalt	0.0280	ug/L
	Copper	0.210J	ug/L
	Iron	58.8	ug/L
	Magnesium	5550	ug/L
	Manganese	88.0	ug/L
	Molybdenum	0.378	ug/L
	Nickel	0.354J	ug/L
	Potassium	4320	ug/L
	Sodium	6100	ug/L
	Zinc	1.13J	ug/L
Metals Department	Mercury	0.636J	ng/L
Semivolatile Organic Fuels	Diesel Range Organics	0.228J	mg/L
Waters Department	Alkalinity	75.9	mg/L
	Chloride	13.6	mg/L
	Fluoride	0.145J	mg/L
	рН	8.20	pH units
	Sulfate	2.44	mg/L
	Total Dissolved Solids	140	mg/L
	Total Suspended Solids	0.700J	mg/L
	Turbidity	0.700	NTU

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#### **Detectable Results Summary**

Client Sample ID: TPW-1-0916			
Lab Sample ID: 1165399002	Parameter	Result	Units
Metals by ICP/MS	Aluminum	20.0	ug/L
-	Antimony	0.254	ug/L
	Arsenic	0.302J	ug/L
	Barium	1.26	ug/L
	Boron	31.8	ug/L
	Cadmium	0.284	ug/L
	Calcium	6950	ug/L
	Chromium	0.241J	ug/L
	Cobalt	0.177	ug/L
	Copper	6.57	ug/L
	Iron	6260	ug/L
	Lead	8.18	ug/L
	Magnesium	2780	ug/L
	Manganese	109	ug/L
	Molybdenum	0.498	ug/L
	Nickel	0.771	ug/L
	Potassium	7090	ug/L
	Sodium	9280	ug/L
	Zinc	775	ug/L
Metals Department	Mercury	0.648J	ng/L
Semivolatile Organic Fuels	Diesel Range Organics	0.234J	mg/L
Waters Department	Alkalinity	50.2	mg/L
	Chloride	4.71	mg/L
	Fluoride	0.134J	mg/L
	pH	8.50	pH units
	Sulfate	0.558	mg/L
	Total Dissolved Solids	64.0	mg/L
	Total Suspended Solids	9.60	mg/L
	Turbidity	18.0	NTU

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Client Sample ID: TPW-9-0916				
Lab Sample ID: 1165399005	Parameter	Result	<u>Units</u>	
Metals by ICP/MS	Aluminum	9.67	ug/L	
	Antimony	0.166	ug/L	
	Barium	0.931	ug/L	
	Boron	31.3	ug/L	
	Cadmium	0.212	ug/L	
	Calcium	6710	ug/L	
	Cobalt	0.118	ug/L	
	Copper	3.72	ug/L	
	Iron	3710	ug/L	
	Lead	6.57	ug/L	
	Magnesium	2690	ug/L	
	Manganese	92.0	ug/L	
	Molybdenum	0.449	ug/L	
	Nickel	0.561J	ug/L	
	Potassium	6950	ug/L	
	Sodium	9060	ug/L	
	Zinc	621	ug/L	
Metals Department	Mercury	0.669J	ng/L	
Semivolatile Organic Fuels	Diesel Range Organics	0.253J	mg/L	
Waters Department	Alkalinity	50.1	mg/L	
	Chloride	4.72	mg/L	
	Fluoride	0.129J	mg/L	
	рH	8.60	pH units	
	Sulfate	0.562	mg/L	
	Total Dissolved Solids	65.0	mg/L	
	Total Suspended Solids	19.2	mg/L	
	Turbidity	13.0	NTU	

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#### **Detectable Results Summary**

Client Sample ID: PQ-W1-0916			
Lab Sample ID: 1165399006	Parameter	Result	Units
Metals by ICP/MS	Aluminum	426	ug/L
-	Antimony	0.128	ug/L
	Arsenic	5.96	ug/L
	Barium	48.5	ug/L
	Boron	6.47	ug/L
	Cadmium	0.275	ug/L
	Calcium	18500	ug/L
	Chromium	1.93	ug/L
	Cobalt	0.649	ug/L
	Copper	24.7	ug/L
	Iron	30500	ug/L
	Lead	10.5	ug/L
	Magnesium	4960	ug/L
	Manganese	751	ug/L
	Molybdenum	0.299	ug/L
	Nickel	3.23	ug/L
	Potassium	2540	ug/L
	Silver	0.0676	ug/L
	Sodium	9010	ug/L
	Tin	0.328	ug/L
	Vanadium	1.23	ug/L
	Zinc	3190	ug/L
Metals Department	Mercury	1.53	ng/L
Semivolatile Organic Fuels	Diesel Range Organics	0.210J	mg/L
Volatile Fuels	Gasoline Range Organics	0.0359J	mg/L
Waters Department	Alkalinity	68.7	mg/L
	Chloride	17.6	mg/L
	Fluoride	0.0940J	mg/L
	рН	7.00	pH units
	Sulfate	1.11	mg/L
	Total Dissolved Solids	128	mg/L
	Total Suspended Solids	59.0	mg/L
	Turbidity	90.0	NTU

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	Detectable Results Summary		
Client Sample ID: TPW-2-0916			
Lab Sample ID: 1165399010	Parameter	Result	Units
Dissolved Metals	Mercury	0.577J	ng/L
Dissolved Metals by ICP/MS	Aluminum	1.88J	ug/L
	Arsenic	15.9	ug/L
	Barium	12.0	ug/L
	Boron	22.5	ug/L
	Calcium	18800	ug/L
	Cobalt	0.0316	ug/L
	Hardness as CaCO3	73.2	mg/L
	Iron	56.9	ug/L
	Magnesium	6400	ug/L
	Manganese	96.8	ug/L
	Molybdenum	0.424	ug/L
	Nickel	0.540J	ug/L
	Potassium	4740	ug/L
	Silicon	14900	ug/L
	Sodium	7010	ug/L
	Zinc	1.68J	ug/L
Client Sample ID: TPW-1-0916			
Lab Sample ID: 1165399011	Parameter	Posult	Unite
Dissolved Metals by ICB/MS		0.769.1	
Dissolved metals by ICF/MS	Antimony	0.0209.1	ug/L
	Barium	0.424	ug/L
	Boron	29.9	ug/L
	Calcium	6340	ug/L
	Cobalt	0.0269	ug/l
	Hardness as CaCO3	26.8	∞g/ ma/l
	Iron	106	ua/L
	Lead	0.0490J	ug/L
	Magnesium	2660	ug/L
	Manganese	61.1	ug/L
	Molvbdenum	0.702	ug/L
	Nickel	0.193J	ug/L
	Potassium	6440	ua/L
	Silicon	1100	ug/L
	Sodium	8990	ug/L
	Zinc	38.3	ug/L
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	Detectable Results Summary			
Client Sample ID: TPW-9-0916				
Lab Sample ID: 1165399014	Parameter	Result	Units	
Dissolved Metals by ICP/MS	Aluminum	0.704J	ug/L	
2	Antimony	0.0294J	ug/L	
	Barium	0.366	ug/L	
	Boron	30.0	ug/L	
	Calcium	6120	ug/L	
	Cobalt	0.0265	ug/L	
	Hardness as CaCO3	25.7	mg/L	
	Iron	93.6	ug/L	
	Lead	0.0385J	ug/L	
	Magnesium	2530	ug/L	
	Manganese	59.8	ug/L	
	Molybdenum	0.656	ug/L	
	Nickel	0.179J	ug/L	
	Potassium	6300	ug/L	
	Silicon	1020	ug/L	
	Sodium	8590	ug/L	
	Zinc	37.0	ug/L	
Client Sample ID: PQ-W1-0916				
Lab Sample ID: 1165399015	Parameter	Result	Units	
Dissolved Metals by ICP/MS	Aluminum	1.76J	ua/L	
	Arsenic	1.04	ug/L	
	Barium	43.1	ua/L	
	Boron	6.49	ua/L	
	Calcium	18400	ug/L	
	Cobalt	0.0454	ug/L	
	Copper	0.267J	ua/L	
	Hardness as CaCO3	64.9	mg/L	
	Iron	10600	ug/L	
	Lead	0.0328J	ug/L	
	Magnesium	4630	ug/L	
	Manganese	633	ug/L	
	Molybdenum	0.189	ug/L	
	Nickel	0.438J	ua/L	
	Potassium	2500	ug/L	
	Silicon	10600	ug/L	
	Sodium	8740	ug/L	
	Zinc	8.55	ug/L	
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### Results of TPW-2-0916

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Client Sample ID: **TPW-2-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165399001 Lab Project ID: 1165399

Collection Date: 09/12/16 10:05 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Metals by ICP/MS

					1	Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	1.89 J	2.00	0.620	ug/L	2.5		09/22/16 10:10
Antimony	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:10
Arsenic	14.9	0.800	0.200	ug/L	2.5		09/22/16 10:10
Barium	11.1	0.250	0.0400	ug/L	2.5		09/22/16 10:10
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 10:10
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:10
Boron	20.3	5.00	1.50	ug/L	2.5		09/22/16 10:10
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:10
Calcium	17500	50.0	15.0	ug/L	2.5		09/22/16 10:10
Chromium	0.250 U	0.500	0.150	ug/L	2.5		09/22/16 10:10
Cobalt	0.0280	0.0200	0.0100	ug/L	2.5		09/22/16 10:10
Copper	0.210 J	0.500	0.200	ug/L	2.5		09/22/16 10:10
Iron	58.8	20.0	6.20	ug/L	2.5		09/22/16 10:10
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		09/22/16 10:10
Magnesium	5550	20.0	6.20	ug/L	2.5		09/22/16 10:10
Manganese	88.0	0.100	0.0310	ug/L	2.5		09/22/16 10:10
Molybdenum	0.378	0.0500	0.0150	ug/L	2.5		09/22/16 10:10
Nickel	0.354 J	0.620	0.0620	ug/L	2.5		09/22/16 10:10
Potassium	4320	50.0	15.0	ug/L	2.5		09/22/16 10:10
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:10
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:10
Sodium	6100	100	31.0	ug/L	2.5		09/22/16 10:10
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:10
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 10:10
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:10
Zinc	1.13 J	3.10	0.400	ug/L	2.5		09/22/16 10:10

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 10:10 Container ID: 1165399001-J Prep Batch: MXX30199 Prep Method: E200.2 Prep Date/Time: 09/16/16 07:56 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

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Results of TPW-2-0916							
Client Sample ID: <b>TPW-2-0916</b> Client Project ID: <b>105.00148.16001 KW Event 2</b> Lab Sample ID: 1165399001 Lab Project ID: 1165399		Collection Date: 09/12/16 10:05 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by Metals Department							
<u>Parameter</u> Mercury	<u>Result Qual</u> 0.636 J	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/16/16 15:07
Batch Information							
Analytical Batch: MCV5738 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 09/16/16 15:07 Container ID: 1165399001-D		F F F	Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30216 I: METHOD me: 09/15/1 /t./Vol.: 50 n Vol: 50 mL	16 13:00 mL		

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Results of <b>TPW-2-0916</b> Client Sample ID: <b>TPW-2-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399001 Lab Project ID: 1165399	V Event 2	Collection Date: 09/12/16 10:05 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by Semivolatile Organic Fuels	6		_				
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.228 J	<u>LOQ/CL</u> 0.577	<u>DL</u> 0.173	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/23/16 00:55
Surrogates 5a Androstane (surr)	93.9	50-150		%	1		09/23/16 00:55
Batch Information Analytical Batch: XFC12872 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 09/23/16 00:55 Container ID: 1165399001-H			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36361 : SW3520C me: 09/22/ /t./Vol.: 260 Vol: 1 mL	C 16 08:14 ) mL		
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.240 U	<u>LOQ/CL</u> 0.481	<u>DL</u> 0.144	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 00:55
Surrogates							
n-Triacontane-d62 (surr)	86.2	50-150		%	1		09/23/16 00:55
Batch Information Analytical Batch: XFC12872 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 09/23/16 00:55 Container ID: 1165399001-H		Prep Batch: XXX36361 Prep Method: SW3520C Prep Date/Time: 09/22/16 08:14 Prep Initial Wt./Vol.: 260 mL Prep Extract Vol: 1 mL					
Print Date: 09/30/2016 9:15:22AM						J flaggin	g is activated

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Results of <b>TPW-2-0916</b> Client Sample ID: <b>TPW-2-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165399001 Lab Project ID: 1165399	W Event 2	Collection Date: 09/12/16 10:05 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by Volatile Fuels									
Parameter Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/20/16 02:32		
<b>urrogates</b> 4-Bromofluorobenzene (surr)	89.2	50-150		%	1		09/20/16 02:32		
Analytical Batch: VFC13305 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/20/16 02:32 Container ID: 1165399001-E		F F F	Prep Batch: \ Prep Method: Prep Date/Tin Prep Initial Wi Prep Extract \	/XX29595 SW5030B ne: 09/19/1 t./Vol.: 5 m /ol: 5 mL	8 16 06:00 IL				

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Results of TPW-2-0916							
Client Sample ID: <b>TPW-2-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399001 Lab Project ID: 1165399	V Event 2	Collection Date: 09/12/16 10:05 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Chloride	13.6	0.200	0.0620	mg/L	1		09/17/16 08:22
Fluoride	0.145 J	0.200	0.0620	mg/L	1		09/17/16 08:22
Sulfate	2.44	0.200	0.0620	mg/L	1		09/17/16 08:22
Batch Information							
Analytical Batch: WIC5565 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/17/16 08:22 Container ID: 1165399001-B		F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11624 METHOD ne: 09/16/1 (t./Vol.: 10 I Vol: 10 mL	16 13:52 mL		
Parameter Turbidity	<u>Result Qual</u> 0.700	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 09/13/16 17:00
Analytical Batch: WAT10734 Analytical Method: SM21 2130B Analyst: KBE Analytical Date/Time: 09/13/16 17:00 Container ID: 1165399001-A							
Parameter Alkalinity	<u>Result Qual</u> 75.9	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/14/16 13:50
Batch Information Analytical Batch: WTI4511 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/14/16 13:50 Container ID: 1165399001-A							
<u>Parameter</u> Total Dissolved Solids	<u>Result Qual</u> 140	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 09/14/16 16:00
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Results of TPW-2-0916								
Client Sample ID: <b>TPW-2-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399001 Lab Project ID: 1165399	V Event 2	Collection Date: 09/12/16 10:05 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Waters Department								
Batch Information								
Analytical Batch: STS5202 Analytical Method: SM21 2540C Analyst: LLP Analytical Date/Time: 09/14/16 16:00 Container ID: 1165399001-A							·	
Parameter Total Suspended Solids	<u>Result Qual</u> 0.700 J	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/14/16 11:12	
Analytical Batch: STS5201 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/14/16 11:12 Container ID: 1165399001-C								
Parameter pH	<u>Result Qual</u> 8.20	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/14/16 13:50	
Batch Information								
Analytical Batch: WTI4510 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/14/16 13:50 Container ID: 1165399001-A								
<u>Parameter</u> Nitrate-N Nitrite-N	<u>Result Qual</u> 0.0500 U 0.0500 U	<u>LOQ/CL</u> 0.100 0.100	<u>DL</u> 0.0300 0.0300	<u>Units</u> mg/L mg/L	<u>DF</u> 2 2	<u>Allowable</u> Limits	Date Analyzed 09/13/16 16:51 09/13/16 16:51	
Batch Information Analytical Batch: WFI2502 Analytical Method: SM21 4500NO3-F Analyst: NEG Analytical Date/Time: 09/13/16 16:51 Container ID: 1165399001-B								
Print Date: 09/30/2016 9:15:22AM						Iflaggin	n is activated	
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#### Results of TPW-1-0916

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Client Sample ID: **TPW-1-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165399002 Lab Project ID: 1165399 Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	20.0	2.00	0.620	ug/L	2.5		09/22/16 10:13
Antimony	0.254	0.0500	0.0150	ug/L	2.5		09/22/16 10:13
Arsenic	0.302 J	0.800	0.200	ug/L	2.5		09/22/16 10:13
Barium	1.26	0.250	0.0400	ug/L	2.5		09/22/16 10:13
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 10:13
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:13
Boron	31.8	5.00	1.50	ug/L	2.5		09/22/16 10:13
Cadmium	0.284	0.0500	0.0150	ug/L	2.5		09/22/16 10:13
Calcium	6950	50.0	15.0	ug/L	2.5		09/22/16 10:13
Chromium	0.241 J	0.500	0.150	ug/L	2.5		09/22/16 10:13
Cobalt	0.177	0.0200	0.0100	ug/L	2.5		09/22/16 10:13
Copper	6.57	0.500	0.200	ug/L	2.5		09/22/16 10:13
Iron	6260	200	62.0	ug/L	25		09/22/16 11:17
Lead	8.18	0.100	0.0310	ug/L	2.5		09/22/16 10:13
Magnesium	2780	20.0	6.20	ug/L	2.5		09/22/16 10:13
Manganese	109	0.100	0.0310	ug/L	2.5		09/22/16 10:13
Molybdenum	0.498	0.0500	0.0150	ug/L	2.5		09/22/16 10:13
Nickel	0.771	0.620	0.0620	ug/L	2.5		09/22/16 10:13
Potassium	7090	50.0	15.0	ug/L	2.5		09/22/16 10:13
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:13
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:13
Sodium	9280	100	31.0	ug/L	2.5		09/22/16 10:13
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:13
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 10:13
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:13
Zinc	775	31.0	4.00	ug/L	25		09/22/16 11:17

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 10:13 Container ID: 1165399002-K Prep Batch: MXX30199 Prep Method: E200.2 Prep Date/Time: 09/16/16 07:56 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/30/2016 9:15:22AM

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Results of TPW-1-0916								
Client Sample ID: <b>TPW-1-0916</b> Client Project ID: <b>105.00148.16001 KW Event 2</b> Lab Sample ID: 1165399002 Lab Project ID: 1165399 Results by <b>Metals Department</b>		C R M S L	ollection Da eceived Da latrix: Wate olids (%): ocation:	und)				
Parameter Mercury	<u>Result Qual</u> 0.648 J	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 09/16/16 15:11	
Batch Information								
Analytical Batch: MCV5738 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 09/16/16 15:11 Container ID: 1165399002-E			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30216 I: METHOD me: 09/15/ [,] Vt./Vol.: 50 Vol: 50 mL	16 13:00 mL			

Print Date: 09/30/2016 9:15:22AM

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Results of <b>TPW-1-0916</b> Client Sample ID: <b>TPW-1-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165399002 Lab Project ID: 1165399	W Event 2	C R M S L	Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Grou Solids (%): Location:				
Results by Semivolatile Organic Fuel	s		_				
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.234 J	<u>LOQ/CL</u> 0.577	<u>DL</u> 0.173	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/23/16 01:05
Surrogates 5a Androstane (surr)	92.4	50-150		%	1		09/23/16 01:05
Batch Information Analytical Batch: XFC12872 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 09/23/16 01:05 Container ID: 1165399002-I			Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	XXX36361 : SW3520C me: 09/22/1 /t./Vol.: 260 Vol: 1 mL	; 6 08:14 mL		
Parameter Residual Range Organics	<u>Result Qual</u> 0.240 U	<u>LOQ/CL</u> 0.481	<u>DL</u> 0.144	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 01:05
Surrogates							
n-Triacontane-d62 (surr)	82.8	50-150		%	1		09/23/16 01:05
Batch Information							
Analytical Batch: XFC12872 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 09/23/16 01:05 Container ID: 1165399002-I		Prep Batch: XXX36361 Prep Method: SW3520C Prep Date/Time: 09/22/16 08:14 Prep Initial Wt./Vol.: 260 mL Prep Extract Vol: 1 mL					
Print Date: 09/30/2016 9:15:22AM						J flaggin	g is activated

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Results of <b>TPW-1-0916</b> Client Sample ID: <b>TPW-1-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399002 Lab Project ID: 1165399	W Event 2	Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by Volatile Fuels			_						
Parameter Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/20/16 02:50		
surrogates 4-Bromofluorobenzene (surr)	83.5	50-150		%	1		09/20/16 02:50		
Batch Information Analytical Batch: VFC13305 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/20/16 02:50 Container ID: 1165399002-F		F	Prep Batch: N Prep Method: Prep Date/Tin Prep Initial W Prep Extract N	VXX29595 SW5030E ne: 09/19/ [,] t./Vol.: 5 m Vol: 5 mL	3 16 06:00 1L				
Print Date: 09/30/2016 9:15:22AM						J flaggin	g is activated		

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Results of TPW-1-0916								
Client Sample ID: <b>TPW-1-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399002 Lab Project ID: 1165399	W Event 2	Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Waters Department			_					
<u>Parameter</u> Chloride Fluoride Sulfate	<u>Result Qual</u> 4.71 0.134 J 0.558	LOQ/CL 0.200 0.200 0.200	<u>DL</u> 0.0620 0.0620 0.0620	<u>Units</u> mg/L mg/L mg/L	<u>DF</u> 1 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/17/16 07:15 09/17/16 07:15 09/17/16 07:15	
Batch Information Analytical Batch: WIC5565 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/17/16 07:15 Container ID: 1165399002-B			Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	WXX11624 : METHOD me: 09/16/ [,] /t./Vol.: 10 Vol: 10 mL	16 13:52 mL			
Parameter Turbidity	<u>Result Qual</u> 18.0	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 09/13/16 17:00	
Analytical Batch: WAT10734 Analytical Method: SM21 2130B Analyst: KBE Analytical Date/Time: 09/13/16 17:00 Container ID: 1165399002-A								
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 50.2	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 09/14/16 13:57	
Batch Information Analytical Batch: WTI4511 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/14/16 13:57 Container ID: 1165399002-A								
Parameter Total Dissolved Solids	<u>Result Qual</u> 64.0	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/15/16 13:38	
Print Date: 09/30/2016 9:15:22AM	00 West Potter Dr	ive Anchorage	e, AK 95518	om		J flaggin	g is activated	
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Results of TPW-1-0916								
Client Sample ID: <b>TPW-1-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399002 Lab Project ID: 1165399	W Event 2	Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Waters Department			]					
Batch Information								
Analytical Batch: STS5208 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/15/16 13:38 Container ID: 1165399002-A								
<u>Parameter</u> Total Suspended Solids	<u>Result Qual</u> 9.60	<u>LOQ/CL</u> 4.00	<u>DL</u> 1.24	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/14/16 11:12	
Analytical Batch: STS5201 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/14/16 11:12 Container ID: 1165399002-D								
<u>Parameter</u> pH	Result Qual 8.50	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/14/16 13:57	
Batch Information Analytical Batch: WTI4510 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/14/16 13:57 Container ID: 1165399002-A								
<u>Parameter</u> Nitrate-N Nitrite-N	<u>Result Qual</u> 0.0500 U 0.0500 U	LOQ/CL 0.100 0.100	<u>DL</u> 0.0300 0.0300	<u>Units</u> mg/L mg/L	<u>DF</u> 2 2	<u>Allowable</u> Limits	Date Analyzed 09/13/16 16:53 09/13/16 16:53	
Batch Information Analytical Batch: WFI2502 Analytical Method: SM21 4500NO3-F Analyst: NEG Analytical Date/Time: 09/13/16 16:53 Container ID: 1165399002-B								
Print Date: 09/30/2016 9:15:22AM						J flaggin	g is activated	
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#### Results of TPW-9-0916

Client Sample ID: **TPW-9-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165399005 Lab Project ID: 1165399 Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	9.67	2.00	0.620	ug/L	2.5		09/22/16 10:24
Antimony	0.166	0.0500	0.0150	ug/L	2.5		09/22/16 10:24
Arsenic	0.400 U	0.800	0.200	ug/L	2.5		09/22/16 10:24
Barium	0.931	0.250	0.0400	ug/L	2.5		09/22/16 10:24
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 10:24
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:24
Boron	31.3	5.00	1.50	ug/L	2.5		09/22/16 10:24
Cadmium	0.212	0.0500	0.0150	ug/L	2.5		09/22/16 10:24
Calcium	6710	50.0	15.0	ug/L	2.5		09/22/16 10:24
Chromium	0.250 U	0.500	0.150	ug/L	2.5		09/22/16 10:24
Cobalt	0.118	0.0200	0.0100	ug/L	2.5		09/22/16 10:24
Copper	3.72	0.500	0.200	ug/L	2.5		09/22/16 10:24
Iron	3710	20.0	6.20	ug/L	2.5		09/22/16 10:24
Lead	6.57	0.100	0.0310	ug/L	2.5		09/22/16 10:24
Magnesium	2690	20.0	6.20	ug/L	2.5		09/22/16 10:24
Manganese	92.0	0.100	0.0310	ug/L	2.5		09/22/16 10:24
Molybdenum	0.449	0.0500	0.0150	ug/L	2.5		09/22/16 10:24
Nickel	0.561 J	0.620	0.0620	ug/L	2.5		09/22/16 10:24
Potassium	6950	50.0	15.0	ug/L	2.5		09/22/16 10:24
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:24
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:24
Sodium	9060	100	31.0	ug/L	2.5		09/22/16 10:24
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:24
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 10:24
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:24
Zinc	621	12.4	1.60	ug/L	10		09/22/16 10:59

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 10:24 Container ID: 1165399005-J Prep Batch: MXX30199 Prep Method: E200.2 Prep Date/Time: 09/16/16 07:56 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/30/2016 9:15:22AM

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Results of TPW-9-0916								
Client Sample ID: <b>TPW-9-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399005 Lab Project ID: 1165399	V Event 2	Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Metals Department			_					
<u>Parameter</u> Mercury	<u>Result Qual</u> 0.669 J	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/16/16 15:33	
Batch Information								
Analytical Batch: MCV5738 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 09/16/16 15:33 Container ID: 1165399005-D			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30216 I: METHOD me: 09/15/ [,] /t./Vol.: 50 Vol: 50 mL	16 13:00 mL			

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Results of <b>TPW-9-0916</b> Client Sample ID: <b>TPW-9-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399005 Lab Project ID: 1165399	V Event 2	Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%):						
Results by Semivolatile Organic Fuel	S	L						
Parameter Diesel Range Organics	<u>Result Qual</u> 0.253 J	<u>LOQ/CL</u> 0.588	<u>DL</u> 0.176	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/23/16 01:57	
Surrogates 5a Androstane (surr)	87.5	50-150		%	1		09/23/16 01:57	
Batch Information Analytical Batch: XFC12872 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 09/23/16 01:57 Container ID: 1165399005-H			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36361 : SW35200 me: 09/22/ /t./Vol.: 255 Vol: 1 mL	C 16 08:14 5 mL			
Parameter Residual Range Organics	<u>Result Qual</u> 0.245 U	<u>LOQ/CL</u> 0.490	<u>DL</u> 0.147	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 01:57	
Surrogates				Ū				
n-Triacontane-d62 (surr)	82.1	50-150		%	1		09/23/16 01:57	
Batch Information								
Analytical Batch: XFC12872 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 09/23/16 01:57 Container ID: 1165399005-H			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36361 : SW35200 me: 09/22/ /t./Vol.: 255 Vol: 1 mL	C 16 08:14 5 mL			
Print Date: 09/30/2016 9:15:22AM						J flaggin	g is activated	

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Results of <b>TPW-9-0916</b> Client Sample ID: <b>TPW-9-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399005 Lab Project ID: 1165399	V Event 2	C R M S					
Results by Volatile Fuels Parameter Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/20/16 03:47
<b>urrogates</b> 4-Bromofluorobenzene (surr)	84.8	50-150		%	1		09/20/16 03:47
Satch InformationAnalytical Batch: VFC13305Analytical Method: AK101Analyst: STAnalytical Date/Time: 09/20/16 03:47Container ID: 1165399005-E		F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	VXX29595 SW5030E ne: 09/19/ [,] 't./Vol.: 5 m Vol: 5 mL	8 16 06:00 L		
rint Date: 09/30/2016 9:15:22AM						J flaqqin	g is activated

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Results of TPW-9-0916							
Client Sample ID: <b>TPW-9-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399005 Lab Project ID: 1165399	V Event 2	C R M Si Lo	und)				
						Allowable	
Parameter_	Result Qual	LOQ/CL	DL	Units	DF	Limits	Date Analyzed
Chloride	4.72	0.200	0.0620	mg/L	1		09/17/16 08:44
Fluoride	0.129 J	0.200	0.0620	mg/L	1		09/17/16 08:44
Sulfate	0.562	0.200	0.0620	mg/L	1		09/17/16 08:44
Batch Information							
Analytical Batch: WIC5565 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/17/16 08:44 Container ID: 1165399005-B		F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11624 : METHOD me: 09/16/1 /t./Vol.: 10 n Vol: 10 mL	16 13:52 mL		
<u>Parameter</u> Turbidity	<u>Result Qual</u> 13.0	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/13/16 17:00
Batch Information Analytical Batch: WAT10734 Analytical Method: SM21 2130B Analyst: KBE Analytical Date/Time: 09/13/16 17:00 Container ID: 1165399005-A							
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 50.1	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/14/16 14:15
Batch Information Analytical Batch: WTI4511 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/14/16 14:15 Container ID: 1165399005-A							
<u>Parameter</u> Total Dissolved Solids	<u>Result Qual</u> 65.0	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/15/16 13:38
Print Date: 09/30/2016 9:15:22AM	0 West Potter Dri	ive Anchorage	, AK 95518			J flaggin	g is activated
ty	07.502.2343 <b>†</b> 90	01.53U1 W	ww.us.sgs.co	UIII		Mombo	or of SGS Group

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- Results of TPW-9-0916								
Client Sample ID: <b>TPW-9-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399005 Lab Project ID: 1165399	W Event 2	Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Waters Department								
Batch Information								
Analytical Batch: STS5208 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/15/16 13:38 Container ID: 1165399005-A								
<u>Parameter</u> Total Suspended Solids	<u>Result Qual</u> 19.2	<u>LOQ/CL</u> 2.08	<u>DL</u> 0.646	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/14/16 11:12	
Analytical Batch: STS5201 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/14/16 11:12 Container ID: 1165399005-C								
<u>Parameter</u> pH	Result Qual 8.60	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/14/16 14:15	
Batch Information Analytical Batch: WTI4510 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/14/16 14:15 Container ID: 1165399005-A								
<u>Parameter</u> Nitrate-N Nitrite-N	<u>Result Qual</u> 0.0500 U 0.0500 U	LOQ/CL 0.100 0.100	<u>DL</u> 0.0300 0.0300	<u>Units</u> mg/L mg/L	<u>DF</u> 2 2	<u>Allowable</u> Limits	Date Analyzed 09/13/16 16:58 09/13/16 16:58	
Batch Information Analytical Batch: WFI2502 Analytical Method: SM21 4500NO3-F Analyst: NEG Analytical Date/Time: 09/13/16 16:58 Container ID: 1165399005-B								
Print Date: 09/30/2016 9:15:22AM						J flaggin	g is activated	
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# Results of **PQ-W1-0916**

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Client Sample ID: **PQ-W1-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165399006 Lab Project ID: 1165399

Collection Date: 09/12/16 15:10 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	426	2.00	0.620	ug/L	2.5		09/22/16 10:36
Antimony	0.128	0.0500	0.0150	ug/L	2.5		09/22/16 10:36
Arsenic	5.96	0.800	0.200	ug/L	2.5		09/22/16 10:36
Barium	48.5	0.250	0.0400	ug/L	2.5		09/22/16 10:36
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 10:36
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:36
Boron	6.47	5.00	1.50	ug/L	2.5		09/22/16 10:36
Cadmium	0.275	0.0500	0.0150	ug/L	2.5		09/22/16 10:36
Calcium	18500	50.0	15.0	ug/L	2.5		09/22/16 10:36
Chromium	1.93	0.500	0.150	ug/L	2.5		09/22/16 10:36
Cobalt	0.649	0.0200	0.0100	ug/L	2.5		09/22/16 10:36
Copper	24.7	0.500	0.200	ug/L	2.5		09/22/16 10:36
Iron	30500	80.0	24.8	ug/L	10		09/22/16 11:03
Lead	10.5	0.100	0.0310	ug/L	2.5		09/22/16 10:36
Magnesium	4960	20.0	6.20	ug/L	2.5		09/22/16 10:36
Manganese	751	0.100	0.0310	ug/L	2.5		09/22/16 10:36
Molybdenum	0.299	0.0500	0.0150	ug/L	2.5		09/22/16 10:36
Nickel	3.23	0.620	0.0620	ug/L	2.5		09/22/16 10:36
Potassium	2540	50.0	15.0	ug/L	2.5		09/22/16 10:36
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:36
Silver	0.0676	0.0200	0.00620	ug/L	2.5		09/22/16 10:36
Sodium	9010	100	31.0	ug/L	2.5		09/22/16 10:36
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:36
Tin	0.328	0.200	0.0620	ug/L	2.5		09/22/16 10:36
Vanadium	1.23	1.00	0.310	ug/L	2.5		09/22/16 10:36
Zinc	3190	31.0	4.00	ug/L	25		09/22/16 15:00

## **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 10:36 Container ID: 1165399006-J Prep Batch: MXX30199 Prep Method: E200.2 Prep Date/Time: 09/16/16 07:56 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/30/2016 9:15:22AM

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Results of PQ-W1-0916								
Client Sample ID: <b>PQ-W1-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399006 Lab Project ID: 1165399	V Event 2	Collection Date: 09/12/16 15:10 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Metals Department								
Parameter Mercury	<u>Result Qual</u> 1.53	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 09/16/16 15:38	
Batch Information								
Analytical Batch: MCV5738 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 09/16/16 15:38 Container ID: 1165399006-D			Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	MXX30216 : METHOD me: 09/15/ [,] /t./Vol.: 50 Vol: 50 mL	16 13:00 mL			

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Results of <b>PQ-W1-0916</b> Client Sample ID: <b>PQ-W1-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399006 Lab Project ID: 1165399	V Event 2	C F M S L	Collection Da Received Da Matrix: Wate Solids (%): ocation:	ate: 09/12/ ite: 09/13/ [,] r (Surface,	16 15:10 16 13:13 Eff., Gro	und)	
Results by Semivolatile Organic Fuel	5						
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.210 J	<u>LOQ/CL</u> 0.556	<u>DL</u> 0.167	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/23/16 02:07
Surrogates 5a Androstane (surr)	84.3	50-150		%	1		09/23/16 02:07
Batch Information Analytical Batch: XFC12872 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 09/23/16 02:07 Container ID: 1165399006-H			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36361 : SW3520C me: 09/22/1 /t./Vol.: 270 Vol: 1 mL	; 6 08:14 mL		
Parameter Residual Range Organics	<u>Result Qual</u> 0.232 U	<u>LOQ/CL</u> 0.463	<u>DL</u> 0.139	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 02:07
Surrogates							
n-Triacontane-d62 (surr)	79.4	50-150		%	1		09/23/16 02:07
Batch Information							
Analytical Batch: XFC12872 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 09/23/16 02:07 Container ID: 1165399006-H			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36361 : SW3520C me: 09/22/1 /t./Vol.: 270 Vol: 1 mL	; 6 08:14 mL		
Print Date: 09/30/2016 9:15:22AM						J flaggin	g is activated

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Results of <b>PQ-W1-0916</b> Client Sample ID: <b>PQ-W1-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399006 Lab Project ID: 1165399	W Event 2	Collection Date: 09/12/16 15:10 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by Volatile Fuels			_			Allowable			
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0359 J	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	Limits	Date Analyzed 09/20/16 04:06		
urrogates 4-Bromofluorobenzene (surr)	85.2	50-150		%	1		09/20/16 04:06		
Batch Information									
Analytical Batch: VFC13305 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/20/16 04:06			Prep Batch: N Prep Method: Prep Date/Tin Prep Initial W	/XX29595 SW5030E ne: 09/19/ t./Vol.: 5 m	3 16 06:00 1L				
Print Date: 09/30/2016 9:15:22AM						J flaggin	g is activated		

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Results of PQ-W1-0916									
Client Sample ID: <b>PQ-W1-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399006 Lab Project ID: 1165399	W Event 2	Collection Date: 09/12/16 15:10 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by Waters Department									
Parameter Chloride Fluoride Sulfate	<u>Result Qual</u> 17.6 0.0940 J 1.11	LOQ/CL 0.200 0.200 0.200	<u>DL</u> 0.0620 0.0620 0.0620	<u>Units</u> mg/L mg/L mg/L	<u>DF</u> 1 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/17/16 09:06 09/17/16 09:06 09/17/16 09:06		
Batch Information Analytical Batch: WIC5565 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/17/16 09:06 Container ID: 1165399006-B			Prep Batch: Prep Method Prep Date/Tir Prep Initial W Prep Extract	WXX11624 : METHOD me: 09/16/ [,] (t./Vol.: 10 Vol: 10 mL	16 13:52 mL				
Parameter Turbidity	<u>Result Qual</u> 90.0	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/13/16 17:00		
Batch Information Analytical Batch: WAT10734 Analytical Method: SM21 2130B Analyst: KBE Analytical Date/Time: 09/13/16 17:00 Container ID: 1165399006-A									
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 68.7	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/14/16 14:23		
Batch Information Analytical Batch: WTI4511 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/14/16 14:23 Container ID: 1165399006-A									
Parameter Total Dissolved Solids	Result Qual 128	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/15/16 13:38		
Print Date: 09/30/2016 9:15:22AM	00 West Potter Dr	ive Anchorage	e, AK 95518			J flaggin	g is activated		
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Results of PQ-W1-0916									
Client Sample ID: <b>PQ-W1-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399006 Lab Project ID: 1165399	V Event 2	Collection Date: 09/12/16 15:10 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by Waters Department			]						
Batch Information									
Analytical Batch: STS5208 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/15/16 13:38 Container ID: 1165399006-A									
Parameter Total Suspended Solids	<u>Result Qual</u> 59.0	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/16/16 09:40		
Analytical Batch: STS5210 Analytical Method: SM21 2540D Analyst: KBE Analytical Date/Time: 09/16/16 09:40 Container ID: 1165399006-C									
<u>Parameter</u> pH	Result Qual 7.00	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/14/16 14:23		
Batch Information Analytical Batch: WTI4510 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/14/16 14:23 Container ID: 1165399006-A									
<u>Parameter</u> Nitrate-N Nitrite-N	<u>Result Qual</u> 0.0500 U 0.0500 U	LOQ/CL 0.100 0.100	<u>DL</u> 0.0300 0.0300	<u>Units</u> mg/L mg/L	<u>DF</u> 2 2	Allowable Limits	Date Analyzed 09/13/16 17:00 09/13/16 17:00		
Batch Information Analytical Batch: WFI2502 Analytical Method: SM21 4500NO3-F Analyst: NEG Analytical Date/Time: 09/13/16 17:00 Container ID: 1165399006-B									
Print Date: 09/30/2016 9:15:22AM						J flaggin	g is activated		
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Results of TPW-5-0916							
Client Sample ID: <b>TPW-5-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165399007 Lab Project ID: 1165399	W Event 2	Collection Date: 09/12/16 16:49 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by Metals by ICP/MS							
<u>Parameter</u> Arsenic	<u>Result Qual</u> 0.400 U	<u>LOQ/CL</u> 0.800	<u>DL</u> 0.200	<u>Units</u> ug/L	<u>DF</u> 2.5	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/22/16 14:40
Batch Information							
Analytical Batch: MM39344 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 14:40 Container ID: 1165399007-A		F F F F	Prep Batch Prep Method Prep Date/Ti Prep Initial W Prep Extract	: E200.2 me: 09/21/ ⁻ /t./Vol.: 50 Vol: 10 mL	16 07:23 mL		

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Results of TB-3-0916 Client Sample ID: TB-3-0916 Client Froject ID: 105.09008 .ab Project ID: 116539908 .ab Project ID: 116539908 Solids (%): Location: Result Qual LOQCL DL Units DE Limits Date Analyzed Sasoline Range Organics 0.0500 U 0.100 0.0310 mg/L 1 09/20/16 04:22 urrogates Herromofluorobenzene (surr) 88.1 50-150 % 1 09/20/16 04:22 Statch Information Analytical Batch: VFC1305 Analytical Batch: VFC1305 Analytical Batch: VFC1305 Analytical Batch: Thre: 09/20/16 04:25 Container ID: 1165399008-A	SGS				s US/	LNG Fa campling an AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16		
Results by Volatile Fuels           Parameter         Result Qual         LQQ/CL         DL         Units         DE         Limits         Date Analyzed           3asoline Range Organics         0.0500 U         0.100         0.0310         mg/L         1         09/20/16 04-25           Irrogates	Results of <b>TB-3-0916</b> Client Sample ID: <b>TB-3-0916</b> Client Project ID: <b>105.00148.16001 k</b> Lab Sample ID: 1165399008 Lab Project ID: 1165399	W Event 2	Collection Date: 09/12/16 10:05 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%):							
Parameter         Result Qual         LOQ/CL         DL         Units         DE         Limits         Date Analyzed         O9/20/16 04:28           urrogates	Results by Volatile Fuels			]						
Imparted         +Bromofluorobenzene (surr)       88.1       50-150       % 1       09/20/16 04:25         Analytical Batch: VFC13305       Analytical Method: KM50305       Prep Batch: VXX29595       Prep Method: SW50305         Analytical DaterTime: 09/20/16 04:25       Prep DaterTime: 09/19/16 06:00       Prep DaterTime: 09/19/16 06:00         Container ID: 1165399008-A       Prep Extract Vol: 5 mL       Prep Extract Vol: 5 mL	<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/20/16 04:25		
Batch Information         Analytical Batch: VFC13305         Analytical Method: AK101         Analytical Date/Time: 09/20/16 04:25         Container ID: 1165399008-A	urrogates 4-Bromofluorobenzene (surr)	88.1	50-150		%	1		09/20/16 04:25		
	Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/20/16 04:25 Container ID: 1165399008-A		F F F	Prep Method: Prep Date/Tin Prep Initial W Prep Extract V	SW5030B ne: 09/19/1 t./Vol.: 5 m Vol: 5 mL	6 06:00 L				

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Results of <b>TB-4-0916</b>								
Client Sample ID: <b>TB-4-0916</b> Client Project ID: <b>105.00148.16001 KW Event 2</b> Lab Sample ID: 1165399009 Lab Project ID: 1165399		Collection Date: 09/12/16 10:05 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Metals Department			7					
<u>Parameter</u> Mercury	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 09/16/16 15:42	
Batch Information								
Analytical Batch: MCV5738 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 09/16/16 15:42 Container ID: 1165399009-A			Prep Batch: Prep Method Prep Date/Tir Prep Initial W Prep Extract	MXX30216 : METHOD me: 09/15/1 /t./Vol.: 50 n Vol: 50 mL	16 13:00 mL			

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Results of <b>TPW-2-0916</b> Client Sample ID: <b>TPW-2-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399010 Lab Project ID: 1165399	Ca Ra M Sa La	Collection Date: 09/12/16 10:05 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by <b>Dissolved Metals</b> Parameter Mercury	<u>ResultQual</u> 0.577 J	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/16/16 15:47
Batch Information Analytical Batch: MCV5738 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 09/16/16 15:47 Container ID: 1165399010-A		F F F	Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30216 I: METHOD me: 09/15/′ Vt./Vol.: 50 n Vol: 50 mL	16 13:00 mL		

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## Results of TPW-2-0916

Client Sample ID: TPW-2-0916 Client Project ID: 105.00148.16001 KW Event 2 Lab Sample ID: 1165399010 Lab Project ID: 1165399

Collection Date: 09/12/16 10:05 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	1.88 J	2.00	0.620	ug/L	2.5		09/22/16 10:39
Antimony	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:39
Arsenic	15.9	0.800	0.200	ug/L	2.5		09/22/16 10:39
Barium	12.0	0.250	0.0400	ug/L	2.5		09/22/16 10:39
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 10:39
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:39
Boron	22.5	5.00	1.50	ug/L	2.5		09/22/16 10:39
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:39
Calcium	18800	50.0	15.0	ug/L	2.5		09/22/16 10:39
Chromium	0.250 U	0.500	0.150	ug/L	2.5		09/22/16 10:39
Cobalt	0.0316	0.0200	0.0100	ug/L	2.5		09/22/16 10:39
Copper	0.250 U	0.500	0.200	ug/L	2.5		09/22/16 10:39
Iron	56.9	20.0	6.20	ug/L	2.5		09/22/16 10:39
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		09/22/16 10:39
Magnesium	6400	20.0	6.20	ug/L	2.5		09/22/16 10:39
Manganese	96.8	0.100	0.0310	ug/L	2.5		09/22/16 10:39
Molybdenum	0.424	0.0500	0.0150	ug/L	2.5		09/22/16 10:39
Nickel	0.540 J	0.620	0.0620	ug/L	2.5		09/22/16 10:39
Potassium	4740	50.0	15.0	ug/L	2.5		09/22/16 10:39
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:39
Silicon	14900	100	31.0	ug/L	2.5		09/22/16 10:39
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:39
Sodium	7010	100	31.0	ug/L	2.5		09/22/16 10:39
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:39
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 10:39
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:39
Zinc	1.68 J	3.10	0.400	ug/L	2.5		09/22/16 10:39
Patch Information							
		_					
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level		F	rep Batch: N Prep Method:	E200 2			
Analyst: VDL		F	Prep Date/Tim	ie: 09/16/1	6 07:56		
Analytical Date/Time: 09/22/16 10:39		F	Prep Initial Wt	./Vol.: 50 r	nL		
Container ID: 1165399010-B		F	Prep Extract V	'ol: 10 mL			

Prep	Extract	Vol:	10	mL
------	---------	------	----	----

<u>Parameter</u> Hardness as CaCO3	<u>Result Qual</u> 73.2	<u>LOQ/CL</u> 1.00	<u>DL</u> 1.00	<u>Units</u> mg/L	<u>DF</u> 2.5	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/22/16 10:39
Print Date: 09/30/2016 9:15:22AM						J flaggin	g is activated
SGS North America Inc.	200 West Potter Dri t 907.562.2343 f 90	ve Anchorage 7.561.5301 w					



## Results of TPW-2-0916

Client Sample ID: **TPW-2-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165399010 Lab Project ID: 1165399 Collection Date: 09/12/16 10:05 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Dissolved Metals by ICP/MS

## **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 10:39 Container ID: 1165399010-B Prep Batch: MXX30199 Prep Method: E200.2 Prep Date/Time: 09/16/16 07:56 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/30/2016 9:15:22AM

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SGS				s US	LNG Fa Sampling a AL-FG-GR	cilities Groun nd Testing R ZZZ-00-0020	Confidential dwater Quality eport - Event 2 016-004 Rev. 0 16-Dec-16
Results of TPW-1-0916							
Client Sample ID: <b>TPW-1-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399011 Lab Project ID: 1165399	V Event 2	C F M S L	Collection Da Received Da Matrix: Wate Solids (%): Location:	ate: 09/12/ ate: 09/13/ r (Surface,	/16 11:57 16 13:13 Eff., Gro	und)	
Results by <b>Dissolved Metals</b>			_				
Description	De suit Quel	1.00/01	DI	1.1 14	DE	Allowable	Dete Archined
Parameter Mercury	0 500 LL	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/l	<u>DF</u> 1	Limits	Date Analyzed
	0.000 0	1.00	0.000	119/2	·		
Batch Information							
Analytical Batch: MCV5738 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 09/16/16 16:18 Container ID: 1165399011-A			Prep Batch: Prep Method Prep Date/Ti Prep Initial V Prep Extract	MXX30216 I: METHOD me: 09/15/ [,] Vt./Vol.: 50 Vol: 50 mL	) 16 13:00 mL		

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## Results of TPW-1-0916

Client Sample ID: **TPW-1-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165399011 Lab Project ID: 1165399 Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

Parameter	Result Qual		וח	l Inite	DE	Allowable	Date Analyzed
Aluminum		2.00	0.620		2.5	LITIIIS	09/22/16 10:42
Antimony	0.0209.1	0.0500	0.020	ug/L	2.5		09/22/16 10:42
Arsenic	0.400 U	0.800	0.200	ug/L	2.5		09/22/16 10:42
Barium	0.400 0	0.000	0.200	ug/L	2.5		09/22/16 10:42
Beryllium	0.925011	0.250	0.0400	ug/L	2.5		09/22/16 10:42
Bismuth	0.0250 U	0.0500	0.0200	ug/L	2.5		09/22/16 10:42
Boron	29.9	5.00	1 50	ug/L	2.5		09/22/16 10:42
Cadmium	0.0250.11	0.0500	0.0150	ug/L	2.5		09/22/16 10:42
Calcium	6340	50.0	15.0	ug/L	2.5		09/22/16 10:42
Chromium	0.250 11	0.500	0 150	ug/L	2.5		09/22/16 10:42
Cobalt	0.250 0	0.000	0.130	ug/L	2.5		09/22/16 10:42
Copper	0.25011	0.500	0.0100	ug/L	2.5		09/22/16 10:42
Iron	106	20.0	6.200	ug/L	2.5		09/22/16 10:42
Lead	0.0490.1	0 100	0.0310	ug/L	2.5		09/22/16 10:42
Magnesium	2660	20.0	6.20	ug/L	2.5		09/22/16 10:42
Manganese	61 1	0 100	0.0310	ug/L	2.5		09/22/16 10:42
Molvbdenum	0.702	0.0500	0.0150	ua/L	2.5		09/22/16 10:42
Nickel	0.193 J	0.620	0.0620	ua/L	2.5		09/22/16 10:42
Potassium	6440	50.0	15.0	ua/L	2.5		09/22/16 10:42
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:42
Silicon	1100	100	31.0	ug/L	2.5		09/22/16 10:42
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:42
Sodium	8990	100	31.0	ug/L	2.5		09/22/16 10:42
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:42
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 10:42
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:42
Zinc	38.3	3.10	0.400	ug/L	2.5		09/22/16 10:42
Batch Information							
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 10:42 Container ID: 1165399011-B		i i i i i i i i i i i i i i i i i i i	Prep Batch: M Prep Method: Prep Date/Tim Prep Initial Wt Prep Extract V	/IXX30199 E200.2 ne: 09/16/1 ./Vol.: 50 r /ol: 10 mL	16 07:56 mL		
						Allowable	

Parameter Result Qual LOQ/CL DL Units DF Date Analyzed Limits Hardness as CaCO3 26.8 1.00 1.00 mg/L 2.5 09/22/16 10:42 Print Date: 09/30/2016 9:15:22AM J flagging is activated 200 West Potter Drive Anchorage, AK 95518 SGS North America Inc. t 907.562.2343 f 907.561.5301 www.us.sgs.com



## Results of TPW-1-0916

Client Sample ID: **TPW-1-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165399011 Lab Project ID: 1165399 Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Dissolved Metals by ICP/MS

## **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 10:42 Container ID: 1165399011-B Prep Batch: MXX30199 Prep Method: E200.2 Prep Date/Time: 09/16/16 07:56 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/30/2016 9:15:22AM

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SGS				s US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16	
Results of TPW-9-0916								
Client Sample ID: <b>TPW-9-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165399014 Lab Project ID: 1165399	V Event 2	Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%):						
Results by <b>Dissolved Metals</b>			<u> </u>					
Parameter Mercury	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/16/16 15:56	
Batch Information								
Analytical Batch: MCV5738 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 09/16/16 15:56 Container ID: 1165399014-A			Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	MXX30216 : METHOD me: 09/15/ [,] /t./Vol.: 50 nL Vol: 50 mL	16 13:00 mL			

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## Results of TPW-9-0916

Client Sample ID: **TPW-9-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165399014 Lab Project ID: 1165399 Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Dissolved Metals by ICP/MS

						Allowable		
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed	
Aluminum	0.704 J	2.00	0.620	ug/L	2.5		09/22/16 10:53	
Antimony	0.0294 J	0.0500	0.0150	ug/L	2.5		09/22/16 10:53	
Arsenic	0.400 U	0.800	0.200	ug/L	2.5		09/22/16 10:53	
Barium	0.366	0.250	0.0400	ug/L	2.5		09/22/16 10:53	
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 10:53	
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:53	
Boron	30.0	5.00	1.50	ug/L	2.5		09/22/16 10:53	
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:53	
Calcium	6120	50.0	15.0	ug/L	2.5		09/22/16 10:53	
Chromium	0.250 U	0.500	0.150	ug/L	2.5		09/22/16 10:53	
Cobalt	0.0265	0.0200	0.0100	ug/L	2.5		09/22/16 10:53	
Copper	0.250 U	0.500	0.200	ug/L	2.5		09/22/16 10:53	
Iron	93.6	20.0	6.20	ug/L	2.5		09/22/16 10:53	
Lead	0.0385 J	0.100	0.0310	ug/L	2.5		09/22/16 10:53	
Magnesium	2530	20.0	6.20	ug/L	2.5		09/22/16 10:53	
Manganese	59.8	0.100	0.0310	ug/L	2.5		09/22/16 10:53	
Molybdenum	0.656	0.0500	0.0150	ug/L	2.5		09/22/16 10:53	
Nickel	0.179 J	0.620	0.0620	ug/L	2.5		09/22/16 10:53	
Potassium	6300	50.0	15.0	ug/L	2.5		09/22/16 10:53	
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:53	
Silicon	1020	100	31.0	ug/L	2.5		09/22/16 10:53	
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:53	
Sodium	8590	100	31.0	ug/L	2.5		09/22/16 10:53	
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:53	
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 10:53	
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:53	
Zinc	37.0	3.10	0.400	ug/L	2.5		09/22/16 10:53	
Batch Information								
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 10:53 Container ID: 1165399014-B			Prep Batch: MXX30199 Prep Method: E200.2 Prep Date/Time: 09/16/16 07:56 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL					
Decomptor	Deput Que		DI	Lipita		Allowable	Data Analyzad	



## Results of TPW-9-0916

Client Sample ID: **TPW-9-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165399014 Lab Project ID: 1165399 Collection Date: 09/12/16 11:57 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Dissolved Metals by ICP/MS

## **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 10:53 Container ID: 1165399014-B Prep Batch: MXX30199 Prep Method: E200.2 Prep Date/Time: 09/16/16 07:56 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/30/2016 9:15:22AM

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SGS				s US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential Iwater Quality port - Event 2 16-004 Rev. 0 16-Dec-16	
Results of PQ-W1-0916								
Client Sample ID: <b>PQ-W1-0916</b> Client Project ID: <b>105.00148.16001 KW Event 2</b> Lab Sample ID: 1165399015 Lab Project ID: 1165399		Collection Date: 09/12/16 15:10 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by <b>Dissolved Metals</b>			]					
Parameter Mercury	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 09/16/16 16:00	
Batch Information								
Analytical Batch: MCV5738 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 09/16/16 16:00 Container ID: 1165399015-A			Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	MXX30216 : METHOD me: 09/15/1 /t./Vol.: 50 n Vol: 50 mL	16 13:00 mL			

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#### Results of PQ-W1-0916

Client Sample ID: **PQ-W1-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165399015 Lab Project ID: 1165399 Collection Date: 09/12/16 15:10 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Dissolved Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Limits	Date Analyzed
Aluminum	1.76 J	2.00	0.620	ug/L	2.5		09/22/16 10:56
Antimony	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:56
Arsenic	1.04	0.800	0.200	ug/L	2.5		09/22/16 10:56
Barium	43.1	0.250	0.0400	ug/L	2.5		09/22/16 10:56
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 10:56
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:56
Boron	6.49	5.00	1.50	ug/L	2.5		09/22/16 10:56
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 10:56
Calcium	18400	50.0	15.0	ug/L	2.5		09/22/16 10:56
Chromium	0.250 U	0.500	0.150	ug/L	2.5		09/22/16 10:56
Cobalt	0.0454	0.0200	0.0100	ug/L	2.5		09/22/16 10:56
Copper	0.267 J	0.500	0.200	ug/L	2.5		09/22/16 10:56
Iron	10600	20.0	6.20	ug/L	2.5		09/22/16 10:56
Lead	0.0328 J	0.100	0.0310	ug/L	2.5		09/22/16 10:56
Magnesium	4630	20.0	6.20	ug/L	2.5		09/22/16 10:56
Manganese	633	0.100	0.0310	ug/L	2.5		09/22/16 10:56
Molybdenum	0.189	0.0500	0.0150	ug/L	2.5		09/22/16 10:56
Nickel	0.438 J	0.620	0.0620	ug/L	2.5		09/22/16 10:56
Potassium	2500	50.0	15.0	ug/L	2.5		09/22/16 10:56
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:56
Silicon	10600	100	31.0	ug/L	2.5		09/22/16 10:56
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:56
Sodium	8740	100	31.0	ug/L	2.5		09/22/16 10:56
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 10:56
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 10:56
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 10:56
Zinc	8.55	3.10	0.400	ug/L	2.5		09/22/16 10:56
Batch Information							
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 10:56 Container ID: 1165399015-B	Prep Batch: MXX30199 Prep Method: E200.2 Prep Date/Time: 09/16/16 07:56 56 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL						
						AU 11	



## Results of PQ-W1-0916

Client Sample ID: **PQ-W1-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165399015 Lab Project ID: 1165399 Collection Date: 09/12/16 15:10 Received Date: 09/13/16 13:13 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Dissolved Metals by ICP/MS

## **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 10:56 Container ID: 1165399015-B Prep Batch: MXX30199 Prep Method: E200.2 Prep Date/Time: 09/16/16 07:56 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/30/2016 9:15:22AM

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## Method Blank

Blank ID: MB for HBN 1743230 [MXX/30199] Blank Lab ID: 1352395 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165399001, 1165399002, 1165399005, 1165399006, 1165399010, 1165399011, 1165399014, 1165399015

Results by 200.8 Low	Level				
Parameter	Results	LOQ/CL	DL	Units	
Aluminum	1.00U	2.00	0.620	ug/L	
Antimony	0.0250U	0.0500	0.0150	ug/L	
Arsenic	0.400U	0.800	0.200	ug/L	
Barium	0.125U	0.250	0.0400	ug/L	
Beryllium	0.0250U	0.0500	0.0250	ug/L	
Bismuth	0.0250U	0.0500	0.0150	ug/L	
Boron	2.50U	5.00	1.50	ug/L	
Cadmium	0.0250U	0.0500	0.0150	ug/L	
Calcium	25.0U	50.0	15.0	ug/L	
Chromium	0.250U	0.500	0.150	ug/L	
Cobalt	0.0100U	0.0200	0.0100	ug/L	
Copper	0.250U	0.500	0.200	ug/L	
Iron	10.0U	20.0	6.20	ug/L	
Lead	0.0500U	0.100	0.0310	ug/L	
Magnesium	10.0U	20.0	6.20	ug/L	
Manganese	0.0500U	0.100	0.0310	ug/L	
Molybdenum	0.0250U	0.0500	0.0150	ug/L	
Nickel	0.310U	0.620	0.0620	ug/L	
Potassium	25.0U	50.0	15.0	ug/L	
Selenium	0.500U	1.00	0.310	ug/L	
Silicon	50.0U	100	31.0	ug/L	
Silver	0.0100U	0.0200	0.00620	ug/L	
Sodium	50.0U	100	31.0	ug/L	
Thallium	0.0100U	0.0200	0.00620	ug/L	
Tin	0.100U	0.200	0.0620	ug/L	
Vanadium	0.500U	1.00	0.310	ug/L	
Zinc	1.55U	3.10	0.400	ug/L	
Batch Information					
Analytical Batch: MM	S9544	Prep Ba	atch: MXX30199		

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer Nexlon P5 Analyst: VDL Analytical Date/Time: 9/22/2016 10:04:20AM Prep Batch: MXX30199 Prep Method: E200.2 Prep Date/Time: 9/16/2016 7:56:59AM Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 09/30/2016 9:15:33AM

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## **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165399 [MXX30199] Blank Spike Lab ID: 1352396 Date Analyzed: 09/22/2016 10:07

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165399001, 1165399002, 1165399005, 1165399006, 1165399010, 1165399011, 1165399014, 1165399015

#### Results by 200.8 Low Level

	E	lank Spike	(ug/L)	
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>
Aluminum	50	45.3	91	(85-115)
Antimony	5	5.46	109	(85-115)
Arsenic	25	25.0	100	(85-115)
Barium	25	25.6	103	(85-115)
Beryllium	12.5	12.0	96	(85-115)
Bismuth	12.5	12.3	98	(85-115)
Boron	50	45.9	92	(85-115)
Cadmium	12.5	13.2	106	(85-115)
Calcium	5000	4520	90	(85-115)
Chromium	12.5	11.8	95	(85-115)
Cobalt	12.5	12.2	98	(85-115)
Copper	25	24.2	97	(85-115)
Iron	500	476	95	(85-115)
Lead	5	5.01	100	(85-115)
Magnesium	5000	4630	93	(85-115)
Manganese	50	48.0	96	(85-115)
Molybdenum	12.5	12.2	97	(85-115)
Nickel	12.5	12.1	97	(85-115)
Potassium	5000	4670	94	(85-115)
Selenium	25	24.6	98	(85-115)
Silicon	2500	2340	94	(85-115)
Silver	5	5.08	102	(85-115)
Sodium	5000	4740	95	(85-115)
Thallium	2.5	2.48	99	(85-115)
Tin	12.5	12.8	102	(85-115)
Vanadium	25	23.9	96	(85-115)
Zinc	50	51.4	103	(85-115)

# **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Prep Batch: MXX30199 Prep Method: E200.2 Prep Date/Time: 09/16/2016 07:56 Spike Init Wt./Vol.: 50 ug/L Extract Vol: 10 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 09/30/2016 9:15:35AM

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Bench Snike Summany										
Original Sample ID: 1165399 MS Sample ID: 1352409 BN MSD Sample ID:	9002 ND				Analysis Analysis Analysis Matrix:	Date: 09 Date: 09 Date: Water (Si	9/22/2016 9/22/2016 urface. Eff	11:17 11:26 , Ground	)	
QC for Samples: 116539900 116539901	01, 11653990 15	02, 116539	99005, 116	5399006, 11	65399010	), 1165399	9011, 11653	99014,	,	
Results by 200.8 Low Level			_							
		Ma	trix Spike (	(ug/L)	Spike	e Duplicat	e (ug/L)			
Parameter Iron	Sample	<u>Spike</u>	<u>Result</u>	<u>Rec (%)</u>	<u>Spike</u>	<u>Result</u>	<u>Rec (%)</u>	<u>CL</u> 70,120	<u>RPD (%)</u>	RPD CL
Zinc	775	5000	9960 1220	74 89				70-130		
		000								
Batch Information										
Analytical Batch: MMS9544 Analytical Method: 200.8 Lo Instrument: Perkin Elmer Ne Analyst: VDL Analytical Date/Time: 9/22/2	w Level exlon P5 016 11:26:0	1AM		Prej Prej Prej Prej Prej	D Batch: N D Method: D Date/Tim D Initial Wt D Extract V	/XX30199 LL Diges ne: 9/16/2 ./Vol.: 50. /ol: 10.00	) t for Metals 016 7:56:5 .00mL mL	on ICP-MS 9AM	5	
Print Date: 09/30/2016 9:15:36AM										
1 1111 Date. 03/30/2010 9.13.30AM	1 200	) West Dott	or Drivo Ar	nchorago Al	( 05519					
SGS North America	t Inc. <u>t</u> 90	07.562.234	3 f 907.561	1.5301 www	.us.sgs.co	om		Ma	mber of SCS	Group



## Billable Matrix Spike Summary

Original Sample ID: 1165399002 MS Sample ID: 1165399003 BMS MSD Sample ID: 1165399004 BMSD

QC for Samples:

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Analysis Date: 09/22/2016 10:13 Analysis Date: 09/22/2016 10:15 Analysis Date: 09/22/2016 10:18 Matrix: Water (Surface, Eff., Ground)

Results by <b>200.8 Low Level</b>										
	Matri		trix Spike (	ix Spike (ug/L)		Spike Duplicate (ug/L)				
<u>Parameter</u> Aluminum	<u>Sample</u> 20.0	<u>Spike</u> 50.0	<u>Result</u> 76.2	<u>Rec (%)</u> 112	<u>Spike</u> 50.0	<u>Result</u> 69.6	<u>Rec (%)</u> 99	<u>CL</u> 70-130	<u>RPD (%)</u> 9.10	<u>RPD CL</u> (< 20 )
Antimony	0.254	5.00	6.04	116	5.00	5.44	104	70-130	10.50	(< 20)
Arsenic	0.302J	25.0	25.9	102	25.0	24.3	96	70-130	6.30	(< 20)
Barium	1.26	25.0	28.8	110	25.0	26.9	102	70-130	7.10	(< 20)
Beryllium	0.0250U	12.5	11.9	95	12.5	11.6	93	70-130	1.90	(< 20)
Bismuth	0.0250U	12.5	12.4	99	12.5	11.9	95	70-130	3.60	(< 20)
Boron	31.8	50.0	78.5	93	50.0	75.8	88	70-130	3.50	(< 20)
Cadmium	0.284	12.5	13.7	107	12.5	12.8	100	70-130	7.30	(< 20)
Calcium	6950	5000	11700	96	5000	10800	78	70-130	7.90	(< 20)
Chromium	0.241J	12.5	13.1	103	12.5	12.0	94	70-130	8.90	(< 20)
Cobalt	0.177	12.5	13.4	106	12.5	12.5	98	70-130	7.60	(< 20)
Copper	6.57	25.0	31.7	100	25.0	30.1	94	70-130	5.10	(< 20)
Iron	6260	500	6450	39 *	500	5900	-72 *	70-130	8.90	(< 20)
Lead	8.18	5.00	13.1	99	5.00	12.7	90	70-130	3.60	(< 20)
Magnesium	2780	5000	7460	94	5000	6980	84	70-130	6.70	(< 20)
Manganese	109	50.0	164	109	50.0	151	85	70-130	7.90	(< 20)
Molybdenum	0.498	12.5	14.2	109	12.5	12.8	99	70-130	10.20	(< 20)
Nickel	0.771	12.5	13.4	101	12.5	12.8	96	70-130	4.80	(< 20)
Potassium	7090	5000	11900	96	5000	11200	83	70-130	5.80	(< 20)
Selenium	0.500U	25.0	24.6	98	25.0	22.7	91	70-130	7.80	(< 20)
Silver	0.0100U	5.00	5.34	107	5.00	4.92	99	70-130	8.10	(< 20)
Sodium	9280	5000	13800	90	5000	13000	75	70-130	5.80	(< 20)
Thallium	0.0100U	2.50	2.58	103	2.50	2.44	98	70-130	5.50	(< 20)
Tin	0.100U	12.5	13.4	108	12.5	12.4	100	70-130	7.70	(< 20)
Vanadium	0.500U	25.0	25.2	101	25.0	23.6	94	70-130	6.70	(< 20)
Zinc	775	50.0	850	151 *	50.0	799	48 *	70-130	6.30	(< 20)

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer Nexlon P5 Analyst: VDL Analytical Date/Time: 9/22/2016 10:15:57AM Prep Batch: MXX30199 Prep Method: LL Digest for Metals on ICP-MS Prep Date/Time: 9/16/2016 7:56:59AM Prep Initial Wt./Vol.: 50.00mL Prep Extract Vol: 10.00mL

Print Date: 09/30/2016 9:15:36AM

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## Billable Matrix Spike Summary

Original Sample ID: 1165399011 MS Sample ID: 1165399012 BMS MSD Sample ID: 1165399013 BMSD

QC for Samples:

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Analysis Date: 09/22/2016 10:42 Analysis Date: 09/22/2016 10:45 Analysis Date: 09/22/2016 10:47 Matrix: Water (Surface, Eff., Ground)

Results by 200.8 Low Level										
		Ма	atrix Spike	(ug/L)	Spik	e Duplicat	e (ug/L)			
Parameter	Sample	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	Rec (%)	CL	<u>RPD (%)</u>	RPD CL
Aluminum	0.769J	50.0	48.8	96	50.0	50.6	100	70-130	3.60	(< 20)
Antimony	0.0209J	5.00	5.49	109	5.00	5.65	113	70-130	2.90	(< 20)
Arsenic	0.400U	25.0	25.1	100	25.0	26.6	106	70-130	6.00	(< 20)
Barium	0.424	25.0	26.4	104	25.0	27.6	109	70-130	4.80	(< 20)
Beryllium	0.0250U	12.5	12.4	99	12.5	12.7	101	70-130	2.00	(< 20)
Bismuth	0.0250U	12.5	12.1	97	12.5	12.7	101	70-130	4.90	(< 20)
Boron	29.9	50.0	80.1	101	50.0	80.3	101	70-130	0.24	(< 20)
Cadmium	0.0250U	12.5	13.1	105	12.5	13.3	107	70-130	1.70	(< 20)
Calcium	6340	5000	11200	98	5000	11500	104	70-130	2.80	(< 20)
Chromium	0.250U	12.5	12.4	99	12.5	13.7	109	70-130	9.60	(< 20)
Cobalt	0.0269	12.5	12.7	102	12.5	13.8	110	70-130	8.00	(< 20)
Copper	0.250U	25.0	25.4	102	25.0	26.6	106	70-130	4.50	(< 20)
Iron	106	500	688	116	500	642	107	70-130	6.90	(< 20)
Lead	0.0490J	5.00	5.05	100	5.00	5.27	104	70-130	4.30	(< 20)
Magnesium	2660	5000	7550	98	5000	7640	100	70-130	1.20	(< 20)
Manganese	61.1	50.0	113	103	50.0	122	122	70-130	7.90	(< 20)
Molybdenum	0.702	12.5	14.3	109	12.5	15.1	115	70-130	5.10	(< 20)
Nickel	0.193J	12.5	12.7	100	12.5	13.6	107	70-130	6.80	(< 20)
Potassium	6440	5000	11700	105	5000	12100	114	70-130	3.80	(< 20)
Selenium	0.500U	25.0	24.3	97	25.0	26.2	105	70-130	7.40	(< 20)
Silicon	1100	2500	3630	101	2500	3660	102	70-130	0.61	(< 20)
Silver	0.0100U	5.00	4.95	99	5.00	5.23	105	70-130	5.30	(< 20)
Sodium	8990	5000	14200	103	5000	14400	109	70-130	1.80	(< 20)
Thallium	0.0100U	2.50	2.48	99	2.50	2.65	106	70-130	6.60	(< 20)
Tin	0.100U	12.5	13.1	104	12.5	13.3	107	70-130	1.90	(< 20)
Vanadium	0.500U	25.0	24.2	97	25.0	26.9	108	70-130	10.50	(< 20)
Zinc	38.3	50.0	88.7	101	50.0	92.5	108	70-130	4.20	(< 20)

## **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Analytical Date/Time: 9/22/2016 10:45:04AM Prep Batch: MXX30199 Prep Method: LL Digest for Metals on ICP-MS Prep Date/Time: 9/16/2016 7:56:59AM Prep Initial Wt./Vol.: 50.00mL Prep Extract Vol: 10.00mL

Print Date: 09/30/2016 9:15:36AM

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Sampling and Testing Report - Event 2
USAL-FG-GRZZZ-00-002016-004 Rev. 0
16-Dec-16

<b>SGS</b>			Sa USA	ampling and Testing Rep L-FG-GRZZZ-00-002016	ort - Event 2 6-004 Rev. 0 16-Dec-16
I Method Blank					
Blank ID: MB for HB Blank Lab ID: 13533	N 1743426 [MXX/30213] 03	Matri	x: Water (Surfa	ace, Eff., Ground)	
QC for Samples: 1165399007					
Results by 200.8 Lov	w Level				
Parameter Arsenic	<u>Results</u> 0.400U	<u>LOQ/CL</u> 0.800	<u>DL</u> 0.200	<u>Units</u> ug/L	
atch Information	<u> </u>				
Analytical Batch: M Analytical Method: Instrument: Perkin Analyst: VDL Analytical Date/Tim	IMS9544 200.8 Low Level Elmer Nexlon P5 e: 9/22/2016 1:44:36PM	Prep Ba Prep Mo Prep Da Prep Ini Prep Ex	atch: MXX30213 ethod: E200.2 ate/Time: 9/21/2 tial Wt./Vol.: 50 ttract Vol: 10 ml	3 2016 7:23:01AM mL -	
				_	

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SGS				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
Blank Spike ID: LCS for H Blank Spike Lab ID: 13533 Date Analyzed: 09/22/20	BN 1165399 [MX] 304 16 13:47	X30213	3]	Matrix: Water (Surface, Eff., Ground)
QC for Samples: 11653	99007			
Results by 200.8 Low Lev	el		_	
	Blan	k Spike	(ug/L)	
Parameter	<u>Spike</u> <u>R</u>	esult	Rec (%)	<u>CL</u>
Arsenic	25 25	5.4	102	(85-115)
Batch Information				
Analytical Batch: MMS9544 Analytical Method: 200.8 L Instrument: Perkin Elmer M Analyst: VDL	↓ ow Level NexIon P5			Prep Batch: <b>MXX30213</b> Prep Method: <b>E200.2</b> Prep Date/Time: <b>09/21/2016 07:23</b> Spike Init Wt./Vol.: 25 ug/L Extract Vol: 10 mL Dupe Init Wt./Vol.: Extract Vol:
int Date: 09/30/2016 9:15:43AM	200 We	st Potte	r Drive Anchor	age, AK 95518
SGS North Americ	ca Inc. t 907.56	2 2343	f 907.561.530	aye, Arvession

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16 Matrix Spike Summary Original Sample ID: 1353306 Analysis Date: 09/22/2016 13:50 MS Sample ID: 1353307 MS Analysis Date: 09/22/2016 13:53 MSD Sample ID: 1353308 MSD Analysis Date: 09/22/2016 13:56 Matrix: Water (Surface, Eff., Ground) QC for Samples: 1165399007 Results by 200.8 Low Level Matrix Spike (ug/L) Spike Duplicate (ug/L) Parameter Sample Spike Result Rec (%) <u>Spike</u> Result Rec (%) CL RPD (%) RPD CL Arsenic 26.9 25.0 54.1 109 25.0 50.8 96 70-130 6.20 (< 20) **Batch Information** Analytical Batch: MMS9544 Prep Batch: MXX30213 Prep Method: LL Digest for Metals on ICP-MS Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Prep Date/Time: 9/21/2016 7:23:01AM Analyst: VDL Prep Initial Wt./Vol.: 50.00mL Analytical Date/Time: 9/22/2016 1:53:17PM Prep Extract Vol: 10.00mL

Print Date: 09/30/2016 9:15:43AM

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## Method Blank

Blank ID: MB for HBN 1743537 [MXX/30216] Blank Lab ID: 1353649 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165399001, 1165399002, 1165399005, 1165399006, 1165399009, 1165399010, 1165399011, 1165399014, 1165399015

Results by EPA 1631 E		)			
Parameter Mercury	<u>Results</u> 0.500U	<u>LOQ/CL</u> 1 00	<u>DL</u> 0.500	<u>Units</u> ng/l	
Batch Information					
Analytical Batch: MCV5738 Analytical Method: EPA 1631 E Instrument: Analyst: NEG Analytical Date/Time: 9/16/2016 2:22:12PM		Prep B Prep M Prep D Prep Ir Prep E	atch: MXX3021 Iethod: METHO Date/Time: 9/15/2 hitial Wt./Vol.: 50 Extract Vol: 50 m	6 D 2016 1:00:00PM ) mL L	

Print Date: 09/30/2016 9:15:45AM

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## Method Blank

Blank ID: MB for HBN 1743537 [MXX/30216] Blank Lab ID: 1353650 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165399001, 1165399002, 1165399005, 1165399006, 1165399009, 1165399010, 1165399011, 1165399014, 1165399015

Results by EPA 1631 E					
<u>Parameter</u>	<u>Results</u>	<u>LOQ/CL</u>	<u>DL</u>	<u>Units</u>	
Mercury	0.893J	1.00	0.500	ng/L	
Batch Information					
Analytical Batch: MCV5738		Prep Ba	3		
Analytical Method: EPA 1631 E		Prep Me	20		
Instrument:		Prep Da	1016 1:00:00PM		
Analyst: NEG		Prep Ini	mL		
Analytical Date/Time: 9/16/2016 2:58:01PM		Prep Ex	-		

Print Date: 09/30/2016 9:15:45AM

SGS North America Inc.


# Method Blank

Blank ID: MB for HBN 1743537 [MXX/30216] Blank Lab ID: 1353653 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165399001, 1165399002, 1165399005, 1165399006, 1165399009, 1165399010, 1165399011, 1165399014, 1165399015

Results by EPA 1631 E					
<u>Parameter</u> Mercury	<u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	
Batch Information					
Analytical Batch: MCV Analytical Method: EP Instrument: Analyst: NEG Analytical Date/Time:	5738 A 1631 E 9/16/2016 3:24:53PM	Prep Ba Prep Me Prep Da Prep Ini Prep Ex	tch: MXX30216 ethod: METHOE ate/Time: 9/15/2 tial Wt./Vol.: 50 tract Vol: 50 ml	6 2016 1:00:00PM mL _	

Print Date: 09/30/2016 9:15:45AM



# Method Blank

Blank ID: MB for HBN 1743537 [MXX/30216] Blank Lab ID: 1353655 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165399001, 1165399002, 1165399005, 1165399006, 1165399009, 1165399010, 1165399011, 1165399014, 1165399015

Results by EPA 1631 E					
Parameter Mercury	Results	LOQ/CL 1.00	<u>DL</u> 0.500	<u>Units</u>	
Batch Information					
Analytical Batch: MCV Analytical Method: EP Instrument: Analyst: NEG Analytical Date/Time:	/5738 A 1631 E 9/16/2016 3:51:47PM	Prep Ba Prep Me Prep Da Prep Ini Prep Ex	atch: MXX30210 ethod: METHOI ate/Time: 9/15/2 tial Wt./Vol.: 50 tract Vol: 50 m	6 D 2016 1:00:00PM mL L	

Print Date: 09/30/2016 9:15:45AM



# Method Blank

Blank ID: MB for HBN 1743537 [MXX/30216] Blank Lab ID: 1353659 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165399001, 1165399002, 1165399005, 1165399006, 1165399009, 1165399010, 1165399011, 1165399014, 1165399015

Results by EPA 1631 E		·			
<u>Parameter</u> Mercury	<u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	
Batch Information					
Analytical Batch: MCN Analytical Method: EF Instrument: Analyst: NEG Analytical Date/Time:	/5738 A 1631 E 9/16/2016 4:36:42PM	Prep Ba Prep Me Prep Da Prep Ini Prep Ex	atch: MXX30216 ethod: METHOI ate/Time: 9/15/2 tial Wt./Vol.: 50 ttract Vol: 50 ml	6 2016 1:00:00PM mL L	

Print Date: 09/30/2016 9:15:45AM

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	5	5

Blank Spike Summary			
Blank Spike ID: LCS for HBN Blank Spike Lab ID: 1353641	N 1165399 [MXX30216 : 14:13	5]	
	14.15		MaAix: WaAer (Surface, Eff., Groun/)
QC for Samples: 1165399 1165399	001, 1165399002, 11653 014, 1165399015	399005, 11653	399006, 1165399009, 1165399010, 1165399011,
ResulAs bz EPA 1631 E			
	Blank Spike	(ng7L)	
ParameAer	Spike ResulA	<u>Rec (%)</u>	<u>CL</u>
Mercurz	25 2t.6	110	(tt 8123)
Batch Information			
y nalzAcal BaAc-: MCV5738 y nalzAcal MeA o/: EPA 1631 InsAumenA y nalzsA NEG	E		Prep Ba&-: MXX30216 Prep MeA o/: METHOD Prep Da&Thime: 09/15/2016 13:00 Spike IniAWATTol.: 25 ngTL ExAtacATol: 50 mL Dupe IniAWATTol.: ExAtacATol:
PrinADaA: 0973072016 9:15:46v M			
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#### Billable Matrix Spike Summary

Original Sample ID: 1165399002 MS Sample ID: 1165399003 BMS MSD Sample ID: 1165399004 BMSD Analysis Date: 09/16/2016 15:11 Analysis Date: 09/16/2016 15:15 Analysis Date: 09/16/2016 15:20 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by EPA 1631 E										
		Ма	trix Spike (	(ng/L)	Spike	e Duplicate	e (ng/L)			
Parameter	Sample	Spike	Result	<u>Rec (%)</u>	Spike	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Mercury	0.648J	25.0	25.6	100	25.0	24.8	97	71-125	3.00	(< 24 )
Batch Information Analytical Batch: MCV5738 Analytical Method: EPA 1631 Instrument: Analyst: NEG Analytical Date/Time: 9/16/20	E 016 3:15:5	6PM		Prep Prep Prep Prep Prep	) Batch: N Method: ) Date/Tim ) Initial Wt ) Extract V	MXX30216 Digestion ne: 9/15/2 t./Vol.: 50. /ol: 50.00	, Low Level 016 1:00:0 00mL mL	Mercury (\ 0PM	₩)	

Print Date: 09/30/2016 9:15:47AM

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#### Billable Matrix Spike Summary

Original Sample ID: 1165399011 MS Sample ID: 1165399012 BMS MSD Sample ID: 1165399013 BMSD Analysis Date: 09/16/2016 16:18 Analysis Date: 09/16/2016 16:23 Analysis Date: 09/16/2016 16:27 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by EPA 1631 E										
		Ma	trix Spike	(ng/L)	Spik	e Duplicate	e (ng/L)			
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Mercury	0.500U	25.0	27.4	109	25.0	26.6	106	71-125	2.80	(< 24 )
Batch Information Analytical Batch: MCV5738 Analytical Method: EPA 1631 Instrument: Analyst: NEG Analytical Date/Time: 9/16/20	I E 016 4:23:1	2PM		Prep Prep Prep Prep Prep	) Batch: N Method: Date/Tin Initial Wt	MXX30216 Digestion ne: 9/15/2 t./Vol.: 50. /ol: 50.00	Dissolved I 016 1:00:0 00mL mL	Low Level 00PM	Mercury W	

Print Date: 09/30/2016 9:15:47AM

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- Method Blank					
Blank ID: MB for HBN 174 Blank Lab ID: 1351929	Blank ID: MB for HBN 1743108 [STS/5201] Blank Lab ID: 1351929		k: Water (Surfa	ace, Eff., Ground)	
QC for Samples: 1165399001, 1165399002, 1	165399005				
Results by SM21 2540D					
Parameter Total Suspended Solids	<u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.310	<u>Units</u> mg/L	
Batch Information					
Analytical Batch: STS520 Analytical Method: SM21 Instrument: Analyst: LLP Analytical Date/Time: 9/1	1 2540D 4/2016 11:12:55AM				

Print Date: 09/30/2016 9:15:48AM

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SGS			s US	Sampling and Testing	Report - Event 2 02016-004 Rev. 0 16-Dec-16			
Duplicate Sample Summary	y							
Original Sample ID: 116540 Duplicate Sample ID: 13519 QC for Samples:	0001 988		Analysis Date: 09/14/2016 11:12 Matrix: Water (Surface, Eff., Ground)					
1165399001, 1165399002, 1	165399005							
Results by SM21 2540D								
NAME	Original	Duplicate	Units	<u>RPD (%)</u>	RPD CL			
Total Suspended Solids	529	495	mg/L	6.60*	(< 5)			
Instrument: Analyst: LLP								

Print Date: 09/30/2016 9:15:49AM

- Duplicate Sample Summary	1							
Original Sample ID: 1165399 Duplicate Sample ID: 13523	9002 02		Analysis Date: 09/14/2016 11:12 Matrix: Water (Surface, Eff., Ground)					
QC for Samples:								
1165399001, 1165399002, 1	165399005							
Results by SM21 2540D								
NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL			
Total Suspended Solids	9.60	8.40	mg/L	13.30*	(< 5)			
Batch Information								
Analytical Batch: STS5201 Analytical Method: SM21 254 Instrument:	0D							
Analyst: LLP								

Print Date: 09/30/2016 9:15:49AM

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- Duplicate Sample Summary							
Original Sample ID: 116539900 Duplicate Sample ID: 11653990 QC for Samples:	Original Sample ID: 1165399002 Ouplicate Sample ID: 1165399016 OC for Samples:		Analysis Date: 09/14/2016 11:12 Matrix: Water (Surface, Eff., Ground)				
Results by SM21 2540D							
	Original	Duplicate	Units	RPD (%)	RPD CL		
Total Suspended Solids	9.60	8.40	mg/L	13.30*	(< 5)		
Batch Information Analytical Batch: STS5201 Analytical Method: SM21 2540D Instrument: Analyst: LLP							
Print Date: 00/30/2016 0:15:404M							
SGS North America Inc	200 West Pot t 907.562.234	ter Drive Anchorage, / I3 f 907.561.5301 ww	AK 95518 w.us.sgs.com				
	I.			n	Member of SGS Group		

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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1165399 [STS5201] Blank Spike Lab ID: 1351930 Date Analyzed: 09/14/2016 11:12 Spike Duplicate ID: LCSD for HBN 1165399 [STS5201] Spike Duplicate Lab ID: 1351931 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165399001, 1165399002, 1165399005

Results by SM21 2540D									
		Blank Spike	e (mg/L) Spike Duplicate (mg/L)						
Parameter	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Total Suspended Solids	50	46.5	93	50	49.1	98	(75-125)	5.40	* (< 5)
Batch Information Analytical Batch: STS5201 Analytical Method: SM21 2540D Instrument: Analyst: LLP	)			Pre Pre Pre Spil Dup	p Batch: p Method: p Date/Tim ke Init Wt./\ pe Init Wt./\	e: /ol.: 50 mg/L /ol.: 50 mg/L	- Extract Vo	ol: 1000 mL : 1000 mL	

Print Date: 09/30/2016 9:15:50AM

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USAL-FG-GRZZZ-00-002016-004 Rev. 0
16-Dec-16

ethod Blank				
Blank ID: MB for HBN 174 Blank ] aL ID: 13T/ 513	3134 08 [8 ST/5/2	Mað,t	∶ia6mrx8W/fa	a(mucff⊞.roWniGd
b 9 for 8aQCmp: 11eT3ss551				
)mpW4pLR <b>SM212540C</b>		)		
<u>OaraQm6m</u> [o6alD,ppolPmG8ol,Qp	<u>) mpWKpp</u> TE55y	<u>] Ub S9]</u> 1555	<u>D]</u> 3⊟5	<u>y n,@</u> Qg <b>\$</b>
Batch Information				
AnalR6(al Ba6(h: 8[8T/5 AnalR6(al Mm6hoG 8M/1 Inp6WQmn6 AnalRp6]]O	5/ / T459			

Or,n6Da0m 5s\$5\$51e s:1T:T/AM

8. 8 North AQmr,(a In(E

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

SGS			US	Sampling and Testing AL-FG-GRZZZ-00-00	g Report - Event 2 02016-004 Rev. 0 16-Dec-16
Duplicate Sample Summary Original Sample ID: 1165399001 Duplicate Sample ID: 1352027 QC for Samples: 1165399001			Analysis Date: Matrix: Water (	09/14/2016 16:00 Surface, Eff., Grou	nd)
Results by SM21 2540C					
<u>NAME</u> Total Dissolved Solids	<u>Original</u> 140	Duplicate 143	<u>Units</u> mg/L	<u>RPD (%)</u> 2.10	<u>RPD CL</u> (< 5 )
Analytical Batch: STS5202 Analytical Method: SM21 25 Instrument: Analyst: LLP	540C				

Print Date: 09/30/2016 9:15:53AM



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1165399 [STS5202] Blank Spike Lab ID: 1352014 Date Analyzed: 09/14/2016 16:00 Spike Duplicate ID: LCSD for HBN 1165399 [STS5202] Spike Duplicate Lab ID: 1352015 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165399001

Results by SM21 2540C									
		Blank Spike	e (mg/L)	5	Spike Dupli	cate (mg/L)			
Parameter	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Total Dissolved Solids	330	343	104	330	343	104	(75-125)	0.00	(< 5)
Batch Information Analytical Batch: STS5202 Analytical Method: SM21 25400 Instrument: Analyst: LLP	2			Pre Pre Pre Spil Dup	o Batch: o Method: o Date/Tim ke Init Wt./\ oe Init Wt./\	e: /ol.: 330 mg /ol.: 330 mg	/L Extract V	'ol: 100 mL ol: 100 mL	

Print Date: 09/30/2016 9:15:55AM

SGS			US	Sampling and Testing Report - I SAL-FG-GRZZZ-00-002016-004 16-	Event 2 Rev. 0 Dec-16
Method Blank					
Blank ID: MB for HBN 174 Blank Lab ID: 1352273	I3198 [STS/5208]	Matrix	: Water (Su	rface, Eff., Ground)	
QC for Samples: 1165399002, 1165399005, 1	165399006				
Results by SM21 2540C					
Parameter Total Dissolved Solids	<u>Results</u> 4.00J	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	
Batch Information					
Analytical Batch: STS52 Analytical Method: SM21 Instrument: Analyst: KBE Analytical Date/Time: 9/1	08 2540C 15/2016 1:38:50PM				

Print Date: 09/30/2016 9:15:57AM

5399006	1	7 nalAyiy Da2e: 09: 4 a2tiM x a2er W3ci	ଶ5su016 13:3/ r(atef,((E.rGcno	d
Original	Deplit a?b	Nipi2/		
6LED	00ED	mgsJ	380	V% 5 0
	G 399006 Original 6LED	3399006 Original Deplit a2e 6L D 66 D	A a2tiM x a2er VSci Original Dcplit a2e Nni2y 6LED 66ED mgsJ	A a2iM x a2er VScr(at ef, ((E. rCcno 3399006 Original Deplit a2e Nni2/ ) CD WP d 6LED 66E mgsU 3ED

Crin2Da2e: 09\$30\$1016 9:15:5/74

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Duplicate Sample Summar	у								
Original Sample ID: 116539900u Dcplit a2e Sample ID: 1165399016			7 nalAyiy Da2e: 09s15su016 13:3/ 4 a2tiM x a2er W3cr(atef, ((⊞. rGcnod						
b Q (Gr Sampley:									
) eycl2y RA SM21 2540C									
%74,	Original	Dcplit a2e	Nni2/	<u>) CD ₩ d</u>	) CD QU				
TG2al DiyyGveo SGioy	6LÐ	66Ð	mgsU	3₿0	₩ 5 d				
Batch Information         7 nalA2t al Ba2 h: STS5u0/         7 nalA2t al 4 e2hGo: S4 u1 u5         Iny2cmen2	SLOQ								
7nalAy2 KB,									
n2Daæ: 09\$30\$u016 9:15:5/74									
S. S %Gr2n 7 merit	a Int E u00 x ey20	CG22er Drive 7 nt hGragef	7K 9551/ wfcvFvqvf≇Gm						
		CECTOODOTDOOT WW	may yaya Gir		4 em Rer Q(S.S.rCcp				

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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1165399 [STS520] b Blank Spike La4 ID: 13522t A Daye z nald/ eu: 09c15c2016 13:3] Spike DRplisaye ID: LCSD for HBN 1165399 [STS520] b Spike DRplisaye La4 ID: 13522t 5 Wayri(:, ayer BSR fase. Gff). ProRnum

7 C for Sag plex: 1165399002. 1165399005. 1165399006

MexRlyx 4d SM21 2540C									
		Blank Spike	Eg voLm	Ś	Spike DRplis	saye Eg voLm			
<u>%arag eyer</u>	<u>Spike</u>	MexRy	<u>Mes EQ m</u>	<u>Spike</u>	MexRly	<u>Mes EQ m</u>	<u>CL</u>	<u>M%DEQ</u> m	M%D CL
Toyal Dixxol-eu Soliux	330	331	100	330	331	100	Et 5⊲25 m	0)00	Eh 5 m
Batch Information z naldyisal BaysV: STS5208 z naldyisal WeyVou: SM21 25400 InxyrRg eny. z naldxy. KBE	>			%re %re Spi DR	p BaysV: p WeyVou: p DayecTig ( ke Iniy, y)d4 pe Iniy, y)d4	e: (ol): 330 g v(	1. G(yrasyK 1. G(yrasyKo	ol: 100 g L I: 100 g L	

%rinyDaye: 09c30c2016 9:15:59zW

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16-Dec-16

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Method Blank	
Blank ID: MB for HBN 1743048 [STS/5012] Blank Lab ID: 1350455	Ma69,t:i afor xSW/fa(pucffE).roWhOd
9 Q for SaC mpe: 11853ss228	
) peW& bR <b>SM21 2540D</b>	
OaraCp@pr ) peW@e	<u>LU9 /QL</u> <u>y n,6e</u>
Tofal SWempnQpGSol, Ge 21522y	1E2 2B12 CP/L
Batch Information gnalR6(al Ba6(A: STS5012 gnalR6(al Mp6AoG SM01 0542D Ine6WCpn6 gnalRe6 hBc gnalR6(al Da¢p/T,Cp: s/18/0218 s:42:43gM	Λ

Or,n6Datp: 2s/32/0218 s:18:21gM

S. S Nor6AgCpr,(a In(E

022 i pe6Oo66pr Dr,vp gn(AoraPpugh s551K t s275580£9343 f s27558155321 www₽/eEPeĘoC

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Duplicate Sample ID: 1165396009 Duplicate Sample ID: 1952376 CC for Samples: 11659/ / 006       Analysis Date: 0/ 41642016 0/ :30 Matrix: Water (Surface, Eff., Ground)         Results by SM21 2540D       Image: Comparison of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symples of the symple of the symples of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple of the symple	SGS			US	Sampling and Testing SAL-FG-GRZZZ-00-00	9 Report - Event 2 02016-004 Rev. 0 16-Dec-16
Original Sample ID: 1165396009 Duplicate Sample ID: 1952376 C for Samples: 11659/ / 006 Results by SM21 2540D NAME Original Duplicate Units RPD.(%) RPD.CL Total Suspended Solids 133 19/ mg4. 9.50 (v 5) Batch Information Analytical MetBod: SM21 2530D Instrument: Analyti: h < E	Duplicate Sample Summar	у				
NAME         Original         Duplicate         Units         RPD (%)         RPD CL           Total Suspended Solids         133         19/         mg4.         9.50         (v 5 )           Batch Information         Analytical <atcb: sts5210<="" td="">         Analytical MetBod: SM21 2530D         Instrument:         Analyst: h <e< td="">         Visit in the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second</e<></atcb:>	Original Sample ID: 116539 Duplicate Sample ID: 19523 QC for Samples: 11659/ / 006	96009 376		Analysis Date: Matrix: Water (	0/ 41642016 0/ :30 Surface, Eff., Grou	nd)
NAMEOriginalDuplicateUnitsRPD (%)RPD CLTotal Suspended Solids13319/mg4.9.50(v 5 )Batch InformationAnalytical <atcb: sts5210:<br=""></atcb:> Analytical MetBod: SM21 2530D: Instrument: Analyst: h < Eh < Eh < E	Results by SM21 2540D					
Total Suspended Solids       133       19/       mg4_       9.50       (v 5 )         Batch Information         Analytical <atcb: sts5210<="" td="">         Analytical MetBod: SM21 2530D         Instrument:         Analyst: h <e< td=""></e<></atcb:>	NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL
Analytical <atc: sts5210<br="">Analytical MetBod: SM21 2530D Instrument: Analyst: h <e< td=""><td>Total Suspended Solids</td><td>133</td><td>19/</td><td>mg<b>4</b>_</td><td>9.50</td><td>(v 5)</td></e<></atc:>	Total Suspended Solids	133	19/	mg <b>4</b> _	9.50	(v 5)

Print Date: 0/ 49042016 / :16:02AM



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1165399 [STS5210] Blank Spike Lab ID: 1352456 Date Analyzed: 09/16/2016 09:40 Spike Duplicate ID: LCSD for HBN 1165399 [STS5210] Spike Duplicate Lab ID: 135245R x atriW ( ater ,SurfaceE ffŒ) roundP

v C for Sa%pleM 1165399006

s eMultMby SM21 2540D									
		Blank Spike	e,%QLP	ç	Spike Dupli	cate ,%QLP			
mara%eter	<u>Spike</u>	<u>s eMult</u>	<u>s ec ,g P</u>	Spike	<u>s eMult</u>	<u>s ec ,g P</u>	<u>CL</u>	<u>s mD,g P</u>	<u>s mD CL</u>
Total Sumpended SolidM	50	50 <b>Q</b>	100	50	50@	101	, R57125 P	0@0	,- 5 P
Batch Information									
Analytical Batc<: STS5210				mre	p Batc<:				
Analytical X et <od: 2540l<="" sm21="" td=""><td>)</td><td></td><td></td><td>mre</td><td>p x et<ou. p Date/Ti%</ou. </td><td>e:</td><td></td><td></td><td></td></od:>	)			mre	p x et <ou. p Date/Ti%</ou. 	e:			
AnalyM: KBE				Spi	ke Init (tØr	nolG 50 %QL	. Whactho	l: 1000 %L	
				Dup	be Init (tCh	nolG 50 %QL	Whact hol	: 1000 %L	

mint Date: 09/30/2016 9:16:03Ax

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Method Blank					
Blank ID: MB for HBN 17434 Blank Lab ID: 1353208	10 [VXX/29595]	Matrix	k: Water (Surfac	e, Eff., Ground)	
QC for Samples: 165399001, 1165399002, 116	5399005, 1165399006, 11	65399008			
Results by AK101		)			
<u>'arameter</u> Gasoline Range Organics	<u>Results</u> 0.0500U	LOQ/CL 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	
u <b>rrogates</b> Bromofluorobenzene (surr)	92.8	50-150		%	
atch Information					
Analytical Batch: VFC13305 Analytical Method: AK101 Instrument: Agilent 7890 PII Analyst: ST Analytical Date/Time: 9/20/2	5 D/FID 2016 12:00:00AM	Prep Ba Prep Me Prep Da Prep Init Prep Ex	tch: VXX29595 ethod: SW5030B te/Time: 9/19/20 tial Wt./Vol.: 5 ml tract Vol: 5 mL	16 6:00:00AM -	

Print Date: 09/30/2016 9:16:04AM



#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165399 [VXX29595] Blank Spike Lab ID: 1353209 Date Analyzed: 09/19/2016 23:22 Spike Duplicate ID: LCSD for HBN 1165399 [VXX29595] Spike Duplicate Lab ID: 1353210 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165399001, 1165399002, 1165399005, 1165399006, 1165399008

	F	Blank Spike	e (mg/L)	S	pike Duplic	cate (mg/L)			
Parameter	Spike	Result	Rec (%)	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Gasoline Range Organics	1.00	0.909	91	1.00	0.872	87	(60-120)	4.10	(< 20)
urrogates									
4-Bromofluorobenzene (surr)	0.0500	101	101	0.0500	92.5	93	(50-150)	9.00	
Batch Information Analytical Batch: VFC13305				Prep	Batch: V	XX29595			
Analytical Method: AK101				Prep	Method:	SW5030B			
Instrument: Agilent 7890 PID/	FID			Prep	Date/Tim	e: 09/19/201	6 06:00		
Analyst: ST				Spik	e Init Wt./\	/ol.: 1.00 mg	g/L Extract	/ol: 5 mL	
				Dup	e Init VVt./V	/ol.: 1.00 mg	g/L Extract V	ol: 5 mL	

Print Date: 09/30/2016 9:16:06AM



#### **Billable Matrix Spike Summary**

Original Sample ID: 1165399002 MS Sample ID: 1165399003 BMS MSD Sample ID: 1165399004 BMSD 
 Analysis Date:
 09/20/2016
 2:50

 Analysis Date:
 09/20/2016
 3:09

 Analysis Date:
 09/20/2016
 3:28

 Matrix:
 Water (Surface, Eff., Ground)

QC for Samples:

Results by AK101										
		Mat	rix Spike (r	mg/L)	Spike	Duplicate	e (mg/L)			
Parameter Gasoline Range Organics	<u>Sample</u> 0.0500U	<u>Spike</u> 1.00	<u>Result</u> 0.888	<u>Rec (%)</u> 89	<u>Spike</u> 1.00	<u>Result</u> 0.912	<u>Rec (%)</u> 91	<u>CL</u> 60-120	<u>RPD (%)</u> 2.70	<u>RPD CL</u> (< 20 )
Surrogates 4-Bromofluorobenzene (surr)		0.0500	0.0430	86	0.0500	0.0463	93	50-150	7.30	
Analytical Batch: VFC13305 Analytical Method: AK101 Instrument: Agilent 7890 PID Analyst: ST Analytical Date/Time: 9/20/20	/FID 016 3:09:0	DOAM		Prep Prep Prep Prep Prep	) Batch: V Method: ) Date/Tim ) Initial Wt. ) Extract V	XX29595 Volatile F e: 9/19/2( /Vol.: 5.0 ol: 5.00m	uels Extract 016 6:00:0 0mL IL	tion (W) IOAM		

Print Date: 09/30/2016 9:16:07AM

Method Blank					
Blank ID: MB for HB Blank ] aL ID: 13b19	Blank ID: MB for HBN 1743108 [S T/ 5/07342 Blank ] aL ID: 13b190Q		(V.Sax6rupcn1	faE6i,ffGd rocn) R	
Cm for pae sl6, : 11t b399001i 11t b399	0008i 11t b39900bi 11t b39900t				
y 6, clx, LU <b>SM21 21</b>	30B				
<u>garae 6x6r</u> / crLVJWAU	<u>y 6, clx</u> 0œ000	<u>]PC5m]</u> 0 <b>(3</b> 00	<u>D]</u> 0 <b>3</b> 00	<u>On\\/</u> N/ O	
Batch Information					
TnalUNABal BaxEA: S TnalUNABal M6xAo): In, xrce 6nx / crLNN TnalU,x hB. TnalUNABal Dax65 No	ST/10734 pM818130B Me∕6x6r /6:95135801t b:00:00gM				

grWhkDax6: 095305801t 9:1t:0QTM

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 SG USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16 **Duplicate Sample Summary** Original Sample ID: 116539900u 7 nalAyiy Da2e: 09s13su016 1/:00 Dcplit a2e Sample ID: 1165399016 4 a2tiM x a2er W3cr(at ef , ((E. rGcnod b Q (Gr Sampley: ) eycl2y RA SM21 2130B Dcplit a2e <u>) CD WP d</u> ) CD QU Original Nni2y %74, 19Ð vcrRioi2A 1T₽ %vN 5E.0 W∜ u0 d **Batch Information** 7 nalA2t al Ba2t h: x 7 v 10/ 3L 7 nalA2t al 4 e2hGo: S4 u1 u130B Iny2cmen2 vcrRioime2er 7 nalAy2 KB,

Crin2Da2e: 09s30su016 9:16:1074

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u00 x ey2CG22er Dri8e 7 nt hGragef 7 K 9551T t 90/ เ56uf£i3L3 f 90/ 156115301 www.feyfeygyf£ Gm

<b>SGS</b>				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
Blank Spike ID: LCS for HBN Blank Spike Lab ID: 1351909 Date Analyzed: 09/13/2016	N 1165399 [ 9 6 17:00	WAT1073	4]	
QC for Samples: 1165399	001, 116539	9002, 1165	5399005, 11653	Matrix: Water (Surface, Eff., Ground) 399006
			_	
Results by SM21 2130B				
Deremeter	Caika	Blank Spike	e (NTU)	
urbidity	<u>opike</u> 10	<u>Result</u> 11.0	<u>Rec (%)</u> 110	(90-110)
Batch Information				
Analytical Batch: WAT10734 Analytical Method: SM21 213 Instrument: Turbidimeter Analyst: KBE	0B			Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 10 NTU Extract Vol: 1 mL Dupe Init Wt./Vol.: Extract Vol:
nt Date: 09/30/2016 9:16:11AM				
SGS North America	Inc. 1 90	West Pott 7.562.2343	er Drive Ancho 3 f 907.561.530	rage, AK 95518 1 www.us.sgs.com

Member of SGS Group 86 of 117

GS				Confident LNG Facilities Groundwater Qual Sampling and Testing Report - Event USAL-FG-GRZZZ-00-002016-004 Rev. 16-Dec-	ial ity t 2 . 0 16
lank Spike Summary					
llank Spike ID: LCS for HB llank Spike Lab ID: 135191 Date Analyzed: 09/13/2016	N 1165399 [ 1 6 17:00	WAT1073	34]		
C for Samples: 116539	9001 116539	9002 116	5399005 11653	Matrix: Water (Surface, Eff., Ground)	
		,			
Results by SM21 2130B					
	I	Blank Spike	e (NTU)		
<u>'arameter</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	
urbidity	10	11.0	110	(90-110)	
Batch Information					
Analytical Batch: WAT10734	200			Prep Batch: Prop Mathed:	
Analytical Method: SM21 213 Instrument: Turbidimeter	30B			Prep Date/Time:	
Analyst: KBE				Spike Init Wt./Vol.: 10 NTU Extract Vol: 1 mL	
nt Date: 09/30/2016 0.16.114M					
N 246. 00/00/2010 0.10.11AM	1 200	West Dott	er Drive Anchor	rade AK 95518	
SGS North America	t 90	7.562.234	3 <b>f</b> 907.561.530	1 www.us.sgs.com	



Method Blank				
Blank ID: MB for HBN 1743549 [WFI/2502] Blank Lab ID: 1353714 QC for Samples: 1165399001, 1165399002, 1165399005, 1165399006		Matri	x: Water (Surfac	ce, Eff., Ground)
Results by SM21 4500NC	)3-F			
Parameter	<u>Results</u>	LOQ/CL	DL	<u>Units</u>
Nitrate-N	0.0500U	0.100	0.0300	mg/L
Nitrite-N Total Nitrate/Nitrite-N	0.0500U 0.0500U	0.100 0.100	0.0300 0.0300	mg/L mg/L
Batch Information				
Analytical Batch: WFI25 Analytical Method: SM2 Instrument: Astoria segn Analyst: NEG Analytical Date/Time: 9/	02 I 4500NO3-F hented flow I3/2016 4:46:03PM			

Print Date: 09/30/2016 9:16:12AM



#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165399 [WFI2502] Blank Spike Lab ID: 1353713 Date Analyzed: 09/13/2016 16:44

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165399001, 1165399002, 1165399005, 1165399006

# Results by SM21 4500NO3-F Blank Spike (mg/L)

Spike	<u>Result</u>	<u>Rec (%)</u>	<u>CL</u>
2.5	2.68	107	(70-130)
2.5	2.43	97	(90-110)
5	5.11	102	(90-110)
	<u>Spike</u> 2.5 2.5 5	Spike         Result           2.5         2.68           2.5         2.43           5         5.11	Spike         Result         Rec (%)           2.5         2.68         107           2.5         2.43         97           5         5.11         102

# **Batch Information**

Analytical Batch: WFI2502 Analytical Method: SM21 4500NO3-F Instrument: Astoria segmented flow Analyst: NEG Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 2.5 mg/L Extract Vol: 5 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 09/30/2016 9:16:13AM



QC for Samples:

## Billable Matrix Spike Summary

Original Sample ID: 1165399002 MS Sample ID: 1165399003 BMS MSD Sample ID: 1165399004 BMSD Analysis Date: 09/13/2016 16:53 Analysis Date: 09/13/2016 16:54 Analysis Date: 09/13/2016 16:56 Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500NO3-F Matrix Spike (mg/L) Spike Duplicate (mg/L) Parameter Sample Spike Result Rec (%) <u>Spike</u> Result Rec (%) RPD (%) RPD CL CL Nitrate-N 0.0500U 2.50 2.81 113 2.50 2.69 107 70-130 4.60 (< 25) Nitrite-N 0.0500U 2.50 2.47 99 2.50 2.43 97 90-110 1.60 (< 25) **Batch Information** 

Analytical Batch: WFI2502 Analytical Method: SM21 4500NO3-F Instrument: Astoria segmented flow Analyst: NEG Analytical Date/Time: 9/13/2016 4:54:48PM Prep Batch: Prep Method: Prep Date/Time: Prep Initial Wt./Vol.: 5.00mL Prep Extract Vol: 5.00mL

Print Date: 09/30/2016 9:16:15AM

Duplicate Sample Summary           Original Sample ID: 1165286001           Duplicate Sample ID: 1352151           QC for Samples:           1165399001, 1165399002, 1165399005, 1165399000			Analysis Date: 09/14/2016 13:12 Matrix: Drinking Water				
		399006					
► Results by <b>SM21 4500-H</b>	I B						
NAME	<u>Original</u>	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL		
рН	7.40	7.40	pH units	0.00	(< 5)		
Batch Information							
Analytical Batch: W11451 Analytical Method: SM2 Instrument: Titration Analyst: KBE	0 1 4500-Н В						

Print Date: 09/30/2016 9:16:17AM

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· · · ·					
Duplicate Sample Summ	ary				
Original Sample ID: 1165 Duplicate Sample ID: 116	Original Sample ID: 1165399002 Duplicate Sample ID: 1165399016			9/14/2016 14:06 urface, Eff., Groui	nd)
QC for Samples:					
Peculte by SM21 4500-H	R				
NAME	Original	<u>Duplicate</u>	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
рН	8.50	8.50	pH units	0.00	(< 5)
Batch Information					
Analytical Batch: WTI4510	)				
Analytical Method: SM21	4500-H B				
Analyst: KBE					
Print Date: 09/30/2016 9:16:17A	M				
	200 West F	Potter Drive Anchorage	VK 05518		

<b>SGS</b>			Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
3lank Spike Summary			
Blank Spike ID: LCS for F Blank Spike Lab ID: 1352 Date Analyzed: 09/14/20	HBN 1165399 [WTI4 2148 016 10:32	510]	Matrix: Water (Curface Eff. Cround)
QC for Samples: 1165	399001, 1165399002,	1165399005, 1165	399006
Results by SM21 4500-H	В		
	Blank Sp	pike (pH units)	
Parameter DH	Spike Res 7 7.03	<u>sult Rec (%)</u> 3 100	<u>CL</u> ( 99-101 )
Batch Information			
Analytical Batch: WTI4510 Analytical Method: SM21 Instrument: Titration Analyst: KBE	0 4500-Н В		Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 7 pH units Extract Vol: 1 mL Dupe Init Wt./Vol.: Extract Vol:
nt Date: 09/30/2016 9:16:18AN	N		
	200 West	Pottor Drive Ancho	10000 AK 05519

SGS	-		S USA	Campling and Testing Re AL-FG-GRZZZ-00-0020	port - Event 2 16-004 Rev. 0 16-Dec-16
Method Blank					
Blank ID: MB for HB Blank 5a2 ID: 13T] 1	N 174317408 [IS4T11/ LT	Matrix	k: 8 atpr VQ( rl	faup, cffĘ. ro(nGd	
b 9 for QaCmlpe: 11LT3ss661, 11LT3ss	:66] , 11LT3ss66T, 11LT3ss66L				
) pe( Ite 2R <b>SM21 23</b>	20B				
<u>OaraC ptpr</u> PlkalinitR	<u>) pe( Ite</u> TE66y	<u>5Ub S95</u> 16E6	<u>D5</u> 3⊟6	<u>ynite</u> CgS5	
Batch Information PnalRiual BatuA: & PnalRiual MptAoG Inetr(Cpnt: [itration PnalRet: hBc PnalRiual Datp\$ iC	s [ [4T11 QM] 1 ] 3] 6B on :p: sSI4\$;61L 11:3L:T] PM				

Orint Datp: 6s\$6\$61L s:1L:]6PM

Q. Q NortA PC priua InuE

Method Blank Blank ID: MB for HBN 1743174 08 [ ISIT11/ Blank 5a2 ID: 13T] 176					
		Matrix: 8 atpr W2( rfaup, cffE, ro( nGd			
b 9 for QaC mpe: 11LT3ss661, 11LT3s	s66] , 11LT3ss66T, 11LT3ss66L				
) pe( Ite 2R <b>SM21 2</b> 3	320B				
<u>OaraC ptpr</u> PlkalinitR	<u>) pe(Ite</u> TE66y	<u>5Ub S95</u> 16B6	<u>D5</u> 3₫6	<u>y nite</u> CgS5	
Batch Information PnalRiual BatuA: 4 PnalRiual MptAoG Inetr( Cpnt: [ itrati PnalRet: hBc PnalRiual Datp\$ i0	B [I4T11 QM]1]3]6B on Cp: sSI4\$61L 4:17:6LOM				

Orint Datp: 6s\$6\$61L s:1L:]6PM

Q. Q NortA PC priua InuE

SGS
# **Duplicate Sample Summary** Original Sample ID: 1165359001 Analysis Date: 09/14/2016 13:41 Duplicate Sample ID: 1352168 Matrix: Drinking Water QC for Samples: 1165399001, 1165399002, 1165399005, 1165399006 Results by SM21 2320B Duplicate Units RPD (%) RPD CL Original NAME Alkalinity 121 121 0.02 (< 25) mg/L **Batch Information** Analytical Batch: WTI4511 Analytical Method: SM21 2320B Instrument: Titration Analyst: KBE

Print Date: 09/30/2016 9:16:21AM

SGS North America Inc.

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# **Duplicate Sample Summary** Original Sample ID: 1165419001 Analysis Date: 09/14/2016 17:00 Duplicate Sample ID: 1352169 Matrix: Drinking Water QC for Samples: 1165399001, 1165399002, 1165399005, 1165399006 Results by SM21 2320B Duplicate Units RPD (%) RPD CL Original NAME Alkalinity 111 110 mg/L 0.17 (< 25) **Batch Information** Analytical Batch: WTI4511 Analytical Method: SM21 2320B Instrument: Titration Analyst: KBE

Print Date: 09/30/2016 9:16:21AM

SGS North America Inc.

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Duplicate Sample Summary									
Original Sample ID: 11653990 Duplicate Sample ID: 1165399 QC for Samples:	002 9016		Analysis Date: 09/14/2016 14:06 Matrix: Water (Surface, Eff., Ground)						
Results by SM21 2320B									
NAME	Original	Duplicate	Units	<u>RPD (%)</u>	RPD CL				
Alkalinity	50.2	50.3	mg/L	0.12	(< 25 )				
Batch Information Analytical Batch: WTI4511 Analytical Method: SM21 2320 Instrument: Titration Analyst: KBE	В								
Print Date: 09/30/2016 9:16:21AM									

SGS				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
Blank Spike ID: LCS for HBN Blank Spike La] ID: 135b166 Daæ 8nalt Æy: z9d14dbz16	1165399 [V 11:45	VTI45110		
QC for SaP pleR 1165399z	z1c1165399	zzbc1165	399zz5c11653	u a2tiM Wa2er xSsrfa(ec, ffE: rosnyG 99zz6
/e₨læ]t <b>SM21 2320B</b>				
	BI	ank Spike	xP %dLG	
<u>) araP e2er</u> 8 Ikalini <b>2</b>	<u>Spike</u> b5z	<u>/ eRsl2</u> b5b	<u>/ e( xmG</u> 1z1	<u>CL</u> x75-115 G
Batch Information				
8 nalt 2( al Ba2 h: WTI4511 8 nalt 2( al u e2hoy: SM21 2320 InR2sP en2 Titration 8 nalt R2 KBE	В			)repBa2(h: )repue2noy: )repDa2edTiPe: SpikeIni2W26dVolEb5zP%aL,M2ra(2Vol:5zPL DspeIni2W26dVolE,M2ra(2Vol:
n2Daæ: z9&zdz16 9:16:bb8u	bzz \	WeR2) 022	er Drive 8n( hor	a%ec8a 95517
S. S Nor2h 8P eri(a Ir	n(E t 9zK	E56bE5343	f 9zKE561E53z	1 www.isRee%RetoP

Blank Spike SUmmary Blank Spike ID: LCS for HBN 1165399 [WTI45110 Blank Spike JD: L3551K1 Daže 8nalt Aey: z9d4dbz16 16:b5 u ažiM Wažer xSsrfa(ec, ffE. rosnyG QC for SaP pieR 1165399zz1c1165399zz5c1165399zz5c1165399zz6 / efelR] t SM2123208 Blank Spike XP %LG <u>JaraPežer</u> Spike <u>refer felg fel xmG</u> CL Blank Information 8 nalt 2(a) Ba2(h: WTV4511 8 nalt 2(a	idential Quality Event 2 Rev. 0 Dec-16	Confider LNG Facilities Groundwater Qua Sampling and Testing Report - Eve USAL-FG-GRZZZ-00-002016-004 Re 16-Dec				GS	<b>5G</b>
Blank Spike ID: LCS for HBN 1165399 (WTI45110 Blank Spike II ID: 13501K1 Daž 8 nati Agy: z9d4dbz16 16:53 u a2IM Wa2r xSsrfa(ec, ffE. rosnyG Cf or SaPpleR 1165399zz101165399zz650165399zz6 / eFei/ZI I SM212320B Blank Spike XP %LG JaraP @2r Spike (eFei/Z) (efei/Z) (efei/Z) (efei/Z) (ffE. rosnyG) Blank Spike XP %LG JaraP @2r Spike (eFei/Z) (efei/Z) (efei/Z) (ffE. rosnyG) Blank Spike XP %LG JaraP @2r Spike (eFei/Z) (efei/Z) (ffE. rosnyG) (ffE. rosnyG) Blank Spike XP %LG JaraP @2r Spike (efei/Z) (efei/Z) (ffE. rosnyG) (ffE. rosnyG) Blank Spike XP %LG JaraP @2r Spike (efei/Z) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) Blank Spike XP %LG JaraP @2r Spike (efei/Z) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) Blank Spike XP %LG JaraP @2r Spike (efei/Z) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE. rosnyG) (ffE.						Spike Summary	Blank Spi
u ažiM Wažr xŠsrfa(ec, ff.E. rosnyG QC for SAP pleR 1165399zzto 1165399zz6c 1165399zz6c 1165399zz6 (eKi/k] 1 SM21 2320B Blank Spike xP %LG Blank Spike xP %LG Blank Spike xP %LG Blank Spike xP %LG Blank Spike xP %LG (af Ba2 fr. WTI4511 Bnait f2 (al Ba2 fr. WTI4511 Bnait f2 (al Ba2 fr. WTI4511 Bnait f2 (KBE) ) rep Ba2 fr: ) rep Da2 dTiPe: Spike Ini2W22VoIE b5c P %L , Ma2 (2VoI: 5c P L Dspe Ini2W22VoIE 5c P %L , Ma2 (2VoI: 5c P L Dspe Ini2W22VoIE 5c P %L , Ma2 (2VoI: 5c P L			)	WTI45110	l 1165399 l 16:b5	Spike ID: LCS for HBN Spike La] ID: 135b1K1 nalt Aey: z9d14dbz16	Blank Spil Blank Spil Da2e 8 nal
QC for SAP pleR       11853992z1c11853992z5c11853992z5c11853992z5c         / eFci/R] 1 SM21 2320B       Blank Spike P*94.G         AtaP edr       Spix       / efci/R]       Cf         Bkalinia       D5b       / efci/R]       (efci/R)       Cf         Bkalinia       D5b       / fci/R       (efci/R)       Cf         Bkalinia       D5b       / fci/R       (efci/R)       (fci/R)         Brait 2(al bc2(h: WTH451)       ) rep Ba2(h: )       ) rep U a5ny:       ) rep U a5ny:       ) rep Da2dTiPe:         Brait 2(al bc2(h: WTH451)       ) analt 72 KBE       ) rep U a5ny:       D2ddTiPe:       D2ddTiPe:         Brait 2(al bc2(h: WTH451)       ) rep U a5ny:       D2ddTiPe:       D2ddTiPe:       D2ddTiPe:         Brait 2(al bc2(h: WTH451)       ) rep U a5ny:       D2ddTiPe:       D2ddTiPe:       D2ddTiPe:         Brait 2(al bc2(h: WTH451)       D2 do 10/De:       D2ddTiPe:       D2ddTiPe:       D2ddTiPe:         Brait 2(bc2(h: WTH451)       D2 do 10/De:       D2 do 10/De:       D2 do 10/De:       D2 do 10/De:         Brait 2(bc2(h: WTH451)       D2 do 10/De:       D2 do 10/De:       D2 do 10/De:       D2 do 10/De:         Brait 2(bc2(h: WTH451)       D2 do 10/De:       D2 do 10/De:       D2 do 10/De:       D2 do 10/De:		u a2tiM Wa2er xSsrfa(ec, ffEc. rosnyG					
/ eFsi/Rj t SM212320B         Bark Spike XP %4.G         Bard Péde       Spike (eFsi/2) (et xm3       CL         Bikalinik       b5z       b5b       1z1       x75-115 G         Batch Information       ) rep Ba2(h:       ) rep U e3hop:       ) rep U e3hop:         Infait (2) all 0 a3hop: SM21 2320B       ) rep U a3hop:       ) rep U a3hop:       ) rep U a3hop:         Infait 72 KBE       ) rep U a3hop:       Spike Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge Ini2W28HolE b5z P %L , M8a(2Vol: 5z PL D5ge InizW28HolE b5z P %L , M8a(2Vol: 5z PL D5ge InizW28HolE b5z P %L , M8a(2Vol: 5z PL D5ge InizW28HolE b5z P %L , M8a(2Vol: 5z PL D5ge InizW28HolE b5z P %L , M8a(2Vol: 5z PL D5ge InizW28HolE b5z P %L , M8a(2Vol: 5z PL D5ge InizW28HolE b5z P %L , M8a(2Vol: 5z PL D5ge InizW28HolE b5z P %L , M8a(2Vol: 5z PL D5ge InizW28HolE b5z P %L , M8a(2Vol: 5z PL D5ge InizW28HolE b5z P %L , M8a(2Vol: 5z PL D5ge InizW28HolE b5z P %L , M8a(2Vol: 5z PL D5ge InizW28HolE b5z P %L , M8a(2Vol: 5z PL D5ge InizW28HolE b5z P %L , M8a(2Vol: 5z PL D5ge InizW28HoLE b5z P %L , M8a(2Vol: 5z PL D		399zz6	399zz5c1165	9zzbc1165	zz1c116539	SaP pleR 1165399zz	QC for SaF
Blank Spike %P%LG         JaraPeZer       Spike       / (e_l_xn_G)       CL         Bikalini2       b5z       b5b       1z1       x75-115 G         Batch Information						æ]t SM21 2320B	/eRsl2R]
LaraPeZer       Stike       / efkig       / ef unG       CL         Sikalini2       b5z       b5b       1z1       x75-115 G         Batch Information <ul> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Intra Pezer</li> <li>Int</li></ul>			xP%dLG	Blank Spike			
Bikalini2         b5         b5         121         x75-115 G           Batch Information <ul></ul>		<u>CL</u>	<u>/ e(xm</u> G	<u>/ eRsl2</u>	<u>Spike</u>	e2er	<u>) araP e2er</u>
Batch Information <ul> <li></li></ul>		x75-115 G	1z1	b5b	b5z	2	3 Ikalini 2
8 nait 2(al Ba2(h: WTI4511       ) rep Ba2(h:       ) rep U s2hoy:         InR3:Pen Titration       ) rep U s2hoy:       ) rep Da20fiPe:         Shait R2 KBE       Spike InZW28/OIE b52 P%L , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28/OIE , M2a(2Vol: 52 PL Dspe InZW28						Information	Batch Inf
Analt Z(a) Lu ežnoy:       ) rep u ežnoy:         InR3:sPenz Titration       ) rep u ežnoy:         Spike In/2W28/OIE b5z P.%L       , Mła(2Vol: 5z P.L         Dspe In/2W28/OIE       , Mła(2Vol: 5z P.L         Dspe In/2W28/OIE       , Mła(2Vol: 5z P.L		) rep BaҲ h:				t 2( al Ba2 h: WTI4511	8 nalt 2( a
Spike Ini2W28VoIE b5z P %L , M2a(2Voi: 5z P L Dspe Ini2W28VoIE , M2a(2Voi:		) rep u e2hoy: ) rep Da2edTiP e:			0B	t 2(al u e2hoy: SM21 2320E	8 nalt 2(a
Uspe InizVVddVole , Mče(zVol:		Spike Ini2W2E0/oIE b5z P%L , Mara(2Vol: 5z PL				t R2 KBE	8 nalt R2
n2Daæ: z9&zdz16 9:16:bb8u						: z9&zdz16 9:16:bb8u	n2Da2e: z9
S. S Nor2n 8Peri(a In(E t 92KE56bb343 f 92KE561E5321 www.sRR?/AFt oP		'a%ec8g 95517 1 www.5s <b>ਸ਼ਿਟ∜⊮ਦਿ</b> oP	er Drive 8n(ho 8 f 9zKE561E537	:WeR2) o22 2KE56bEb34:	In(E bzz	S. S Nor2h 8P eri(a In	

Wethou Blank								
Blank ID: MB for HB Blank Lab ID: 13527	N 1743316 [WXX/11624] 78	Matrix: Water (Surface, Eff., Ground)						
QC for Samples: 1165399001, 1165399	002, 1165399005, 1165399006							
Results by EPA 300.	0							
Parameter	Results	LOQ/CL	DL	<u>Units</u>				
Chloride	0.100U	0.200	0.0620	mg/L				
Fluoride	0.100U	0.200	0.0620	mg/L				
Sulfate	0.1000	0.200	0.0620	mg/∟				
atch Information								
Analytical Batch: W	/IC5565	Prep Ba	atch: WXX11624					
Analytical Method:	EPA 300.0	Prep M	ethod: METHOD					
	m 733 DX2	Prep Date/Time: 9/16/2016 1:52:00PM						
Instrument: Metroh		Prep Initial Wt./Vol.: 10 mL						

Print Date: 09/30/2016 9:16:23AM



### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165399 [WXX11624] Blank Spike Lab ID: 1352779 Date Analyzed: 09/17/2016 06:52

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165399001, 1165399002, 1165399005, 1165399006

Results by EPA 300.0 Blank Spike (mg/L) Parameter <u>CL</u> <u>Spike</u> Result Rec (%) Chloride (90-110) 5 5.11 102 Fluoride 5 5.25 105 (90-110) Sulfate 5 5.16 103 (90-110) **Batch Information** Analytical Batch: WIC5565 Prep Batch: WXX11624 Analytical Method: EPA 300.0 Prep Method: METHOD Instrument: Metrohm 733 DX2 Prep Date/Time: 09/16/2016 13:52 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL Analyst: ACF Dupe Init Wt./Vol.: Extract Vol:

Print Date: 09/30/2016 9:16:24AM



### Matrix Spike Summary

Original Sample ID: 1352780 MS Sample ID: 1352781 MS MSD Sample ID: 1352782 MSD

Analysis Date:	09/17/2016	7:15
Analysis Date:	09/17/2016	7:37
Analysis Date:	09/17/2016	7:59
Matrix: Water	(Surface, Eff.,	Ground

QC for Samples: 1165399001, 1165399002, 1165399005, 1165399006

Results by EPA 300.0										
		Mat	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Chloride	4.71	5.00	9.93	104	5.00	10.0	106	90-110	0.98	(< 15)
Fluoride	0.134J	5.00	5.24	102	5.00	5.27	103	90-110	0.67	(< 15)
Sulfate	0.558	5.00	5.78	104	5.00	5.83	106	90-110	0.90	(< 15 )
Batch Information										

Analytical Batch: WIC5565 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Analytical Date/Time: 9/17/2016 7:37:32AM Prep Batch: WXX11624 Prep Method: EPA 300.0 Extraction Waters/Liquids Prep Date/Time: 9/16/2016 1:52:00PM Prep Initial Wt./Vol.: 10.00mL Prep Extract Vol: 10.00mL

Print Date: 09/30/2016 9:16:25AM



### Billable Matrix Spike Summary

Original Sample ID: 1165399002 MS Sample ID: 1165399003 BMS MSD Sample ID: 1165399004 BMSD

QC for Samples:

Analysis Date: 09/17/2016 7:15 Analysis Date: 09/17/2016 7:37 Analysis Date: 09/17/2016 7:59 Matrix: Water (Surface, Eff., Ground)

Results by EPA 300.0			_							
		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
Parameter	Sample	Spike	Result	<u>Rec (%)</u>	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Chloride	4.71	5.00	9.93	104	5.00	10.0	106	90-110	0.98	(< 15)
Fluoride	0.134J	5.00	5.24	102	5.00	5.27	103	90-110	0.67	(< 15)
Sulfate	0.558	5.00	5.78	104	5.00	5.83	106	90-110	0.90	(< 15)

### Batch Information

Analytical Batch: WIC5565 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Analytical Date/Time: 9/17/2016 7:37:32AM Prep Batch: WXX11624 Prep Method: EPA 300.0 Extraction Waters/Liquids Prep Date/Time: 9/16/2016 1:52:00PM Prep Initial Wt./Vol.: 10.00mL Prep Extract Vol: 10.00mL

Print Date: 09/30/2016 9:16:25AM

SGS North America Inc.

Method Blank								
Blank ID: MB for HBN 174 Blank Lab ID: 1353723	3634 [XXX/36361]	Matrix: Water (Surface, Eff., Ground)						
QC for Samples: 1165399001, 1165399002, 1	165399005, 1165399006							
Results by <b>AK102</b>								
Parameter	Results	LOQ/CL	DL	<u>Units</u>				
Diesel Range Organics	0.300U	0.600	0.180	mg/L				
Surrogates								
5a Androstane (surr)	88.5	60-120		%				
Batch Information								
Analytical Batch: XFC128	372	Prep Ba	tch: XXX36361					
Analytical Method: AK102	2	Prep Me	ethod: SW35200					
Analyst NRO	3 K	Prep Da Prep Ini	tial Wt /Vol · 250	016 8:14:20AM Cml				
Analytical Date/Time: 9/2	2/2016 10:08:00PM	Prep Ex	tract Vol: 1 mL					

Print Date: 09/30/2016 9:16:26AM

SGS North America Inc.

SGS



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1165399 [VVV36361X Blank Spike La2 ID: 1353] b0 Date Analyzed: /9ubub/16 bb:19 Spike DcpliRate ID: LCSD for HBN 1165399 [VVV36361X Spike DcpliRate La2 ID: 1353] b5 x atriW ( ater ,ScrfaReE. ff () rocndP

8 C for Sa%pleM

1165399/ / 1E1165399/ / bE1165399/ / 5E1165399/ / 6

seMcltM2y AK102			_						
		Blank Spike	e,%QLP	5	Spike Dcplil	Rate ,%QLP			
mara%eter	<u>Spike</u>	<u>s eMtlt</u>	<u>s eR,g P</u>	Spike	<u>s eMclt</u>	<u>s eR,g P</u>	<u>CL</u>	<u>s mD,g P</u>	<u>s mD CL</u>
DieMel s an Qe Or Qani RM	b/	173	9b	b/	1] G	79	, ] 5-1b5 P	bĢ/	,< b/ P
Surrogates									
5a AndroMane ,McrrP	/ @	90Ф	95	/ @	91 <b>©</b>	91	, 6/-1b/ P	30)/	
Batch Information									
AnalytiRal BatR4: <b>XFC12872</b> AnalytiRal x et4od: <b>AK102</b>				mre mre	p BatR4: X p x et4od:	XX36361 SW3520C			
InMrc%ent: Agilent 7890B R				mre	p Dateuhi%	e: 09/22/201	6 08:14		
AnalyM: NRO				Spil Dor	ke Init (tGi be Init (tGi	olg b/ %QJ olg b/ %QI	L. WhaRtTo WhaRtTol	I: 1 %L : 1 %L	

mint Date: / 9u8/ub/ 16 9:16:b7Ax

S) S Nort4 A%eriRa InRG



### Billable Matrix Spike Summary

Original Sample ID: 1135277880 MS Sample ID: 1135277882 AMS MSD Sample ID: 113527788y AMSD s nalt 9i9 Da/e: 8760260813 1:85 s nalt 9i9 Da/e: 8760260813 1:15 s nalt 9i9 Da/e: 8760260813 1:03 Ma/rix: Wa/er (Surface, Eff., Ground)

QC for Sample9:

Re9ul/9 bt AK102			_							
		Ma	/rix Spike (	mg6L)	Spike	e Duplica/e	e (mg6L)			
<u>Parame/er</u> Die9el Range Organic9	<u>Sample</u> 8.02y4	<u>Spike</u> 1h.5	<u>Re9ul/</u> 1y.y	<u>Rec (%)</u> 	<u>Spike</u> 1h.7	<u>Re9ul/</u> 13.8	<u>Rec (%)</u> hy	<u>CL</u> -5⊲05	<u>RPD (%)</u> 18.y8	<u>RPD CL</u> (F 28 )
Surrogates 5a s ndro9/ane (9urr)		8.2-8	.211	hy	8.2	8.2y8	78	58⊲58	h 8	
Batch Information s nalt /ical Aa/cJ: BvC10h- 0 s nalt /ical Me/Jod: s q180 In9/rumen/: s gilen/ - h78A R s nalt 9/: KRO s nalt 9/: KRO s nalt /ical Da/e6Nime: 7602608	313 1:15:88	3s M		Pre Pre Pre Pre	p Aa/cJ:E p Me/Jod: p Da/eðNin p Ini/ial W/ p Ex/rac/ \	3BB23231 Cn/.LiX& ne: 760060 /.6/ol.: 0-8 /ol: 1.88m	LiX Ex/. for s 813 h:1y:0 8.88mL hL	s q 18062 Lo 98 s M	oT Vol	

Prin/ Da/e: 8762860813 7:13:07s M

SGS Kor/J s merica Inc.

088 We9/ Po//er Driwe s ncJorage, s q 7551h t 78-.530.02y2 f 78-.531.5281 TTT.u9.9g9.com

Method Blank					
Blank ID: MB for HBN 1743 Blank Lab ID: 1353723	3634 [XXX/36361]	Matrix	x: Water (Surf	ace, Eff., Ground)	
QC for Samples: 1165399001, 1165399002, 17	165399005, 1165399006				
Results by AK103					
Parameter	Results	LOQ/CL	DL	<u>Units</u>	
Residual Range Organics	0.250U	0.500	0.150	mg/L	
Surrogates					
n&riacontane&l62 (surr)	<b>%</b> 4.7	608120		-	
Batch Information					
h nalytical BatcF: XKC12% h nalytical MetFod: hT103 Instrument: hgilent 7%90E h nalyst: NRO h nalytical Date/Aime: 9/22	72 8 R 2/2016 10:0%00PM	Prep Ba Prep Me Prep Da Prep Init Prep Ex	tcF: XXX36367 etFod: SW3520 tte/Aime: 9/22/2 tial Wt./Vol.: 25 tract Vol: 1 mL	1 IC 2016 %14:20h M 50 mL	

Print Date: 09/30/2016 9:16:30h M

SGS NortF hmerica Inc.

SGS



### Blank Spike Summary

Blank Spike ID: LCS for HBN 1165399 [VVV36361X Blank Spike La2 ID: 1353] b0 Date Analyzed: /9ubub/16 bb:19 Spike DcpliRate ID: LCSD for HBN 1165399 [VVV36361X Spike DcpliRate La2 ID: 1353] b5 x atriW ( ater ,ScrfaReE. ff () rocndP

8 C for Sa%pleM 1165399

1165399/ / 1E1165399/ / bE1165399/ / 5E1165399/ / 6

s eMcltM2y AK102										
		Blank Spike	,%QLP	S	Spike Dcplif					
<u>mara%eter</u>	<u>Spike</u>	<u>s eMclt</u>	<u>s eR,g P</u>	<u>Spike</u>	<u>s eMclt</u>	<u>s eR,g P</u>	<u>CL</u>	<u>smD,gP</u>	<u>s mD CL</u>	
seMidcalsanQeOrQaniRM	b/	19 <b>G</b>	95	b/	1<∯	90	, 6/71b/P	1 <b>G</b> /	,- b/ P	
Surrogates										
n74riaRontane7d6b, McrrP	/ @	95 <b>3</b>	95	/ @	91 <b>5</b>	9b	, 6/71b/P	0G/		
Batch Information										
AnalytiRal BatRn: XFC18798 AnalytiRal x ethod: AK102 InMrc%ent: Agilent 97R0B N AnalyM: ON3			mrep BatRh: <b>XXX26261</b> mrep x ethod: <b>SW2580C</b> mrep Dateu4i%e: <b>0R/88/8016 07:14</b> Spike Init (to⊡rolG b/ %QL . WraRt Tol: 1 %L							
				Dcp	e Init (ton	olg b/ %QL	WraRt Tol	: 1 %L		

mint Date: / 9u8/ub/ 16 9:16:31Ax

S) S North A%eriRa InRG



### Billable Matrix Spike Summary

Original Sample ID: 1165399002 MS Sample ID: 1165399003 BMS MSD Sample ID: 1165399004 BMSD 
 Analysis Date:
 09/23/2016
 1:05

 Analysis Date:
 09/23/2016
 1:15

 Analysis Date:
 09/23/2016
 1:26

 Matrix:
 Water (Surface, Eff., Ground)

QC for Samples:

Results by AK103			_							
		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
<u>Parameter</u> Residual Range Organics	<u>Sample</u> 0.240U	<u>Spike</u> 18.5	<u>Result</u> 15.4	<u>Rec (%)</u> 83	<u>Spike</u> 18.9	<u>Result</u> 17.1	<u>Rec (%)</u> 91	<u>CL</u> 60-140	<u>RPD (%)</u> 10.00	<u>RPD CL</u> (< 30)
Surrogates										
n-Triacontane-d62 (surr)		0.370	.314	85	0.377	0.341	90	50-150	8.10	
Batch Information Analytical Batch: XFC12872 Analytical Method: AK103 Instrument: Agilent 7890B R Analyst: NRO Analytical Date/Time: 9/23/20	016 1:15	::00AM		Preg Preg Preg Preg Preg	D Batch: > D Method: D Date/Tin D Initial Wt D Extract \	(XX36361 Cnt. Liq/L ne: 9/22/2 t./Vol.: 270 /ol: 1.00m	.iq Ext. for <i>A</i> 016 8:14:2 0.00mL nL	AK102/3 Lo 20AM	ow Vol	

Print Date: 09/30/2016 9:16:32AM

SLR International SLR Internat
SLR International SLR International SLR International SLR International SLR International Kenai Wells - Justrant Project #: 105.0 Kenai Wells - Justrant P
SLR International sLR International sLR International Jason Gray Jason Gray Jaray Frojec Kenai Wells - Jary Projec Kenai Wells - Jary Projec Event A 2 Jason Gray Jaray Jason Gray Jaray SLR International P.O. SLR y Jaray Jaray Stray Jaray Jaray Jaray Stray Jaray Jaray Stray Jaray Jaray Jaray Stray Jaray Jaray Jaray Jaray Stray Jaray Jaray Projec Stray Jaray Jaray Jaray Projec Jaray Jaray Jaray Projec Jaray Jaray Jaray Projec Jaray Jaray Jaray Projec Jaray Jaray

F083-Kit_Request_and_COC_Templates-Blank Revised 2013-03-24

AIRPORT OF DEPARTURE ENA 09/13/16 07:51	095166	Confidential LNG Facilities Groundwater Quality 808 7135470/ing and Testing Report - Event 2Frgt
FUGRO KYLE JOHNSON	SHIPPER'S ACCOUNT NUMBER	NOT AIR WAYBILL (AIR CONSIGNMENT NOTE) (AIR CONSIGNMENT NOTE)
KENAI AK CONSIGNEE'S NAME, ADDRESS & PHONE C SGS JUSTIN NELSON	5208081220 ONSIGNEE'S ACCOUNT NUMBER	It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT AS LISTED IN THE COMPANIES TARIFFS. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIERS' LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charge if required.
200 WEST POTTER RD ANCHORAGE AK 99518	9075503205	Received in Good Condition PlaceDate TO EXPEDITE MOVEMENT, SHIPMENT MAY BE DIVERTED TO MOTOR OR OTHER CARRIER AS PER TARIFF RULE UNLESS SHIPPER GIVES OTHER INSTRUCTION HEREON
		ALSO NOTIFY NAME & ADDRESS
AGENT'S IATA CODE ACCOUNT NO.		ACCOUNTING INFORMATION 7145141
AIRPORT OF DEPARTURE Declared Value Kenai \$ 0.00	Insured Amount \$ 0.00	– Card VI 0927 Exp 0619
AIRPORT OF DESTINATION Anchorage	IE N II L MATERIAL CONTRACT CONTRACTOR OF A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A CONTRACTOR A	COMMENTS NOA MIKE LIGHT 1:00PM 9/13 TW
Pieces Welsh ib Commodity Chargeable We	night Rate/Charge	Total Nature and Quantity of Goods
4 145 PREPAID WEIGHT CHARGE COLLECT		\$53.65
\$53.65	AMOUNT	DESCRIPTION
\$0.00 FEDERAL EXCISE TAX \$3.35 TOTAL OTHER CHARGES DUE AGENT \$0.00		HAZMAT
TOTAL OTHER CHARGES DUE CARRIER           \$0.00           ITOTAL PREPAID           \$57.00	Shipper certifies that the COMPANIES TARIFFS, unless a higher value for part of the consignment of by air according to applie	particulars on the face hereof are correct, agrees to the CONDITIONS AS LISTED IN THE accepts that carrier's liability is limited as stated in the companies tariffs and accepts such value carriage is declared on the face hereof subject to an additional charge and that insofar as any contains restricted articles, such part is described by name and is in proper condition for carriage
ATION NUMBERS         FAIRBANKS - (907) 450-7250           ICHORAGE - (907) 243-2761         GALENA - (907) 656-1875           IAK - (907) 675-4572         KOTZEBUE - (907) 442-3020           RROW - (907) 552-5300         NOME - (907) 457-595           THEL - (907) 543-3825         ST. MARYS - (907) 438-2247           ADHORSE - (907) 643-3825         UNALAKLEET - (907) 624-3595           rinted at 13:00:37 on 9/13/2016 at ANC-FRT1 10.14.14.2	Air Transport Association Paid By Shipper Printed Name and Title	n's Restricted Articles Regulations.

**Customer Copy** 

2 4 4 B B D

1

## Nelson, Justin (Anchorage)

From: Sent: To: Subject: Attachments: Jason Gray [jgray@slrconsulting.com] Tuesday, September 13, 2016 9:39 AM Nelson, Justin (Anchorage) RE: Kenai Wells bottle order AWB8087137471.jpg; COC_APT.JPG; COC_TPW.JPG

Justin-

The latest Kenai Wells samples (collected by furgo) are ready to pick-up from RAVN as airbill 8087137471, please dispatch a courier to retrieve.

There are four SGS coolers total but note that we also have coolers on another air waybill going to TestAmerica, be sure not to retrieve those...

One potential issue I see, the sampler only prepared a single COC for all the "TPW" samples in multiple coolers. Custody documentation is a major issue for this project, please be sure that when SGS receives the samples, assign a cooler ID to each cooler of the COC (#1,#2, & #3 is fine) and be sure to note (either in the sample receipt records and/or directly on the COC) which of the samples were physically present in which of the coolers so that we can later definitively track the receipt temperature and trip blank association to samples. In the future sample deliveries, we will be sure to pack the coolers with 1 COC per cooler directly listing the cooler contents, should make all this go smoother.

Next project samples will be collected Friday 9/19 (by SLR) and will continue daily (through the weekend) for approx. 1 week, we need to make plans for the 48hr HT analysis.

Thanks-

From: Jason Gray Sent: September 08, 2016 5:07 PM To: 'Nelson, Justin (Anchorage)' Subject: RE: Kenai Wells bottle order

Attached this time ...

From: Jason Gray Sent: September 08, 2016 5:07 PM To: 'Nelson, Justin (Anchorage)' Subject: RE: Kenai Wells bottle order

Justin-

Next of the Furgo/Kenai bottle orders is attached, all water samples, no soil.

Would it be possible to have this ready for pickup on Friday by 3:00? Coolers need to be packaged for air shipment...

There is another Furgo bottle order that I will submit early next week, it will be about 5X as large.

# Alert Expeditors Inc.

16-Dec-16 #368427

Citywide Delivery • 440-3351 8421 Flamingo Drive • Anchorage, Alaska 99502

To) '	365	
Collect 🗖	Prepay 🗇 Account 🗇	Advance Charges
Job #	PO#	· · · ·
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×."	7:37471	
	116539	9
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Shipped Signatu	re	



							000 AU 10 AU 10	
	11	6539	9		1 1 4	6 5 3	99	
Review Criteria	Y/N (yes/no)		Exc	eptions N	oted be	low		
			exemption perm	nitted if sam	pler hand	carri	es/delivers.	
Were Custody Seals intact? Note # 8	k location Y			1F-1B				
COC accompanied	samples? Y							
**exemption perm	itted if chilled & col	ected <8hr	s ago or chlling no	ot required (i	.e., waste	, oil)		
	YC	<mark>ooler ID:</mark> 1		@	1.0	°C	Therm ID:	D20
	Y C	<mark>ooler ID:</mark> 2		@	2.6	°C	Therm ID:	D20
Temperature blank compliant* (i.e., 0-6 °C	after CF)? Y C	<mark>ooler ID:</mark> 3		@	3.4	°C	Therm ID:	D2
	Y C	ooler ID:		@		°C	Therm ID:	
	Y C	ooler ID:		@		°C	Therm ID:	
*If >6°C, were samples collected <8 ho	ırs ago? Y							
If <0°C, were sample containers	ice free? Y							
If samples received <u>without</u> a temperature blank, the "cooler tempera	ture" will							
be documented in lieu of the temperature blank & "COOLER TEMP" wi noted to the right. In cases where neither a temp blank nor cooler ten	ll be np can be							
obtained, note "ambient" or "chilled".								
Note: Identify containers received at non-compliant temperature . Us FS-0029 if more space is needed.	e form							
	Not	e: Refer to	form F-083 "Sam	ple Guide" fo	or hold tin	nes.		
Were samples received within h	old time? Y							
Do samples match COC** (i.e.,sample IDs,dates/times co	ollected)? Y							
**Note: If times differ <1hr, record details & login	per COC.							
Were analyses requested unam	biguous? Y							
			***Exemption	permitted for	r metals (e	e.g,20	0.8/6020A).	
Were proper containers (type/mass/volume/preservative*	**)used? Y							
IF APPLICABLE								
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with	samples? Y							
Were all VOA vials free of headspace (i.e., bubbles	≤ 6mm)? Y							
Were all soil VOAs field extracted with Me	OH+BFB? Y							
Note to Client: Any "no" answer above indicate	s non-compliance w	ith standard	d procedures and	may impact	data qual	ity.		
Addit	tional notes (if a	pplicable	):	, .		,		
Cooler 1 Came with all GRO vials and the Trip Blank. It also came	e with the bottles	for TPW-2	2-916 and PQ-W	1-0916				
Cooler 2 Came with all the Low level Mercury bottles (total and	dissolved) and the	e Trip Blan	ik for low level n	nercury.				
Cooler 3 Came with samples TPW-1-0916 Samples, TPW-9-0916	5, and TWP-5-0916	ō.						
SAMPLES 10-15 Are the Dissolved low level metals and merucry	'. Sample 16 is the	Dup for T	PW-1-0916					



## **Sample Containers and Preservatives**

<u>Container Id</u>	Preservative	<u>Container</u> <u>Condition</u>	<u>Container Id</u>	<u>Preservative</u>	<u>Container</u> Condition
1165399001-A	No Preservative Required	ОК	1165399005-A	No Preservative Required	ОК
1165399001-B	No Preservative Required	ОК	1165399005-B	No Preservative Required	OK
1165399001-C	No Preservative Required	ОК	1165399005-C	No Preservative Required	ОК
1165399001-D	HCL to pH < 2	ОК	1165399005-D	HCL to $pH < 2$	OK
1165399001-E	HCL to pH < 2 $$	ОК	1165399005-E	HCL to $pH < 2$	OK
1165399001-F	HCL to $pH < 2$	ОК	1165399005-F	HCL to $pH < 2$	OK
1165399001-G	HCL to pH < 2	ОК	1165399005-G	HCL to pH < 2	OK
1165399001-H	No Preservative Required	ОК	1165399005-H	No Preservative Required	OK
1165399001-I	No Preservative Required	ОК	1165399005-I	No Preservative Required	OK
1165399001-J	HNO3 to pH < 2	ОК	1165399005-J	HNO3 to pH < 2	OK
1165399002-A	No Preservative Required	ОК	1165399006-A	No Preservative Required	OK
1165399002-В	No Preservative Required	ОК	1165399006-B	No Preservative Required	OK
1165399002-C	No Preservative Required	ОК	1165399006-C	No Preservative Required	OK
1165399002-D	No Preservative Required	ОК	1165399006-D	HCL to pH < 2	OK
1165399002-Е	HCL to $pH < 2$	ОК	1165399006-E	HCL to $pH < 2$	OK
1165399002-F	HCL to $pH < 2$	ОК	1165399006-F	HCL to $pH < 2$	OK
1165399002-G	HCL to $pH < 2$	ОК	1165399006-G	HCL to $pH < 2$	OK
1165399002-H	HCL to $pH < 2$	ОК	1165399006-H	No Preservative Required	OK
1165399002-I	No Preservative Required	ОК	1165399006-I	No Preservative Required	OK
1165399002-J	No Preservative Required	ОК	1165399006-J	HNO3 to pH < 2	OK
1165399002-К	HNO3 to $pH < 2$	ОК	1165399007-A	HNO3 to pH < 2	OK
1165399002-L	HNO3 to pH < 2	ОК	1165399008-A	HCL to pH < 2	OK
1165399003-A	No Preservative Required	ОК	1165399008-B	HCL to $pH < 2$	OK
1165399003-В	No Preservative Required	ОК	1165399008-C	HCL to $pH < 2$	OK
1165399003-C	HCL to $pH < 2$	ОК	1165399009-A	HCL to $pH < 2$	OK
1165399003-D	HCL to $pH < 2$	ОК	1165399010-A	HCL to $pH < 2$	OK
1165399003-E	HCL to $pH < 2$	ОК	1165399010-B	HNO3 to pH < 2	OK
1165399003-F	HCL to $pH < 2$	ОК	1165399011-A	HCL to $pH < 2$	OK
1165399003-G	No Preservative Required	ОК	1165399011-B	HNO3 to pH < 2	OK
1165399003-H	No Preservative Required	ОК	1165399011-C	HNO3 to pH < 2	OK
1165399003-I	HNO3 to $pH < 2$	ОК	1165399012-A	HCL to $pH < 2$	OK
1165399003-J	HNO3 to $pH < 2$	ОК	1165399012-B	HNO3 to pH < 2	OK
1165399004-A	No Preservative Required	ОК	1165399012-C	HNO3 to pH < 2	OK
1165399004-В	No Preservative Required	ОК	1165399013-A	HCL to $pH < 2$	OK
1165399004-C	HCL to $pH < 2$	ОК	1165399013-B	HNO3 to pH < 2	OK
1165399004-D	HCL to $pH < 2$	ОК	1165399013-C	HNO3 to pH < 2	OK
1165399004-E	HCL to $pH < 2$	ОК	1165399014-A	HCL to $pH < 2$	OK
1165399004-F	HCL to $pH < 2$	ОК	1165399014-B	HNO3 to pH < 2	OK
1165399004-G	No Preservative Required	OK	1165399015-A	HCL to $pH < 2$	ОК
1165399004-H	No Preservative Required	OK	1165399015-B	HNO3 to $pH < 2$	ОК
1165399004-I	HNO3 to pH < 2	OK	1165399016-A	No Preservative Required	ОК
1165399004-J	HNO3 to pH < 2	ОК	1165399016-B	No Preservative Required	OK

9/13/2016

Container Id

Preservative

<u>Container</u> <u>Condition</u> <u>Container Id</u>

Confidential <u>Preservative</u> Facilities Groundwate <u>Gradityer</u> Sampling and Testing Report <u>Gradity of the trans</u> USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM- The container was received damaged.

FR- The container was received frozen and not usable for Bacteria or BOD analyses.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis

requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

9/13/2016



Laboratory	Report	of Analysis
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To: SLR Alaska-Anchorage 2700 Gambell St Suite 200 Anchorage, AK 99503 (907)222-1112

Report Number: **1165536** 

Client Project: 105.00148.16001 Fugro AKLNG

Dear Jason Gray,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely, SGS North America Inc.	SGS North America Inc. Environmental Services – Alaska Division Project Manager	Justin Nelson 2016.10.04 09:36:15 -08'00'
Justin Nelson Project Manager Justin.Nelson@sgs.com	Date	

Print Date: 10/03/2016 3:31:57PM

SGS North America Inc.



### Case Narrative

SGS Client: SLR Alaska-Anchorage SGS Project: 1165536 Project Name/Site: 105.00148.16001 Fugro AKLNG Project Contact: Jason Gray

Refer to sample receipt form for information on sample condition.

#### 1165536001(1353299MS) (1353300) MS

200.8LL - Metals MS recoveries for aluminum (168%) and barium (139%) do not meet QC criteria. Post digestion spike was successful.

1165536001(1353299MSD) (1353301) MSD

200.8LL - Metals MSD recoveries for barium (139%), iron (135%), and aluminum (426%) do not meet QC criteria. Post digestion spike was successful.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 10/03/2016 3:31:59PM

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518 t 907.562.2343 f 907.561.5301 www.us.sgs.com

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### Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <<u>http://www.sgs.com/en/Terms-and-Conditions.aspx></u>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
В	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
Μ	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.
Sample summaries which i All DRO/RRO analyses are	nclude a result for "Total Solids" have already been adjusted for moisture content.

Print Date: 10/03/2016 3:32:00PM

200 West Potter Drive, Anchorage, AK 99518 t 907.562.2343 f 907.561.5301 www.us.sgs.com

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Note:

Sample Summary						
Client Sample ID	Lab Sample ID	Collected	Received	Matrix		
MW82A-0916	1165536001	09/16/2016	09/18/2016	Water (Surface, Eff., Ground)		
MW82B-0916	1165536002	09/16/2016	09/18/2016	Water (Surface, Eff., Ground)		
MW27B-0916	1165536003	09/16/2016	09/18/2016	Water (Surface, Eff., Ground)		
MW74A-0916	1165536004	09/17/2016	09/18/2016	Water (Surface, Eff., Ground)		
MW74B-0916	1165536005	09/17/2016	09/18/2016	Water (Surface, Eff., Ground)		
MW82A-0916	1165536006	09/16/2016	09/18/2016	Water (Surface, Eff., Ground)		
MW82B-0916	1165536007	09/16/2016	09/18/2016	Water (Surface, Eff., Ground)		
MW27B-0916	1165536008	09/16/2016	09/18/2016	Water (Surface, Eff., Ground)		
MW74A-0916	1165536009	09/17/2016	09/18/2016	Water (Surface, Eff., Ground)		
MW74B-0916	1165536010	09/17/2016	09/18/2016	Water (Surface, Eff., Ground)		
TB1-0916	1165536011	09/16/2016	09/18/2016	Water (Surface, Eff., Ground)		
TB2-0916	1165536012	09/17/2016	09/18/2016	Water (Surface, Eff., Ground)		
Method	Method Desc	ription				
SM21 2320B	Alkalinity as 0	CaCO3 QC				
SM21 2340B	Dissolved Ha	rdness as CaCO3	ICP-MS-LowLv			
AK102	DRO/RRO Lo	ow Volume Water				
AK103	DRO/RRO Lo	ow Volume Water				
AK101	Gasoline Rar	nge Organics (W)				
EPA 300.0	Ion Chromato	ographic Analysis				
EPA 300.0	Ion Chromato	ographic Analysis	(W)			
200.8 Low Level	Metals in Wa	ter by 200.8 ICP-N	/IS LL			
200.8 Low Level	Metals in Wa	ter by 200.8 ICP-N	IS LL DIS			
SM21 4500-H B	pH Analysis					
SM21 2540C	Total Dissolve	ed Solids SM18 2	540C			
SM21 2540D	Total Suspen	ded Solids SM20	2540D			
SM21 2130B	Turbidity Ana	lysis				

Print Date: 10/03/2016 3:32:00PM

SGS North America Inc.

SGS



### **Detectable Results Summary**

Client Sample ID: MW82A-0916			
Lab Sample ID: 1165536001	Parameter	Result	Units
Metals by ICP/MS	Aluminum	2160	ug/L
	Antimony	0.111	ug/L
	Arsenic	8.83	ug/L
	Barium	21.2	ug/L
	Beryllium	0.0332J	ug/L
	Bismuth	0.0169J	ug/L
	Boron	12.6	ug/L
	Cadmium	0.0683	ug/L
	Calcium	19500	ug/L
	Chromium	4.07	ug/L
	Cobalt	0.957	ug/L
	Copper	3.26	ug/L
	Iron	2560	ug/L
	Lead	0.937	ug/L
	Magnesium	5290	ug/L
	Manganese	136	ug/L
	Molybdenum	0.529	ug/L
	Nickel	3.53	ug/L
	Potassium	2820	ug/L
	Sodium	5050	ug/L
	Thallium	0.00840J	ug/L
	Tin	0.156J	ug/L
	Vanadium	4.19	ug/L
	Zinc	47.5	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.314J	mg/L
Waters Department	Alkalinity	70.3	mg/L
	Chloride	9.05	mg/L
	Fluoride	0.133J	mg/L
	рН	8.10	pH units
	Sulfate	2.48	mg/L
	Total Dissolved Solids	144	mg/L
	Total Suspended Solids	55.1	mg/L
	Turbidity	34.0	NTU

Print Date: 10/03/2016 3:32:01PM

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### **Detectable Results Summary**

Client Sample ID: MW82B-0916			
Lab Sample ID: 1165536002	Parameter	Result	Units
Metals by ICP/MS	Aluminum	496	ug/L
-	Antimony	0.207	ug/L
	Arsenic	1.27	ug/L
	Barium	15.1	ug/L
	Boron	7.95	ug/L
	Cadmium	0.0472J	ug/L
	Calcium	19500	ug/L
	Chromium	3.39	ug/L
	Cobalt	0.539	ug/L
	Copper	2.26	ug/L
	Iron	1890	ug/L
	Lead	0.460	ug/L
	Magnesium	4630	ug/L
	Manganese	47.8	ug/L
	Molybdenum	0.326	ug/L
	Nickel	3.28	ug/L
	Potassium	2010	ug/L
	Silver	0.0596	ug/L
	Sodium	13800	ug/L
	Thallium	0.00960J	ug/L
	Vanadium	2.70	ug/L
	Zinc	10.1	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.362J	mg/L
Waters Department	Alkalinity	35.5	mg/L
	Chloride	43.1	mg/L
	Fluoride	0.0980J	mg/L
	Nitrate-N	1.14	mg/L
	рН	6.40	pH units
	Sulfate	3.23	mg/L
	Total Dissolved Solids	182	mg/L
	Total Suspended Solids	13.2	mg/L
	Turbidity	11.0	NTU

Print Date: 10/03/2016 3:32:01PM

SGS North America Inc.



### **Detectable Results Summary**

Client Sample ID: MW27B-0916			
Lab Sample ID: 1165536003	Parameter	Result	Units
Metals by ICP/MS	Aluminum	1040	ug/L
	Antimony	0.190	ug/L
	Arsenic	2.01	ug/L
	Barium	78.5	ug/L
	Beryllium	0.0348J	ug/L
	Bismuth	0.0175J	ug/L
	Boron	4.98J	ug/L
	Calcium	18400	ug/L
	Chromium	3.71	ug/L
	Cobalt	0.916	ug/L
	Copper	3.79	ug/L
	Iron	10700	ug/L
	Lead	0.969	ug/L
	Magnesium	6500	ug/L
	Manganese	403	ug/L
	Molybdenum	0.184	ug/L
	Nickel	3.80	ug/L
	Potassium	2340	ug/L
	Sodium	8360	ug/L
	Thallium	0.00726J	ug/L
	Tin	0.154J	ug/L
	Vanadium	3.74	ug/L
	Zinc	7.09	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.282J	mg/L
Waters Department	Alkalinity	53.8	mg/L
	Chloride	26.9	mg/L
	Fluoride	0.101J	mg/L
	рН	6.70	pH units
	Sulfate	5.63	mg/L
	Total Dissolved Solids	167	mg/L
	Total Suspended Solids	25.6	mg/L
	Turbidity	31.0	NTU

Print Date: 10/03/2016 3:32:01PM

SGS North America Inc.



### **Detectable Results Summary**

Client Sample ID: MW74A-0916			
Lab Sample ID: 1165536004	Parameter	Result	Units
Metals by ICP/MS	Aluminum	1420	ug/L
-	Antimony	0.126	ug/L
	Arsenic	47.4	ug/L
	Barium	16.5	ug/L
	Bismuth	0.0210J	ug/L
	Boron	123	ug/L
	Cadmium	0.0199J	ug/L
	Calcium	3670	ug/L
	Chromium	7.92	ug/L
	Cobalt	0.902	ug/L
	Copper	3.66	ug/L
	Iron	1860	ug/L
	Lead	0.804	ug/L
	Magnesium	1980	ug/L
	Manganese	61.1	ug/L
	Molybdenum	1.33	ug/L
	Nickel	5.43	ug/L
	Potassium	7310	ug/L
	Sodium	30500	ug/L
	Thallium	0.00900J	ug/L
	Vanadium	3.55	ug/L
	Zinc	10.3	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.287J	mg/L
Waters Department	Alkalinity	89.9	mg/L
	Chloride	4.22	mg/L
	Fluoride	0.218	mg/L
	pH	8.70	pH units
	Sulfate	1.25	mg/L
	Total Dissolved Solids	141	mg/L
	Total Suspended Solids	78.3	mg/L
	Turbidity	38.0	NTU

Print Date: 10/03/2016 3:32:01PM

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Metals by ICP/MS

Client Sample ID: MW74B-0916 Lab Sample ID: 1165536005

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Units

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

mg/L

NTU

pH units

Result

0.0599

780

1.18

31.1

4.56J

10800

3.25

1.32

1.30

3800

0.469

3600

140

0.304

3.00

1640

5750

1.79

4.32

42.5

11.2

6.70

5.50

115

11.8

7.60

0.118J

0.278J

### **Detectable Results Summary**

Parameter

Aluminum

Antimony

Arsenic

	Barium
	Boron
	Calcium
	Chromium
	Cobalt
	Copper
	Iron
	Lead
	Magnesium
	Manganese
	Molybdenum
	Nickel
	Potassium
	Sodium
	Vanadium
	Zinc
emivolatile Organic Fuels	Diesel Range Organics
aters Department	Alkalinity
	Chloride
	Fluoride

pН

Sulfate

Turbidity

**Total Dissolved Solids** 

Total Suspended Solids

S W

Print Date: 10/03/2016 3:32:01PM

SGS North America Inc.



Lab Sample ID: 1165536006	Parameter	Result	<u>Units</u>
Dissolved Metals by ICP/MS	Aluminum	2.12	ug/L
	Antimony	0.0230J	ug/L
	Arsenic	7.87	ug/L
	Barium	9.07	ug/L
	Boron	12.2	ug/L
	Calcium	18500	ug/L
	Cobalt	0.0357	ug/L
	Hardness as CaCO3	64.7	mg/L
	Iron	32.4	ug/L
	Magnesium	4510	ug/L
	Manganese	91.6	ug/L
	Molybdenum	0.461	ug/L
	Nickel	0.426J	ug/L
	Potassium	2560	ug/L
	Silicon	15100	ug/L
	Sodium	4690	ug/L
	Zinc	0.551J	ug/L
Client Sample ID: MW/92D 0016			-
Client Sample ID: MW82B-0916		<b>.</b>	
	Parameter	Result	Units
Dissolved Metals by ICP/MS	Aluminum	8.45	ug/L
	Antimony	0.118	ug/L
	Barium	9.78	ug/L
	Boron	8.36	ug/L
	Cadmium	0.0391J	ug/L
	Calcium	19000	ug/L
	Cobalt	0.291	ug/L
	Copper	0.403J	ug/L
	Hardness as CaCO3	66.7	mg/L
	Iron	615	ug/L
	Magnesium	4660	ug/L
	Manganese	37.2	ug/L
	Molybdenum	0.119	ug/L
	Nickel	1.57	ug/L
	Potassium	1980	ug/L
	Silicon	14000	ug/L
	Sodium	14000	ug/L
	Vanadium	0.706J	ug/L
	Zinc	8 35	ua/L

Print Date: 10/03/2016 3:32:01PM

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Client Sample ID: MW27B-0916			
Lab Sample ID: 1165536008	Parameter	Result	<u>Units</u>
Dissolved Metals by ICP/MS	Aluminum	9.46	ug/L
-	Antimony	0.0682	ug/L
	Arsenic	0.824	ug/L
	Barium	62.9	ug/L
	Boron	4.93J	ug/L
	Calcium	18100	ug/L
	Chromium	0.199J	ug/L
	Cobalt	0.373	ug/L
	Copper	0.237J	ug/L
	Hardness as CaCO3	70.5	mg/L
	Iron	7830	ug/L
	Magnesium	6160	ug/L
	Manganese	394	ug/L
	Molybdenum	0.103	ug/L
	Nickel	1.90	ug/L
	Potassium	2040	ug/L
	Silicon	16200	ug/L
	Sodium	8000	ug/L
	Vanadium	0.331J	ug/L
	Zinc	3.87	ug/L
Client Sample ID: MW74A-0916			
Lab Sample ID: 1165536009	<u>Parameter</u>	<u>Result</u>	<u>Units</u>
Dissolved Metals by ICP/MS	Aluminum	35.6	ug/L
-	Antimony	0.0801	ug/L
	Arsenic	48.8	ug/L
	Barium	3.41	ug/L
	Boron	122	ug/L
	Calcium	2930	ug/L
	Cobalt	0.0501	ug/L
	Copper	0.267J	ug/L
	Hardness as CaCO3	13.4	mg/L
	Iron	60.6	ug/L
	Lead	0.0330J	ug/L
	Magnesium	1480	ug/L
	Manganese	21.8	ug/L
	Molybdenum	1.19	ug/L
	Nickel	0.364J	ug/L
	Potassium	7070	ug/L
	Silicon	11500	ug/L
	Sodium	31000	ug/L
	Vanadium	0.310J	ug/L
	Zinc	0.941J	ug/L

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### **Detectable Results Summary**

Client Sample ID: MW74B-0916 Lab Sample ID: 1165536010 Dissolved Metals by ICP/MS

Parameter	Result	Units
Aluminum	25.6	ug/L
Antimony	0.0363J	ug/L
Arsenic	1.08	ug/L
Barium	25.6	ug/L
Boron	4.79J	ug/L
Calcium	11100	ug/L
Chromium	0.294J	ug/L
Cobalt	1.07	ug/L
Hardness as CaCO3	42.9	mg/L
Iron	3400	ug/L
Lead	0.0365J	ug/L
Magnesium	3680	ug/L
Manganese	141	ug/L
Molybdenum	0.222	ug/L
Nickel	1.72	ug/L
Potassium	1710	ug/L
Silicon	15700	ug/L
Sodium	6030	ug/L
Vanadium	0.546J	ug/L
Zinc	2.37J	ug/L

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### Results of MW82A-0916

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Client Sample ID: **MW82A-0916** Client Project ID: **105.00148.16001 Fugro AKLNG** Lab Sample ID: 1165536001 Lab Project ID: 1165536 Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 09/16/16 10:37 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	2160	20.0	6.20	ug/L	25		09/22/16 15:03
Antimony	0.111	0.0500	0.0150	ug/L	2.5		09/22/16 11:34
Arsenic	8.83	0.800	0.200	ug/L	2.5		09/22/16 11:34
Barium	21.2	0.250	0.0400	ug/L	2.5		09/22/16 11:34
Beryllium	0.0332 J	0.0500	0.0250	ug/L	2.5		09/22/16 11:34
Bismuth	0.0169 J	0.0500	0.0150	ug/L	2.5		09/22/16 11:34
Boron	12.6	5.00	1.50	ug/L	2.5		09/22/16 11:34
Cadmium	0.0683	0.0500	0.0150	ug/L	2.5		09/22/16 11:34
Calcium	19500	50.0	15.0	ug/L	2.5		09/22/16 11:34
Chromium	4.07	0.500	0.150	ug/L	2.5		09/22/16 11:34
Cobalt	0.957	0.0200	0.0100	ug/L	2.5		09/22/16 11:34
Copper	3.26	0.500	0.200	ug/L	2.5		09/22/16 11:34
Iron	2560	20.0	6.20	ug/L	2.5		09/22/16 11:34
Lead	0.937	0.100	0.0310	ug/L	2.5		09/22/16 11:34
Magnesium	5290	20.0	6.20	ug/L	2.5		09/22/16 11:34
Manganese	136	0.100	0.0310	ug/L	2.5		09/22/16 11:34
Molybdenum	0.529	0.0500	0.0150	ug/L	2.5		09/22/16 11:34
Nickel	3.53	0.620	0.0620	ug/L	2.5		09/22/16 11:34
Potassium	2820	50.0	15.0	ug/L	2.5		09/22/16 11:34
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 11:34
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 11:34
Sodium	5050	100	31.0	ug/L	2.5		09/22/16 11:34
Thallium	0.00840 J	0.0200	0.00620	ug/L	2.5		09/22/16 11:34
Tin	0.156 J	0.200	0.0620	ug/L	2.5		09/22/16 11:34
Vanadium	4.19	1.00	0.310	ug/L	2.5		09/22/16 11:34
Zinc	47.5	3.10	0.400	ug/L	2.5		09/22/16 11:34

### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 15:03 Container ID: 1165536001-A Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/03/2016 3:32:03PM

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Results of MW82A-0916							
Client Sample ID: <b>MW82A-0916</b> Client Project ID: <b>105.00148.16001 Fugro AKLNG</b> Lab Sample ID: 1165536001 Lab Project ID: 1165536		Collection Date: 09/16/16 10:37 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by Semivolatile Organic Fuels	S						
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.314 J	<u>LOQ/CL</u> 0.605	<u>DL</u> 0.181	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	<u>Date Analyzed</u> 09/29/16 16:12
Surrogates 5a Androstane (surr)	102	50-150		%	1		09/29/16 16:12
Batch Information							
Analytical Batch: XFC12888 Analytical Method: AK102 Analyst: CRA Analytical Date/Time: 09/29/16 16:12 Container ID: 1165536001-E			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36396 : SW3520C me: 09/27/1 /t./Vol.: 248 Vol: 1 mL	) 16 09:43 9 mL		
Parameter Residual Range Organics	<u>Result Qual</u> 0.252 U	<u>LOQ/CL</u> 0.504	<u>DL</u> 0.151	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/29/16 16:12
Surrogates							
n-Triacontane-d62 (surr)	99.2	50-150		%	1		09/29/16 16:12
Batch Information							
Analytical Batch: XFC12888 Analytical Method: AK103 Analyst: CRA Analytical Date/Time: 09/29/16 16:12 Container ID: 1165536001-E			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36396 : SW3520C me: 09/27/1 /t./Vol.: 248 Vol: 1 mL	;  6 09:43 9 mL		
Print Date: 10/03/2016 3:32:03PM						J flaggin	g is activated

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SGS				s US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
Results of <b>MW82A-0916</b> Client Sample ID: <b>MW82A-0916</b> Client Project ID: <b>105.00148.16001 Fu</b> Lab Sample ID: 1165536001 Lab Project ID: 1165536	Igro AKLNG	C R M S					
Results by Volatile Fuels							
Parameter Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/28/16 00:31
<b>urrogates</b> 4-Bromofluorobenzene (surr)	84.1	50-150		%	1		09/28/16 00:31
Batch Information Analytical Batch: VFC13329 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/28/16 00:31 Container ID: 1165536001-B		F	Prep Batch: \ Prep Method: Prep Date/Tir Prep Initial W Prep Extract \	VXX29646 SW5030E ne: 09/27/ [,] t./Vol.: 5 m Vol: 5 mL	3 16 06:00 1L		

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Results of MW82A-0916							
Client Sample ID: MW82A-0916 Client Project ID: 105.00148.16001 Fu Lab Sample ID: 1165536001 Lab Project ID: 1165536	igro AKLNG	C R M S	ollection Da eceived Dat latrix: Water olids (%): ocation:	tte: 09/16/ te: 09/18/ [,] (Surface,	16 10:37 16 07:45 Eff., Gro	und)	
Results by Waters Department							
<u>Parameter</u> Chloride Fluoride	<u>Result Qual</u> 9.05 0.133 J	<u>LOQ/CL</u> 0.200 0.200	<u>DL</u> 0.0620 0.0620	<u>Units</u> mg/L mg/L	<u>DF</u> 1 1	<u>Allowable</u> Limits	Date Analyzed 09/18/16 09:28 09/18/16 09:28
Nitrate-N Nitrite-N	0.100 U 0.100 U	0.200 0.200	0.0620 0.0620	mg/L mg/L	1 1		09/18/16 09:28 09/18/16 09:28
Sulfate	2.48	0.200	0.0620	mg/L	1		09/18/16 09:28
Batch Information Analytical Batch: WIC5565 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/18/16 09:28 Container ID: 1165536001-H			Prep Batch: V Prep Method: Prep Date/Tir Prep Initial W Prep Extract V	WXX11625 : METHOD ne: 09/18/1 ít./Vol.: 10 n Vol: 10 mL	16 09:00 nL		
<u>Parameter</u> Turbidity	<u>Result Qual</u> 34.0	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/18/16 09:03
Batch Information Analytical Batch: WAT10739 Analytical Method: SM21 2130B Analyst: ACF Analytical Date/Time: 09/18/16 09:03 Container ID: 1165536001-I							
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 70.3	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 15:59
Batch Information Analytical Batch: WTI4518 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/23/16 15:59 Container ID: 1165536001-I							
<u>Parameter</u> Total Dissolved Solids	<u>Result Qual</u> 144	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 09/21/16 18:31
rint Date: 10/03/2016 3:32:03PM						J flaggin	g is activated

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- Results of MW82A-0916							
Client Sample ID: MW82A-0916 Client Project ID: 105.00148.16001 Fu Lab Sample ID: 1165536001 Lab Project ID: 1165536	igro AKLNG	Collection Date: 09/16/16 10:37 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
- Results by Waters Department			]				
Batch Information							
Analytical Batch: STS5211 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/21/16 18:31 Container ID: 1165536001-I							
Parameter Total Suspended Solids	<u>Result Qual</u> 55.1	<u>LOQ/CL</u> 2.56	<u>DL</u> 0.795	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/21/16 12:00
Batch Information Analytical Batch: STS5215 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/21/16 12:00 Container ID: 1165536001-G							
<u>Parameter</u> pH	<u>Result Qual</u> 8.10	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 09/23/16 15:59
Batch Information Analytical Batch: WTI4513 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 15:59 Container ID: 1165536001-I							
Print Date: 10/03/2016 3:32:03PM		No Anabara				J flaggin	g is activated
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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

### Results of MW82B-0916

Client Sample ID: MW82B-0916 Client Project ID: 105.00148.16001 Fugro AKLNG Lab Sample ID: 1165536002 Lab Project ID: 1165536 Collection Date: 09/16/16 13:31 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	496	2.00	0.620	ug/L	2.5		09/22/16 12:21
Antimony	0.207	0.0500	0.0150	ug/L	2.5		09/22/16 12:21
Arsenic	1.27	0.800	0.200	ug/L	2.5		09/22/16 12:21
Barium	15.1	0.250	0.0400	ug/L	2.5		09/22/16 12:21
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 12:21
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:21
Boron	7.95	5.00	1.50	ug/L	2.5		09/22/16 12:21
Cadmium	0.0472 J	0.0500	0.0150	ug/L	2.5		09/22/16 12:21
Calcium	19500	50.0	15.0	ug/L	2.5		09/22/16 12:21
Chromium	3.39	0.500	0.150	ug/L	2.5		09/22/16 12:21
Cobalt	0.539	0.0200	0.0100	ug/L	2.5		09/22/16 12:21
Copper	2.26	0.500	0.200	ug/L	2.5		09/22/16 12:21
Iron	1890	20.0	6.20	ug/L	2.5		09/22/16 12:21
Lead	0.460	0.100	0.0310	ug/L	2.5		09/22/16 12:21
Magnesium	4630	20.0	6.20	ug/L	2.5		09/22/16 12:21
Manganese	47.8	0.100	0.0310	ug/L	2.5		09/22/16 12:21
Molybdenum	0.326	0.0500	0.0150	ug/L	2.5		09/22/16 12:21
Nickel	3.28	0.620	0.0620	ug/L	2.5		09/22/16 12:21
Potassium	2010	50.0	15.0	ug/L	2.5		09/22/16 12:21
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 12:21
Silver	0.0596	0.0200	0.00620	ug/L	2.5		09/22/16 12:21
Sodium	13800	100	31.0	ug/L	2.5		09/22/16 12:21
Thallium	0.00960 J	0.0200	0.00620	ug/L	2.5		09/22/16 12:21
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 12:21
Vanadium	2.70	1.00	0.310	ug/L	2.5		09/22/16 12:21
Zinc	10.1	3.10	0.400	ug/L	2.5		09/22/16 12:21

### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 12:21 Container ID: 1165536002-A Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/03/2016 3:32:03PM

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Results of MW82B-0916							
Client Sample ID: <b>MW82B-0916</b> Client Project ID: <b>105.00148.16001 F</b> Lab Sample ID: 1165536002 Lab Project ID: 1165536	ugro AKLNG	C F N S L	Collection Da Received Da Matrix: Wate Solids (%): .ocation:	ate: 09/16/ ite: 09/18/ [/] r (Surface,	16 13:31 16 07:45 Eff., Gro	und)	
Results by Semivolatile Organic Fue	ls						
Parameter Diesel Range Organics	<u>Result Qual</u> 0.362 J	<u>LOQ/CL</u> 0.588	<u>DL</u> 0.176	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/29/16 16:22
Surrogates 5a Androstane (surr)	100	50-150		%	1		09/29/16 16:22
Batch Information							
Analytical Batch: XFC12888 Analytical Method: AK102 Analyst: CRA Analytical Date/Time: 09/29/16 16:22 Container ID: 1165536002-E			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36396 : SW3520C me: 09/27/1 /t./Vol.: 255 Vol: 1 mL	; 16 09:43 5 mL		
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.245 U	<u>LOQ/CL</u> 0.490	<u>DL</u> 0.147	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/29/16 16:22
Surrogates							
n-Triacontane-d62 (surr)	101	50-150		%	1		09/29/16 16:22
Batch Information							
Analytical Batch: XFC12888 Analytical Method: AK103 Analyst: CRA Analytical Date/Time: 09/29/16 16:22 Container ID: 1165536002-E			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36396 : SW3520C me: 09/27/1 /t./Vol.: 255 Vol: 1 mL	) 16 09:43 5 mL		
Print Date: 10/03/2016 3:32:03PM						J flaggin	g is activated

SGS				s US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
Results of <b>MW82B-0916</b> Client Sample ID: <b>MW82B-0916</b> Client Project ID: <b>105.00148.16001 Fu</b> Lab Sample ID: 1165536002 Lab Project ID: 1165536	ıgro AKLNG	C R M S L	ollection Da eceived Dat latrix: Water olids (%): ocation:	und)			
Results by Volatile Fuels							
Parameter Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/24/16 01:37
urrogates 4-Bromofluorobenzene (surr)	90.1	50-150		%	1		09/24/16 01:37
Batch Information							
Analytical Batch: VFC13322 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/24/16 01:37 Container ID: 1165536002-B		F F F	Prep Batch: N Prep Method: Prep Date/Tin Prep Initial W Prep Extract N	VXX29625 SW5030E ne: 09/23/ t./Vol.: 5 m Vol: 5 mL	3 16 06:00 1L		
rint Date: 10/03/2016 3:32:03PM						J flaggin	g is activated

SGS				S US	LNG Fa Sampling a AL-FG-GF	acilities Ground Ind Testing Re RZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
- Results of MW82B-0916							
Client Sample ID: <b>MW82B-0916</b> Client Project ID: <b>105.00148.16001 Fo</b> Lab Sample ID: 1165536002 Lab Project ID: 1165536	ugro AKLNG	C R M Si La	ollection Da eceived Dat latrix: Water olids (%): ocation:	te: 09/16/ :e: 09/18/ [;] (Surface,	16 13:31 16 07:45 Eff., Gro	und)	
Results by Waters Department							
						All	
Parameter	Result Qual	1.00/01	וח	Units	DE	Allowable	Date Analyzed
Chloride	43.1	1.00	0.310	ma/l	5	Linito	09/18/16 11·19
Eluoride	0.080 1	0.200	0.0620	mg/L	1		09/18/16 09:50
Nitroto N	1 14	0.200	0.0020	mg/L	1		00/18/16 00:50
	1.14	0.200	0.0620	mg/L	1		09/16/16 09.50
Nitrite-IN	0.100 0	0.200	0.0620	mg/L	1		09/18/16 09:50
Suirate	3.23	0.200	0.0620	mg/L	1		09/18/16 09:50
Batch Information							
Analytical Batch: WIC5565 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/18/16 11:19 Container ID: 1165536002-H		F F F	Prep Batch: N Prep Method: Prep Date/Tir Prep Initial W Prep Extract N	WXX11625 METHOD ne: 09/18/1 t./Vol.: 10 n Vol: 10 mL	16 09:00 mL		
<u>Parameter</u> Turbidity	Result Qual 11.0	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/18/16 09:03
Batch Information Analytical Batch: WAT10739 Analytical Method: SM21 2130B Analyst: ACF Analytical Date/Time: 09/18/16 09:03 Container ID: 1165536002-I							
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 35.5	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 16:12
Detals Information							
Analytical Batch: WTI4518 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/23/16 16:12 Container ID: 1165536002-I							
<u>Parameter</u> Total Dissolved Solids	<u>Result Qual</u> 182	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/21/16 18:31
Print Date: 10/03/2016 3:32:03PM						J flaggin	g is activated

SGS				Sa USA	LNG F Impling L-FG-G	acilities Ground and Testing Re RZZZ-00-00201	Confidential lwater Quality port - Event 2 l6-004 Rev. 0 16-Dec-16
Results of MW82B-0916							
Client Sample ID: <b>MW82B-0916</b> Client Project ID: <b>105.00148.16001 F</b> Lab Sample ID: 1165536002 Lab Project ID: 1165536	ugro AKLNG	Collection Date: 09/16/16 13:31 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by Waters Department			]				
Batch Information							
Analytical Batch: STS5211 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/21/16 18:31 Container ID: 1165536002-I							
Parameter Total Suspended Solids	<u>Result Qual</u> 13.2	<u>LOQ/CL</u> 1.89	<u>DL</u> 0.585	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/21/16 12:00
Batch Information							
Analytical Method: SN21 2540D Analyst: LLP Analytical Date/Time: 09/21/16 12:00 Container ID: 1165536002-G							
<u>Parameter</u> pH	<u>Result Qual</u> 6.40	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/23/16 16:12
Batch Information Analytical Batch: WTI4513 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 16:12 Container ID: 1165536002-I							
Print Date: 10/03/2016 3:32:03PM						J flaggin	g is activated
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### Results of MW27B-0916

Client Sample ID: MW27B-0916 Client Project ID: 105.00148.16001 Fugro AKLNG Lab Sample ID: 1165536003 Lab Project ID: 1165536 Collection Date: 09/16/16 16:55 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Metals by ICP/MS

					Allo	wable	
Parameter_	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u> <u>Li</u>	mits	Date Analyzed
Aluminum	1040	8.00	2.48	ug/L	10		09/22/16 14:13
Antimony	0.190	0.0500	0.0150	ug/L	2.5		09/22/16 12:24
Arsenic	2.01	0.800	0.200	ug/L	2.5		09/22/16 12:24
Barium	78.5	0.250	0.0400	ug/L	2.5		09/22/16 12:24
Beryllium	0.0348 J	0.0500	0.0250	ug/L	2.5		09/22/16 12:24
Bismuth	0.0175 J	0.0500	0.0150	ug/L	2.5		09/22/16 12:24
Boron	4.98 J	5.00	1.50	ug/L	2.5		09/22/16 12:24
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:24
Calcium	18400	50.0	15.0	ug/L	2.5		09/22/16 12:24
Chromium	3.71	0.500	0.150	ug/L	2.5		09/22/16 12:24
Cobalt	0.916	0.0200	0.0100	ug/L	2.5		09/22/16 12:24
Copper	3.79	0.500	0.200	ug/L	2.5		09/22/16 12:24
Iron	10700	20.0	6.20	ug/L	2.5		09/22/16 12:24
Lead	0.969	0.100	0.0310	ug/L	2.5		09/22/16 12:24
Magnesium	6500	20.0	6.20	ug/L	2.5		09/22/16 12:24
Manganese	403	0.100	0.0310	ug/L	2.5		09/22/16 12:24
Molybdenum	0.184	0.0500	0.0150	ug/L	2.5		09/22/16 12:24
Nickel	3.80	0.620	0.0620	ug/L	2.5		09/22/16 12:24
Potassium	2340	50.0	15.0	ug/L	2.5		09/22/16 12:24
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 12:24
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:24
Sodium	8360	100	31.0	ug/L	2.5		09/22/16 12:24
Thallium	0.00726 J	0.0200	0.00620	ug/L	2.5		09/22/16 12:24
Tin	0.154 J	0.200	0.0620	ug/L	2.5		09/22/16 12:24
Vanadium	3.74	1.00	0.310	ug/L	2.5		09/22/16 12:24
Zinc	7.09	3.10	0.400	ug/L	2.5		09/22/16 12:24

### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 14:13 Container ID: 1165536003-A Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/03/2016 3:32:03PM

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SGS				S US	LNG Fa Sampling a AL-FG-GR	icilities Ground nd Testing Re 2ZZ-00-00201	Confidential Iwater Quality port - Event 2 I6-004 Rev. 0 16-Dec-16	
Results of MW27B-0916								
Client Sample ID: <b>MW27B-0916</b> Client Project ID: <b>105.00148.16001 F</b> Lab Sample ID: 1165536003 Lab Project ID: 1165536	ugro AKLNG	Collection Date: 09/16/16 16:55 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Semivolatile Organic Fue	ls		_					
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.282 J	<u>LOQ/CL</u> 0.600	<u>DL</u> 0.180	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/29/16 16:32	
Surrogates 5a Androstane (surr)	96.9	50-150		%	1		09/29/16 16:32	
Batch Information Analytical Batch: XFC12888 Analytical Method: AK102 Analyst: CRA Analytical Date/Time: 09/29/16 16:32 Container ID: 1165536003-E			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36396 : SW3520C me: 09/27/1 /t./Vol.: 250 Vol: 1 mL	; 16 09:43 1 mL			
Parameter Residual Range Organics	<u>Result Qual</u> 0.250 U	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/29/16 16:32	
Surrogates								
n-Triacontane-d62 (surr)	95.6	50-150		%	1		09/29/16 16:32	
Batch Information								
Analytical Batch: XFC12888 Analytical Method: AK103 Analyst: CRA Analytical Date/Time: 09/29/16 16:32 Container ID: 1165536003-E			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36396 : SW3520C me: 09/27/1 /t./Vol.: 250 Vol: 1 mL	; 16 09:43 1 mL			
Print Date: 10/03/2016 3:32:03PM						J flaggin	g is activated	

SGS				s US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential lwater Quality port - Event 2 l6-004 Rev. 0 16-Dec-16
Results of <b>MW27B-0916</b> Client Sample ID: <b>MW27B-0916</b> Client Project ID: <b>105.00148.16001 Fu</b> Lab Sample ID: 1165536003 Lab Project ID: 1165536	igro AKLNG	C R M S					
Results by Volatile Fuels							
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/24/16 01:5
u <b>rrogates</b> 4-Bromofluorobenzene (surr)	85	50-150		%	1		09/24/16 01:5
Analytical Batch: VFC13322 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/24/16 01:56 Container ID: 1165536003-B		F F F	Prep Batch: N Prep Method: Prep Date/Tir Prep Initial W Prep Extract N	VXX29625 SW5030E ne: 09/23/ [,] t./Vol.: 5 m Vol: 5 mL	3 16 06:00 IL		

SGS				S US	LNG Fa Sampling a AL-FG-GF	acilities Ground and Testing Re RZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
Results of MW27B-0916							
Client Sample ID: MW27B-0916 Client Project ID: 105.00148.16001 Fu Lab Sample ID: 1165536003 Lab Project ID: 1165536	igro AKLNG	C R M S	collection Da leceived Dat latrix: Water olids (%): ocation:	te: 09/16/ te: 09/18/ [,] (Surface,	16 16:55 16 07:45 Eff., Gro	und)	
Results by Waters Department							
Parameter Chloride Fluoride Nitrate-N	<u>Result Qual</u> 26.9 0.101 J 0.100 U	LOQ/CL 1.00 0.200 0.200	<u>DL</u> 0.310 0.0620 0.0620	<u>Units</u> mg/L mg/L	<u>DF</u> 5 1	<u>Allowable</u> Limits	Date Analyzed 09/18/16 11:44 09/18/16 10:12 09/18/16 10:12
Nitrite-N	0.100 U	0.200	0.0620	ma/L	1		09/18/16 10:12
Sulfate	5.63	0.200	0.0620	mg/L	1		09/18/16 10:12
Batch Information Analytical Batch: WIC5565 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/18/16 11:44 Container ID: 1165536003-H			Prep Batch: \ Prep Method: Prep Date/Tir Prep Initial W Prep Extract \	WXX11625 METHOD ne: 09/18/1 t./Vol.: 10 n Vol: 10 mL	16 09:00 mL		
<u>Parameter</u> Turbidity	<u>Result Qual</u> 31.0	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/18/16 09:03
Batch Information Analytical Batch: WAT10739 Analytical Method: SM21 2130B Analyst: ACF Analytical Date/Time: 09/18/16 09:03 Container ID: 1165536003-I							
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 53.8	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 16:18
Batch Information Analytical Batch: WTI4518 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/23/16 16:18 Container ID: 1165536003-I							
Parameter Total Dissolved Solids	<u>Result Qual</u> 167	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/21/16 18:31
Print Date: 10/03/2016 3:32:03PM						J flagging	g is activated

SGS		Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16						
Results of MW27B-0916								
Client Sample ID: <b>MW27B-0916</b> Client Project ID: <b>105.00148.16001</b> Lab Sample ID: 1165536003 Lab Project ID: 1165536	Fugro AKLNG	C R M Si La	ollection Da eceived Da latrix: Wate olids (%): ocation:	ate: 09/16/1 ite: 09/18/16 r (Surface, E	6 16:55 6 07:45 Eff., Gro	5 ; pund)		
Results by Waters Department			]					
Batch Information								
Analytical Batch: STS5211 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/21/16 18:37 Container ID: 1165536003-I	I							
Parameter Total Suspended Solids	<u>Result Qual</u> 25.6	<u>LOQ/CL</u> 2.78	<u>DL</u> 0.861	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/21/16 12:00	
Batch Information Analytical Batch: STS5215 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/21/16 12:00 Container ID: 1165536003-G	)							
<u>Parameter</u> pH	<u>Result Qual</u> 6.70	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 09/23/16 16:18	
Batch Information Analytical Batch: WTI4513 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 16:18 Container ID: 1165536003-I	3							
Print Date: 10/03/2016 3:32:03PM						.I flaggin	n is activated	
SGS North America Inc.	200 West Potter Dri t 907.562.2343 f 90	ve Anchorage 7.561.5301 w	, AK 95518 ww.us.sgs.c	om		u naggin		

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

### Results of MW74A-0916

Client Sample ID: **MW74A-0916** Client Project ID: **105.00148.16001 Fugro AKLNG** Lab Sample ID: 1165536004 Lab Project ID: 1165536 Collection Date: 09/17/16 10:37 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Metals by ICP/MS

					<u>A</u>	Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Aluminum	1420	8.00	2.48	ug/L	10		09/22/16 13:33
Antimony	0.126	0.0500	0.0150	ug/L	2.5		09/22/16 12:27
Arsenic	47.4	0.800	0.200	ug/L	2.5		09/22/16 12:27
Barium	16.5	0.250	0.0400	ug/L	2.5		09/22/16 12:27
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 12:27
Bismuth	0.0210 J	0.0500	0.0150	ug/L	2.5		09/22/16 12:27
Boron	123	5.00	1.50	ug/L	2.5		09/22/16 12:27
Cadmium	0.0199 J	0.0500	0.0150	ug/L	2.5		09/22/16 12:27
Calcium	3670	50.0	15.0	ug/L	2.5		09/22/16 12:27
Chromium	7.92	0.500	0.150	ug/L	2.5		09/22/16 12:27
Cobalt	0.902	0.0200	0.0100	ug/L	2.5		09/22/16 12:27
Copper	3.66	0.500	0.200	ug/L	2.5		09/22/16 12:27
Iron	1860	20.0	6.20	ug/L	2.5		09/22/16 12:27
Lead	0.804	0.100	0.0310	ug/L	2.5		09/22/16 12:27
Magnesium	1980	20.0	6.20	ug/L	2.5		09/22/16 12:27
Manganese	61.1	0.100	0.0310	ug/L	2.5		09/22/16 12:27
Molybdenum	1.33	0.0500	0.0150	ug/L	2.5		09/22/16 12:27
Nickel	5.43	0.620	0.0620	ug/L	2.5		09/22/16 12:27
Potassium	7310	50.0	15.0	ug/L	2.5		09/22/16 12:27
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 12:27
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:27
Sodium	30500	400	124	ug/L	10		09/22/16 13:33
Thallium	0.00900 J	0.0200	0.00620	ug/L	2.5		09/22/16 12:27
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 12:27
Vanadium	3.55	1.00	0.310	ug/L	2.5		09/22/16 12:27
Zinc	10.3	3.10	0.400	ug/L	2.5		09/22/16 12:27

### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 13:33 Container ID: 1165536004-A Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/03/2016 3:32:03PM

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SGS				s US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential Iwater Quality port - Event 2 I6-004 Rev. 0 16-Dec-16		
Results of MW74A-0916									
Client Sample ID: <b>MW74A-0916</b> Client Project ID: <b>105.00148.16001 Fu</b> Lab Sample ID: 1165536004 Lab Project ID: 1165536	igro AKLNG	Collection Date: 09/17/16 10:37 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%):							
Results by Semivolatile Organic Fuel	s								
Parameter Diesel Range Organics	<u>Result Qual</u> 0.287 J	<u>LOQ/CL</u> 0.600	<u>DL</u> 0.180	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/29/16 16:41		
<b>Surrogates</b> 5a Androstane (surr)	105	50-150		%	1		09/29/16 16:41		
Patch Information									
Analytical Batch: XFC12888 Analytical Method: AK102 Analyst: CRA Analytical Date/Time: 09/29/16 16:41 Container ID: 1165536004-E			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36396 : SW3520C me: 09/27/ [,] /t./Vol.: 250 Vol: 1 mL	) 16 09:43 ) mL				
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.250 U	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/29/16 16:41		
Surrogates									
n-Triacontane-d62 (surr)	101	50-150		%	1		09/29/16 16:41		
Batch Information									
Analytical Batch: XFC12888 Analytical Method: AK103 Analyst: CRA Analytical Date/Time: 09/29/16 16:41 Container ID: 1165536004-E			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36396 : SW3520C me: 09/27/ [,] /t./Vol.: 250 Vol: 1 mL	C 16 09:43 ) mL				
Print Date: 10/03/2016 3:32:03PM						J flaggin	g is activated		

SGS				s US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
Results of <b>MW74A-0916</b> Client Sample ID: <b>MW74A-0916</b> Client Project ID: <b>105.00148.16001 F</b> L Lab Sample ID: 1165536004 Lab Project ID: 1165536	igro AKLNG	C R M S L	und)				
Results by Volatile Fuels							
Parameter Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/24/16 02:15
Surrogates 4-Bromofluorobenzene (surr)	84.3	50-150		%	1		09/24/16 02:15
Batch Information							
Analytical Batch: VFC13322 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/24/16 02:15 Container ID: 1165536004-B		F F F	Prep Batch: N Prep Method: Prep Date/Tin Prep Initial W Prep Extract N	VXX29625 SW5030E ne: 09/23/ 't./Vol.: 5 m Vol: 5 mL	3 16 06:00 1L		

SGS				s US,	LNG Fa Sampling a AL-FG-GF	acilities Ground and Testing Re RZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
Results of MW74A-0916							
Client Sample ID: <b>MW74A-0916</b> Client Project ID: <b>105.00148.16001 Fu</b> Lab Sample ID: 1165536004 Lab Project ID: 1165536	igro AKLNG	C R M S	collection Da leceived Dat latrix: Water olids (%): ocation:	te: 09/17/ te: 09/18/ [,] (Surface,	09/17/16 10:37 09/18/16 07:45 Surface, Eff., Ground)		
Results by Waters Department			<u> </u>				
Parameter	Result Qual	LOQ/CL	DL	Units	DF	<u>Allowable</u> Limits	Date Analyzed
Chloride	4.22	0.200	0.0620	ma/L	1		09/18/16 10:35
Fluoride	0.218	0.200	0.0620	ma/l	1		09/18/16 10:35
Nitrate-N	0.100 U	0.200	0.0620	ma/l	1		09/18/16 10:35
Nitrite-N	0.100 U	0.200	0.0620	ma/l	1		09/18/16 10:35
Sulfate	1 25	0.200	0.0620	ma/l	1		09/18/16 10:35
Cunato	1.20	0.200	0.0020	iiig/L	I		00/10/10 10:00
Batch Information							
Analytical Batch: WIC5565 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/18/16 10:35 Container ID: 1165536004-H			Prep Batch: N Prep Method: Prep Date/Tir Prep Initial W Prep Extract N	WXX11625 METHOD ne: 09/18/1 t./Vol.: 10 n Vol: 10 mL	16 09:00 mL		
<u>Parameter</u> Turbidity	<u>Result Qual</u> 38.0	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/18/16 09:03
Batch Information							
Analytical Batch: WAT10739 Analytical Method: SM21 2130B Analyst: ACF Analytical Date/Time: 09/18/16 09:03 Container ID: 1165536004-I							
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 89.9	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 16:25
Batch Information							
Analytical Batch: WTI4518 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/23/16 16:25 Container ID: 1165536004-I							
<u>Parameter</u> Total Dissolved Solids	<u>Result</u> Qual 141	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	<u>Date Analyzed</u> 09/21/16 18:31
Print Date: 10/03/2016 3:32:03PM						J flagging	g is activated

SGS		Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16						
- Results of MW74A-0916								
Client Sample ID: MW74A-0916 Client Project ID: 105.00148.16001 Fo Lab Sample ID: 1165536004 Lab Project ID: 1165536	ugro AKLNG	C R M Si La	ollection Da eceived Da latrix: Wate olids (%): ocation:	ate: 09/17/1 te: 09/18/16 r (Surface, E	6 10:37 6 07:45 Eff., Gro	7 ; pund)		
Results by Waters Department			]					
Batch Information								
Analytical Batch: STS5211 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/21/16 18:31 Container ID: 1165536004-I								
Parameter Total Suspended Solids	<u>Result Qual</u> 78.3	<u>LOQ/CL</u> 1.04	<u>DL</u> 0.323	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/21/16 12:00	
Batch Information Analytical Batch: STS5215 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/21/16 12:00 Container ID: 1165536004-G								
<u>Parameter</u> pH	<u>Result Qual</u> 8.70	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 09/23/16 16:25	
Batch Information Analytical Batch: WTI4513 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 16:25 Container ID: 1165536004-I								
Print Date: 10/03/2016 3:32:03PM						J flaggin	g is activated	
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### Results of MW74B-0916

Client Sample ID: MW74B-0916 Client Project ID: 105.00148.16001 Fugro AKLNG Lab Sample ID: 1165536005 Lab Project ID: 1165536 Collection Date: 09/17/16 12:41 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Metals by ICP/MS

					Al	lowable	
Parameter_	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	780	8.00	2.48	ug/L	10		09/22/16 13:35
Antimony	0.0599	0.0500	0.0150	ug/L	2.5		09/22/16 12:30
Arsenic	1.18	0.800	0.200	ug/L	2.5		09/22/16 12:30
Barium	31.1	0.250	0.0400	ug/L	2.5		09/22/16 12:30
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 12:30
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:30
Boron	4.56 J	5.00	1.50	ug/L	2.5		09/22/16 12:30
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:30
Calcium	10800	50.0	15.0	ug/L	2.5		09/22/16 12:30
Chromium	3.25	0.500	0.150	ug/L	2.5		09/22/16 12:30
Cobalt	1.32	0.0200	0.0100	ug/L	2.5		09/22/16 12:30
Copper	1.30	0.500	0.200	ug/L	2.5		09/22/16 12:30
Iron	3800	20.0	6.20	ug/L	2.5		09/22/16 12:30
Lead	0.469	0.100	0.0310	ug/L	2.5		09/22/16 12:30
Magnesium	3600	20.0	6.20	ug/L	2.5		09/22/16 12:30
Manganese	140	0.100	0.0310	ug/L	2.5		09/22/16 12:30
Molybdenum	0.304	0.0500	0.0150	ug/L	2.5		09/22/16 12:30
Nickel	3.00	0.620	0.0620	ug/L	2.5		09/22/16 12:30
Potassium	1640	50.0	15.0	ug/L	2.5		09/22/16 12:30
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 12:30
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:30
Sodium	5750	100	31.0	ug/L	2.5		09/22/16 12:30
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:30
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 12:30
Vanadium	1.79	1.00	0.310	ug/L	2.5		09/22/16 12:30
Zinc	4.32	3.10	0.400	ug/L	2.5		09/22/16 12:30

### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 13:35 Container ID: 1165536005-A Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/03/2016 3:32:03PM

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SGS				S US/	LNG Fa Sampling a AL-FG-GR	acilities Ground Ind Testing Re RZZZ-00-00201	Confidential Iwater Quality port - Event 2 I6-004 Rev. 0 16-Dec-16		
- Results of MW74B-0916									
Client Sample ID: <b>MW74B-0916</b> Client Project ID: <b>105.00148.16001 Fo</b> Lab Sample ID: 1165536005 Lab Project ID: 1165536	ugro AKLNG	Collection Date: 09/17/16 12:41 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by Semivolatile Organic Fue	s		_						
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.278 J	<u>LOQ/CL</u> 0.636	<u>DL</u> 0.191	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/29/16 16:51		
<b>Surrogates</b> 5a Androstane (surr)	99.8	50-150		%	1		09/29/16 16:51		
Batch Information Analytical Batch: XFC12888 Analytical Method: AK102 Analyst: CRA Analytical Date/Time: 09/29/16 16:51 Container ID: 1165536005-E			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36396 : SW3520C me: 09/27/1 /t./Vol.: 236 Vol: 1 mL	; 16 09:43 5 mL				
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.265 U	<u>LOQ/CL</u> 0.530	<u>DL</u> 0.159	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/29/16 16:51		
Surrogates									
n-Triacontane-d62 (surr)	97.8	50-150		%	1		09/29/16 16:51		
Batch Information									
Analytical Batch: XFC12888 Analytical Method: AK103 Analyst: CRA Analytical Date/Time: 09/29/16 16:51 Container ID: 1165536005-E			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36396 : SW3520C me: 09/27/1 /t./Vol.: 236 Vol: 1 mL	; 16 09:43 9 mL				
Print Date: 10/03/2016 3:32:03PM						J flaggin	g is activated		

SGS				S	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16		
Results of <b>MW74B-0916</b> Client Sample ID: <b>MW74B-0916</b> Client Project ID: <b>105.00148.16001 Fu</b> Lab Sample ID: 1165536005 Lab Project ID: 1165536	igro AKLNG	Collection Date: 09/17/16 12:41 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%):							
Results by Volatile Fuels			]						
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzec 09/24/16 03:1:		
u <b>rrogates</b> 4-Bromofluorobenzene (surr)	84.5	50-150		%	1		09/24/16 03:1		
Satch InformationAnalytical Batch: VFC13322Analytical Method: AK101Analyst: STAnalytical Date/Time: 09/24/16 03:12Container ID: 1165536005-B			Prep Batch: \ Prep Method: Prep Date/Tir Prep Initial W Prep Extract \	VXX29625 SW5030E ne: 09/23/ t./Vol.: 5 m Vol: 5 mL	3 16 06:00 1L				

SGS		LNG Facilities Groundwater Qu Sampling and Testing Report - Eve USAL-FG-GRZZZ-00-002016-004 Re 16-Dec							
Results of MW74B-0916									
Client Sample ID: <b>MW74B-0916</b> Client Project ID: <b>105.00148.16001 Ft</b> Lab Sample ID: 1165536005 Lab Project ID: 1165536	ıgro AKLNG	C R M S L	ollection Da eceived Da latrix: Water olids (%): ocation:	te: 09/17/ te: 09/18/ ⁻ (Surface,	16 12:41 16 07:45 Eff., Gro	und)			
Results by Waters Department									
<u>Parameter</u> Chloride Fluoride	<u>Result Qual</u> 11.2 0.118 J	<u>LOQ/CL</u> 0.200 0.200	<u>DL</u> 0.0620 0.0620	<u>Units</u> mg/L mg/L	<u>DF</u> 1 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/18/16 10:57 09/18/16 10:57		
Nitrate-N Nitrite-N Sulfate	0.100 U 0.100 U 5.50	0.200 0.200 0.200	0.0620 0.0620 0.0620	mg/L mg/L mg/L	1 1 1		09/18/16 10:57 09/18/16 10:57 09/18/16 10:57		
Batch Information Analytical Batch: WIC5565 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/18/16 10:57 Container ID: 1165536005-H		F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11625 METHOD ne: 09/18/1 t./Vol.: 10 n Vol: 10 mL	16 09:00 mL				
<u>Parameter</u> Turbidity	<u>Result Qual</u> 7.60	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/18/16 09:03		
Batch Information Analytical Batch: WAT10739 Analytical Method: SM21 2130B Analyst: ACF Analytical Date/Time: 09/18/16 09:03 Container ID: 1165536005-I									
<u>Parameter</u> Alkalinity	Result Qual 42.5	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 16:32		
Batch Information Analytical Batch: WTI4518 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/23/16 16:32 Container ID: 1165536005-I									
Parameter Total Dissolved Solids	Result Qual 115	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/21/16 18:31		
Print Date: 10/03/2016 3:32:03PM						J flaggin	g is activated		

SGS		Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16						
Results of MW74B-0916								
Client Sample ID: <b>MW74B-0916</b> Client Project ID: <b>105.00148.16001 Fu</b> Lab Sample ID: 1165536005 Lab Project ID: 1165536	ugro AKLNG	C R M S L	ollection Da eceived Da latrix: Wate olids (%): ocation:	ate: 09/17/1 te: 09/18/16 r (Surface, E	6 12:4′ 6 07:45 Eff., Gro	1 ; pund)		
- Results by Waters Department			]					
Batch Information								
Analytical Batch: STS5211 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/21/16 18:31 Container ID: 1165536005-I								
Parameter Total Suspended Solids	<u>Result Qual</u> 11.8	<u>LOQ/CL</u> 1.64	<u>DL</u> 0.508	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/21/16 12:00	
Batch Information Analytical Batch: STS5215 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/21/16 12:00 Container ID: 1165536005-G								
<u>Parameter</u> pH	<u>Result Qual</u> 6.70	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 16:32	
Batch Information Analytical Batch: WTI4513 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 16:32 Container ID: 1165536005-I								
Print Date: 10/03/2016 3:32:03PM		ivo Anchorara				J flaggin	g is activated	
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### Results of MW82A-0916

Client Sample ID: MW82A-0916 Client Project ID: 105.00148.16001 Fugro AKLNG Lab Sample ID: 1165536006 Lab Project ID: 1165536 Collection Date: 09/16/16 10:37 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Dissolved Metals by ICP/MS

						Allowable		
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 12:33 Container ID: 1165536006-A		Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL						
Batch Information								
Zinc	0.551 J	3.10	0.400	ug/L	2.5		09/22/16 12:33	
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 12:33	
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 12:33	
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:33	
Sodium	4690	100	31.0	ug/L	2.5		09/22/16 12:33	
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:33	
Silicon	15100	100	31.0	ug/L	2.5		09/22/16 12:33	
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 12:33	
Potassium	2560	50.0	15.0	ug/L	2.5		09/22/16 12:33	
Nickel	0.426 J	0.620	0.0620	ug/L	2.5		09/22/16 12:33	
Molybdenum	0.461	0.0500	0.0150	ug/L	2.5		09/22/16 12:33	
Manganese	91.6	0.100	0.0310	ug/L	2.5		09/22/16 12:33	
Magnesium	4510	20.0	6.20	ug/L	2.5		09/22/16 12:33	
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		09/22/16 12:33	
Iron	32.4	20.0	6.20	ug/L	2.5		09/22/16 12:33	
Copper	0.250 U	0.500	0.200	ug/L	2.5		09/22/16 12:33	
Cobalt	0.0357	0.0200	0.0100	ug/L	2.5		09/22/16 12:33	
Chromium	0.250 U	0.500	0.150	ug/L	2.5		09/22/16 12:33	
Calcium	18500	50.0	15.0	ug/L	2.5		09/22/16 12:33	
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:33	
Boron	12.2	5.00	1.50	ug/L	2.5		09/22/16 12:33	
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:33	
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 12:33	
Barium	9.07	0.250	0.0400	ug/L	2.5		09/22/16 12:33	
Arsenic	7.87	0.800	0.200	ug/L	2.5		09/22/16 12:33	
Antimony	0.0230 J	0.0500	0.0150	ug/L	2.5		09/22/16 12:33	
Aluminum	2.12	2.00	0.620	ua/L	2.5		09/22/16 12:33	
Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed	
						Allowable		

Print Date: 10/03/2016 3:32:03PM

Hardness as CaCO3

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1.00

1.00

2.5

mg/L

64.7

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09/22/16 12:33



### Results of MW82A-0916

Client Sample ID: MW82A-0916 Client Project ID: 105.00148.16001 Fugro AKLNG Lab Sample ID: 1165536006 Lab Project ID: 1165536 Collection Date: 09/16/16 10:37 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Dissolved Metals by ICP/MS

### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 12:33 Container ID: 1165536006-A Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/03/2016 3:32:03PM

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### Results of MW82B-0916

Client Sample ID: MW82B-0916 Client Project ID: 105.00148.16001 Fugro AKLNG Lab Sample ID: 1165536007 Lab Project ID: 1165536 Collection Date: 09/16/16 13:31 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Dissolved Metals by ICP/MS

		1.0.0.161				Allowable	
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 12:36 Container ID: 1165536007-A			Prep Batch: M Prep Method: Prep Date/Tim Prep Initial Wt Prep Extract V	IXX30212 E200.2 e: 09/21/1 /Vol.: 50 r ol: 10 mL	16 07:23 mL		
Batch Information	-	-			-		
Zinc	8.35	3.10	0.400	ug/L	2.5		09/22/16 12:36
Vanadium	0.706 J	1.00	0.310	ug/L	2.5		09/22/16 12:36
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 12:36
Thallium	0.0100 U	0.0200	0.00620	ua/L	2.5		09/22/16 12:36
Sodium	14000	100	31.0	ug/l	2.5		09/22/16 12:36
Silver	0.0100 U	0 0200	0.00620	ug/L	2.5		09/22/16 12:36
Silicon	14000	100	31.0	ug/L	2.5		09/22/16 12:36
Selenium	0.500 11	1 00	0.310	ug/L	2.0 2.5		09/22/10 12.00
	1.37	0.020 50.0	0.0020 15.0	ug/L	2.5		09/22/10 12:30
Niekel	0.119	0.0500	0.0150	ug/L	2.5		09/22/16 12:36
Malubdamum	37.2	0.100	0.0310	ug/L	2.5		09/22/16 12:36
Manager	4060	20.0	0.20	ug/L	2.5		09/22/16 12:36
	0.0500 U	0.100	0.0310	ug/L	2.5		09/22/16 12:36
Iron	615	20.0	6.20	ug/L	2.5		09/22/16 12:36
Copper	0.403 J	0.500	0.200	ug/L	2.5		09/22/16 12:36
Cobait	0.291	0.0200	0.0100	ug/L	2.5		09/22/16 12:36
Chromium	0.250 U	0.500	0.150	ug/L	2.5		09/22/16 12:36
Calcium	19000	50.0	15.0	ug/L	2.5		09/22/16 12:36
Cadmium	0.0391 J	0.0500	0.0150	ug/L	2.5		09/22/16 12:36
Boron	8.36	5.00	1.50	ug/L	2.5		09/22/16 12:36
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:36
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 12:36
Barium	9.78	0.250	0.0400	ug/L	2.5		09/22/16 12:36
Arsenic	0.400 U	0.800	0.200	ug/L	2.5		09/22/16 12:36
Antimony	0.118	0.0500	0.0150	ug/L	2.5		09/22/16 12:36
Aluminum	8.45	2.00	0.620	ug/L	2.5		09/22/16 12:36
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
						Allowable	

Parameter <u>Result Qual</u> LOQ/CL DL Units DF Limits Date Analyzed Hardness as CaCO3 66.7 1.00 1.00 2.5 09/22/16 12:36 mg/L Print Date: 10/03/2016 3:32:03PM J flagging is activated 200 West Potter Drive Anchorage, AK 95518

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### Results of MW82B-0916

Client Sample ID: MW82B-0916 Client Project ID: 105.00148.16001 Fugro AKLNG Lab Sample ID: 1165536007 Lab Project ID: 1165536 Collection Date: 09/16/16 13:31 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Dissolved Metals by ICP/MS

### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 12:36 Container ID: 1165536007-A Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/03/2016 3:32:03PM

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### Results of MW27B-0916

Client Sample ID: MW27B-0916 Client Project ID: 105.00148.16001 Fugro AKLNG Lab Sample ID: 1165536008 Lab Project ID: 1165536 Collection Date: 09/16/16 16:55 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Dissolved Metals by ICP/MS

Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable Limits	Date Analyzed
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 12:39 Container ID: 1165536008-A		F F F F	Prep Batch: N Prep Method: Prep Date/Tim Prep Initial Wt Prep Extract V				
Batch Information							
Zinc	3.87	3.10	0.400	ug/L	2.5		09/22/16 12:39
Vanadium	0.331 J	1.00	0.310	ug/L	2.5		09/22/16 12:39
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 12:39
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:39
Sodium	8000	100	31.0	ug/L	2.5		09/22/16 12:39
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:39
Silicon	16200	100	31.0	ug/L	2.5		09/22/16 12:39
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 12:39
Potassium	2040	50.0	15.0	ug/L	2.5		09/22/16 12:39
Nickel	1.90	0.620	0.0620	ug/L	2.5		09/22/16 12:39
Molybdenum	0.103	0.0500	0.0150	ug/L	2.5		09/22/16 12:39
Manganese	394	0.100	0.0310	ug/L	2.5		09/22/16 12:39
Magnesium	6160	20.0	6.20	ug/L	2.5		09/22/16 12:39
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		09/22/16 12:39
Iron	7830	20.0	6.20	ug/L	2.5		09/22/16 12:39
Copper	0.237 J	0.500	0.200	ug/L	2.5		09/22/16 12:39
Cobalt	0.373	0.0200	0.0100	ug/L	2.5		09/22/16 12:39
Chromium	0.199 J	0.500	0.150	ug/L	2.5		09/22/16 12:39
Calcium	18100	50.0	15.0	ug/L	2.5		09/22/16 12:39
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:39
Boron	4.93 J	5.00	1.50	ug/L	2.5		09/22/16 12:39
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:39
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 12:39
Barium	62.9	0.250	0.0400	ug/L	2.5		09/22/16 12:39
Arsenic	0.824	0.800	0.200	ug/L	2.5		09/22/16 12:39
Antimony	0.0682	0.0500	0.0150	ug/L	2.5		09/22/16 12:39
Aluminum	9.46	2.00	0.620	ua/L	2.5		09/22/16 12:39
Parameter	Result Qual	LOQ/CL	DL	Units	DF	Limits	Date Analyzed
						Allowable	

Print Date: 10/03/2016 3:32:03PM

Hardness as CaCO3

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1.00

1.00

2.5

mg/L

70.5

J flagging is activated

Member of SGS Group

09/22/16 12:39



### Results of MW27B-0916

Client Sample ID: MW27B-0916 Client Project ID: 105.00148.16001 Fugro AKLNG Lab Sample ID: 1165536008 Lab Project ID: 1165536 Collection Date: 09/16/16 16:55 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Dissolved Metals by ICP/MS

### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 12:39 Container ID: 1165536008-A Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/03/2016 3:32:03PM

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### Results of MW74A-0916

Client Sample ID: MW74A-0916 Client Project ID: 105.00148.16001 Fugro AKLNG Lab Sample ID: 1165536009 Lab Project ID: 1165536 Collection Date: 09/17/16 10:37 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Dissolved Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	35.6	2.00	0.620	ug/L	2.5		09/22/16 12:41
Antimony	0.0801	0.0500	0.0150	ug/L	2.5		09/22/16 12:41
Arsenic	48.8	0.800	0.200	ug/L	2.5		09/22/16 12:41
Barium	3.41	0.250	0.0400	ug/L	2.5		09/22/16 12:41
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 12:41
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:41
Boron	122	5.00	1.50	ug/L	2.5		09/22/16 12:41
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:41
Calcium	2930	50.0	15.0	ug/L	2.5		09/22/16 12:41
Chromium	0.250 U	0.500	0.150	ug/L	2.5		09/22/16 12:41
Cobalt	0.0501	0.0200	0.0100	ug/L	2.5		09/22/16 12:41
Copper	0.267 J	0.500	0.200	ug/L	2.5		09/22/16 12:41
Iron	60.6	20.0	6.20	ug/L	2.5		09/22/16 12:41
Lead	0.0330 J	0.100	0.0310	ug/L	2.5		09/22/16 12:41
Magnesium	1480	20.0	6.20	ug/L	2.5		09/22/16 12:41
Manganese	21.8	0.100	0.0310	ug/L	2.5		09/22/16 12:41
Molybdenum	1.19	0.0500	0.0150	ug/L	2.5		09/22/16 12:41
Nickel	0.364 J	0.620	0.0620	ug/L	2.5		09/22/16 12:41
Potassium	7070	50.0	15.0	ug/L	2.5		09/22/16 12:41
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 12:41
Silicon	11500	100	31.0	ug/L	2.5		09/22/16 12:41
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:41
Sodium	31000	400	124	ug/L	10		09/22/16 13:38
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:41
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 12:41
Vanadium	0.310 J	1.00	0.310	ug/L	2.5		09/22/16 12:41
Zinc	0.941 J	3.10	0.400	ug/L	2.5		09/22/16 12:41
Batch Information							
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 12:41 Container ID: 1165536009-A			Prep Batch: M Prep Method: Prep Date/Tim Prep Initial Wt Prep Extract V	/IXX30212 E200.2 ne: 09/21/1 ./Vol.: 50 r /ol: 10 mL	16 07:23 mL		
<u>Parameter</u> Hardness as CaCO3	<u>Result Qual</u> 13.4	<u>LOQ/CL</u> 1.00	<u>DL</u> 1.00	<u>Units</u> mg/L	<u>DF</u> 2.5	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/22/16 12:41

Print Date: 10/03/2016 3:32:03PM

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### Results of MW74A-0916

Client Sample ID: MW74A-0916 Client Project ID: 105.00148.16001 Fugro AKLNG Lab Sample ID: 1165536009 Lab Project ID: 1165536 Collection Date: 09/17/16 10:37 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Dissolved Metals by ICP/MS

### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 12:41 Container ID: 1165536009-A Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/03/2016 3:32:03PM

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### Results of MW74B-0916

Client Sample ID: MW74B-0916 Client Project ID: 105.00148.16001 Fugro AKLNG Lab Sample ID: 1165536010 Lab Project ID: 1165536

Collection Date: 09/17/16 12:41 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Dissolved Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	25.6	2.00	0.620	ug/L	2.5		09/22/16 12:44
Antimony	0.0363 J	0.0500	0.0150	ug/L	2.5		09/22/16 12:44
Arsenic	1.08	0.800	0.200	ug/L	2.5		09/22/16 12:44
Barium	25.6	0.250	0.0400	ug/L	2.5		09/22/16 12:44
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 12:44
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:44
Boron	4.79 J	5.00	1.50	ug/L	2.5		09/22/16 12:44
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:44
Calcium	11100	50.0	15.0	ug/L	2.5		09/22/16 12:44
Chromium	0.294 J	0.500	0.150	ug/L	2.5		09/22/16 12:44
Cobalt	1.07	0.0200	0.0100	ug/L	2.5		09/22/16 12:44
Copper	0.250 U	0.500	0.200	ug/L	2.5		09/22/16 12:44
Iron	3400	20.0	6.20	ug/L	2.5		09/22/16 12:44
Lead	0.0365 J	0.100	0.0310	ug/L	2.5		09/22/16 12:44
Magnesium	3680	20.0	6.20	ug/L	2.5		09/22/16 12:44
Manganese	141	0.100	0.0310	ug/L	2.5		09/22/16 12:44
Molybdenum	0.222	0.0500	0.0150	ug/L	2.5		09/22/16 12:44
Nickel	1.72	0.620	0.0620	ug/L	2.5		09/22/16 12:44
Potassium	1710	50.0	15.0	ug/L	2.5		09/22/16 12:44
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 12:44
Silicon	15700	100	31.0	ug/L	2.5		09/22/16 12:44
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:44
Sodium	6030	100	31.0	ug/L	2.5		09/22/16 12:44
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:44
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 12:44
Vanadium	0.546 J	1.00	0.310	ug/L	2.5		09/22/16 12:44
Zinc	2.37 J	3.10	0.400	ug/L	2.5		09/22/16 12:44
Batch Information							

Analytical Batch: MMS9544 Prep Batch: MXX30212 Analytical Method: 200.8 Low Level Prep Method: E200.2 Analyst: VDL Prep Date/Time: 09/21/16 07:23 Analytical Date/Time: 09/22/16 12:44 Prep Initial Wt./Vol.: 50 mL Container ID: 1165536010-A Prep Extract Vol: 10 mL Parameter Result Qual LOQ/CL DL DF Units Hardness as CaCO3 42.9 1.00 1.00 2.5 mg/L Print Date: 10/03/2016 3:32:03PM

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Allowable

<u>Limits</u>

Member of SGS Group

Date Analyzed

09/22/16 12:44



### Results of MW74B-0916

Client Sample ID: MW74B-0916 Client Project ID: 105.00148.16001 Fugro AKLNG Lab Sample ID: 1165536010 Lab Project ID: 1165536 Collection Date: 09/17/16 12:41 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Dissolved Metals by ICP/MS

### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 12:44 Container ID: 1165536010-A Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/03/2016 3:32:03PM

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SGS				S US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
Results of <b>TB1-0916</b> Client Sample ID: <b>TB1-0916</b> Client Project ID: <b>105.00148.16001 Fu</b> Lab Sample ID: 1165536011 Lab Project ID: 1165536	Collection Date: 09/16/16 10:37 Received Date: 09/18/16 07:45 Matrix: Water (Surface, Eff., Ground) Solids (%):						
Results by Volatile Fuels		Lo	ocation:				
Parameter Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/23/16 19:53
<b>urrogates</b> 4-Bromofluorobenzene (surr)	86.7	50-150		%	1		09/23/16 19:53
<b>Batch Information</b> Analytical Batch: VFC13322 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/23/16 19:53 Container ID: 1165536011-A		F F F F	Prep Batch: N Prep Method: Prep Date/Tin Prep Initial W Prep Extract N	VXX29625 SW5030E ne: 09/23/ t./Vol.: 5 m Vol: 5 mL	6 6 06:00 L		
rint Date: 10/03/2016 3:32:03PM						J flaqqin	g is activated

200 West Potter Drive Anchorage, AK 95518 t 907.562.2343 f 907.561.5301 www.us.sgs.com

969				S US/	LNG Fa ampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
Results of <b>TB2-0916</b> Client Sample ID: <b>TB2-0916</b> Client Project ID: <b>105.00148.16001</b> Lab Sample ID: 1165536012 Lab Project ID: 1165536	C R M S L						
Results by Volatile Fuels			_				
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/28/16 02:4
<b>urrogates</b> 4-Bromofluorobenzene (surr)	85.3	50-150		%	1		09/28/16 02:4
Batch Information Analytical Batch: VFC13329 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/28/16 02:44 Container ID: 1165536012-A	Ļ	F F F	Prep Batch: \ Prep Method: Prep Date/Tin Prep Initial W Prep Extract \	/XX29646 SW5030B ne: 09/27/1 t./Vol.: 5 m /ol: 5 mL	6 06:00 L		

t 907.562.2343 f 907.561.5301 www.us.sgs.com



## Method Blank

Blank ID: MB for HBN 1743425 [MXX/30212] Blank Lab ID: 1353297 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165536001, 1165536002, 1165536003, 1165536004, 1165536005, 1165536006, 1165536007, 1165536008, 1165536009, 1165536010

### Results by 200.8 Low Level Parameter Results LOQ/CL DL Units Aluminum 1.00U 2.00 0.620 ug/L Antimony 0.0250U 0.0500 0.0150 ug/L Arsenic 0.400U 0.800 0.200 ug/L Barium 0.125U 0.250 0.0400 ug/L Beryllium 0.0250U 0.0500 0.0250 ug/L Bismuth 0.0250U 0.0500 0.0150 ug/L Boron 2.50U 5.00 1.50 ug/L Cadmium 0.0250U 0.0500 0.0150 ug/L Calcium 25.0U 50.0 15.0 ug/L Chromium 0.250U 0.500 0.150 ug/L Cobalt 0.0100U 0.0200 0.0100 ug/L Copper 0.250U 0.500 0.200 ug/L Iron 10.0U 20.0 6.20 ug/L Lead 0.0500U 0.100 0.0310 ug/L Magnesium 10.0U 20.0 6.20 ug/L Manganese 0.0500U 0.100 0.0310 ug/L Molybdenum 0.0250U 0.0500 0.0150 ug/L Nickel 0.310U 0.620 0.0620 ug/L 25.0U 50.0 15.0 Potassium ug/L

0.500U

50.0U

50.0U

0.0100U

0.0100U

0.100U

0.500U

1.11J

Analytical Batch: MMS9544
Analytical Method: 200.8 Low Level
Instrument: Perkin Elmer Nexlon P5
Apolyot: VDI

Analyst: VDL Analytical Date/Time: 9/22/2016 11:28:54AM Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 9/21/2016 7:23:38AM Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

0.310

31.0

31.0

0.00620

0.00620

0.0620

0.310

0.400

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

ug/L

Print Date: 10/03/2016 3:32:07PM

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1.00

100

100

0.0200

0.0200

0.200

1.00

3.10

Selenium

Silicon

Silver

Sodium

Thallium

Vanadium

**Batch Information** 

Tin

Zinc


Blank Spike ID: LCS for HBN 1165536 [MXX30212] Blank Spike Lab ID: 1353298 Date Analyzed: 09/22/2016 11:31

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165536001, 1165536002, 1165536003, 1165536004, 1165536005, 1165536006, 1165536007, 1165536008, 1165536009, 1165536010

Results by 200.8 Low Level				
	В	lank Spike	(ug/L)	
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>
Aluminum	50	45.5	91	(85-115)
Antimony	5	5.38	108	(85-115)
Arsenic	25	24.4	98	(85-115)
Barium	25	25.4	101	(85-115)
Beryllium	12.5	11.4	91	(85-115)
Bismuth	12.5	12.1	97	(85-115)
Boron	50	43.1	86	(85-115)
Cadmium	12.5	12.6	101	(85-115)
Calcium	5000	4380	88	(85-115)
Chromium	12.5	11.6	93	(85-115)
Cobalt	12.5	12.1	97	(85-115)
Copper	25	24.3	97	(85-115)
Iron	500	475	95	(85-115)
Lead	5	4.91	98	(85-115)
Magnesium	5000	4460	89	(85-115)
Manganese	50	47.8	96	(85-115)
Molybdenum	12.5	12.3	99	(85-115)
Nickel	12.5	11.9	95	(85-115)
Potassium	5000	4580	92	(85-115)
Selenium	25	24.1	96	(85-115)
Silicon	2500	2260	91	(85-115)
Silver	5	4.95	99	(85-115)
Sodium	5000	4550	91	(85-115)
Thallium	2.5	2.48	99	(85-115)
Tin	12.5	12.3	99	(85-115)
Vanadium	25	23.7	95	(85-115)
Zinc	50	52.4	105	(85-115)

# **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/2016 07:23 Spike Init Wt./Vol.: 50 ug/L Extract Vol: 10 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/03/2016 3:32:09PM

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#### Matrix Spike Summary

Original Sample ID: 1353299 MS Sample ID: 1353300 MS MSD Sample ID: 1353301 MSD Analysis Date: 09/22/2016 15:03 Analysis Date: 09/22/2016 15:06 Analysis Date: 09/22/2016 15:09 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 116

les: 1165536001, 1165536002, 1165536003, 1165536004, 1165536005, 1165536006, 1165536007, 1165536008, 1165536009, 1165536010

Results by 200.8 Low Level											
·		Ma	trix Spike (	ug/L)	Spike	e Duplicate	e (ug/L)				
Parameter	Sample	Spike	Result	<u>Rec (%)</u>	Spike	Result	<u>Rec (%</u>	<u>6)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Aluminum	2160	50.0	2250	168 *	50.0	2370	426	*	70-130	5.60	(< 20)
Antimony	0.111	5.00	5.07	99	5.00	5.20	102		70-130	2.40	(< 20)
Arsenic	8.83	25.0	32	93	25.0	33.1	97		70-130	3.50	(< 20)
Barium	21.2	25.0	56	139 *	25.0	56.0	139	*	70-130	0.02	(< 20)
Beryllium	0.0332J	12.5	11.6	93	12.5	11.7	93		70-130	0.80	(< 20)
Bismuth	0.0169J	12.5	11.6	93	12.5	11.6	92		70-130	0.27	(< 20)
Boron	12.6	50.0	59.2	93	50.0	58.7	92		70-130	0.99	(< 20)
Cadmium	0.0683	12.5	12	96	12.5	12.5	100		70-130	4.00	(< 20)
Calcium	19500	5000	23700	84	5000	23600	82		70-130	0.45	(< 20)
Chromium	4.07	12.5	17.6	108	12.5	18.1	112		70-130	2.70	(< 20)
Cobalt	0.957	12.5	12.9	95	12.5	13.7	102		70-130	6.40	(< 20)
Copper	3.26	25.0	26	91	25.0	27.3	96		70-130	4.90	(< 20)
Iron	2560	500	3190	126	500	3240	135	*	70-130	1.40	(< 20)
Lead	0.937	5.00	5.76	97	5.00	5.78	97		70-130	0.29	(< 20)
Magnesium	5290	5000	9920	93	5000	10000	95		70-130	0.97	(< 20)
Manganese	136	50.0	183	95	50.0	191	111		70-130	4.40	(< 20)
Molybdenum	0.529	12.5	12.7	98	12.5	13.3	102		70-130	3.90	(< 20)
Nickel	3.53	12.5	15.6	97	12.5	16.3	102		70-130	4.40	(< 20)
Potassium	2820	5000	7960	103	5000	7760	99		70-130	2.50	(< 20)
Selenium	0.500U	25.0	21.5	86	25.0	22.2	89		70-130	2.80	(< 20)
Silver	0.0100U	5.00	4.66	93	5.00	4.90	98		70-130	5.20	(< 20)
Sodium	5050	5000	9980	99	5000	10100	101		70-130	1.10	(< 20)
Thallium	0.00840J	2.50	2.42	97	2.50	2.46	98		70-130	1.40	(< 20)
Tin	0.156J	12.5	11.3	89	12.5	11.2	89		70-130	0.19	(< 20)
Vanadium	4.19	25.0	28.2	96	25.0	30.4	105		70-130	7.30	(< 20)
Zinc	47.5	50.0	90.9	87	50.0	92.7	90		70-130	1.90	(< 20)

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Analytical Date/Time: 9/22/2016 3:06:11PM Prep Batch: MXX30212 Prep Method: LL Digest for Metals on ICP-MS Prep Date/Time: 9/21/2016 7:23:38AM Prep Initial Wt./Vol.: 50.00mL Prep Extract Vol: 10.00mL

Print Date: 10/03/2016 3:32:11PM

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#### Bench Spike Summary

Original Sample ID: 1353299 MS Sample ID: 1353302 BND MSD Sample ID: Analysis Date: 09/22/2016 15:03 Analysis Date: 09/22/2016 15:11 Analysis Date: Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165536001, 1165536002, 1165536003, 1165536004, 1165536005, 1165536006, 1165536007, 1165536008, 1165536009, 1165536010

		Ma	triv Spike (		Colle	o Duplicat				
	0 - marks	Quilles		ug/L)	Эрікі					
	<u>Sample</u> 2160	<u>Spike</u> 500	<u>Result</u> 2610	<u>Rec (%)</u> 90	Spike	Result	<u>Rec (%)</u>	<u>CL</u> 70-130	<u>RPD (%)</u>	RPD CL
Sarium	2100	25.0	47 1	104				70-130		
ron	2560	500	3100	103				70-130		
	2000	000	0100	100				10 100		
Batch Information										
Analytical Batch: MMS Analytical Method: 200 Instrument: Perkin Elm Analyst: VDL Analytical Date/Time: 9	9544 9.8 Low Level ler Nexlon P5 9/22/2016 3:11:58	3PM		Prep Prep Prep Prep Prep	Batch: Method: Date/Tim Date/Tim Initial Wt	/IXX30212 LL Diges ne: 9/21/2 /Vol.: 50. /ol: 10.00	2 t for Metals 016 7:23:3 .00mL mL	on ICP-MS 8AM	6	

Method Blank							
Blank ID: MB for HBN 17 Blank Lab ID: 1352482	43253 [STS/5211]	Matrix: Water (Surface, Eff., Ground)					
QC for Samples: 1165536001, 1165536002,	1165536003, 1165536004, 11	65536005					
Results by SM21 2540C		)					
		1.00/01	DI	Units			
Parameter Fotal Dissolved Solids	<u>Results</u> 5.00U	<u>LOQ/CL</u> 10.0	<u>3.10</u>	mg/L			
Parameter Total Dissolved Solids atch Information	<u>Results</u> 5.00U	<u>LOQ/CL</u> 10.0	<u></u> 3.10	mg/L			

Print Date: 10/03/2016 3:32:13PM



Duplicate Sample Summar	У				
Original Sample ID: 116555 Duplicate Sample ID: 13536	50009 605		Analysis Date: Matrix: Water (	09/21/2016 18:31 Surface, Eff., Groui	nd)
QC for Samples:					
1165536001, 1165536002,	1165536003, 11655	536004, 1165536005			
Results by SM21 2540C					
NAME_	<u>Original</u>	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL
Total Dissolved Solids	140	139	mg/L	0.72	(< 5)
Batch Information					
Analytical Batch: STS5211 Analytical Method: SM21 25 Instrument: Analyst: KBE	40C				

Print Date: 10/03/2016 3:32:18PM



Duplicate Sample Summar	у				
Original Sample ID: 116554 Duplicate Sample ID: 1353	46001 884		Analysis Date: Matrix: Water (	09/21/2016 18:31 Surface, Eff., Grou	nd)
QC for Samples:					
1165536001, 1165536002,	1165536003, 11655	536004, 1165536005			
Results by SM21 2540C					
NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL
Total Dissolved Solids	808	803	mg/L	0.62	(< 5)
Batch Information					
Analytical Batch: STS5211 Analytical Method: SM21 25 Instrument: Analyst: KBE	540C				
Print Date: 10/03/2016 3:32:18PM					



Blank Spike ID: LCS for HBN 1165536 [STS5211] Blank Spike Lab ID: 1352483 Date Analyzed: 09/21/2016 18:31 Spike Duplicate ID: LCSD for HBN 1165536 [STS5211] Spike Duplicate Lab ID: 1352484 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165536001, 1165536002, 1165536003, 1165536004, 1165536005

Results by SM21 2540C									
		Blank Spike	e (mg/L)	5	Spike Duplicate (mg/L)				
Parameter	<u>Spike</u>	Result	Rec (%)	Spike	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Total Dissolved Solids	330	331	100	330	345	105	(75-125)	4.10	(< 5)
Batch Information Analytical Batch: STS5211 Analytical Method: SM21 25400 Instrument: Analyst: KBE	2			Pre Pre Pre Spil Dup	o Batch: o Method: o Date/Time ke Init Wt./V e Init Wt./V	e: /ol.: 330 mg /ol.: 330 mg	j/L Extract \ /L Extract V	/ol: 100 mL pl: 100 mL	

Print Date: 10/03/2016 3:32:19PM

	Method Blank						
	Blank ID: MB for HBN 1 Blank ba8 ID: 13/ 33QQ Cm for [ ap els6: 112/ / 32001, 112/ / 3200]	743442 <b>5</b> [ S[ T] 1/ L , 112/ / 32003, 112/ / 32004, 112	/ 3200/	Matrix	:: Watsr ([ urfa	acs, Eff., Ground)	
	Rs6ult6 8y <b>SM21 2540D</b>						
	<u>Parap stsr</u> Sotal [ u6esndsd [ olid6	<u>Rs6ult6</u> 0./ 00U		<u>bOCTmb</u> 1.00	<u>Db</u> 0.310	<u>Unit6</u> p v <b>T</b> o	
E	Batch Information gnalytical BatcA: [S[ / gnalytical MstAod: [Mi In6trup snt: gnaly6t: bbP gnalytical DatsTSip s: h	]1/ ]1]/40D nŢ1Ţ012 1]:00:1]PM					

Print Dats: 101031 012 3:3] :] 1PM

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Duplicate Sample Summary	/								
Original Sample ID: 116555 Duplicate Sample ID: 13535	0991 5Ay		s nal/ 2i2 Date: 981y11y1916 1y:99 x atriW (ater fSur,aceE.,,0Eo rdun) R						
CP ,dr Sample2:									
116553699AE1165536995									
be2ult2 Q SM21 2540D									
Usx.	Original	Duplicate	Lnit2	<u>b %D fN R</u>	<u>b%DP4</u>				
7dtal Su2pen)e) Sdli)2	16y	161	mgM	9 <b>G</b> y	fT 5 R				
In2trument: s nal/ 2t: 44%									

%rint Date: 1910310/916 3:3y:yy%

So S Udrt< s merica IncG



- Dunlicate Sample Summary		7			
Original Sample ID: 116551K99 Duplicate Sample ID: 13535A3	9у	sr x	nal/ 2i2 Date: 98N atriW(ater fSur,	(11)(1916 1y:99 aceE.,,Œordun) F	ł
CP ,dr Sample2:					
1165536991E116553699yE116	5536993E116553699	9AE1165536995			
b e2ult2 Q SM21 2540D		]			
<u>Usx.</u>	<u>Original</u>	Duplicate	L nit2	<u>b %D fN R</u>	<u>b%DP4</u>
7dtal Su2pen) e) Sdli) 2	y3 <b>G</b>	y3 <b>0</b>	mg₩	уĢ9	fT 5 R
Batch Information					
s nal/ tical v atc<: S7S5y15 s nal/ tical x et <d): sx="" y1="" y5a9d<br="">In2trument: s nal/ 2t: 44%</d):>	)				

%rint Date: 1910/310/916 3:3y:yy%x

So S Udrt< s merica IncG



Blank Spike ID: LCS for HBN 1165536 [STS5215] Blank Spike Lab ID: 1353348 Date Analyzed: 0892192016 12:00 Spike D/ pliuate ID: LCSD for HBN 1165536 [STS5215] Spike D/ pliuate Lab ID: 1353380 s atriM x ater \\$/ ffaue(, fftf. ro/ ndG

g C for SaP pleR 1165536001(1165536002(1165536003(116553600Q(1165536005

c eR⁄ ltRby <b>SM21 2540D</b>									
		Blank Spike	eW79%9LG	5	Spike D/ pli	uate ₩ %9LG			
<u>) araP eter</u>	<u>Spike</u>	<u>c eR/ It</u>	<u>ceuWh</u> G	<u>Spike</u>	<u>c eR⁄ It</u>	<u>ceuWh</u> G	<u>CL</u>	<u>c)DWm</u> G	<u>c) D CL</u>
Total S/ Rpended SolidR	50	Q8E6	88	50	50₽	100	₩57125 G	0昼0	W 5 G
Batch Information									
Analytiual Batu<: <b>STS5215</b> Analytiual s et <od: <b="">SM21 2540E InRtr/ P ent: AnalyRt: <b>LLP</b></od:>	)			) re ) re ) re Spil D/ p	o Batu<: o s et <od: o Date9TiP ke Init x tB oe Init x tB</od: 	e: nolE 50 P%91 nolE 50 P%91	. , Mraut ho , Mraut hol:	I: 1000 PL 1000 PL	

) rint Date: 1090392016 3:32:23) s

#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Method Blank					
Blank ID: MB for HBN 174384 Blank Lab ID: 1354255	3 [VXX/29625]	Matrix	k: Water (Surfac	ce, Eff., Ground)	
QC for Samples: 1165536002, 1165536003, 1165	536004, 1165536005, 1165	536011			
Results by AK101					
<u>Parameter</u> Gasoline Range Organics	<u>Results</u> 0.0500U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	
<b>Gurrogates</b> 4-Bromofluorobenzene (surr)	83.7	50-150		%	
atch Information					
Analytical Batch: VFC13322 Analytical Method: AK101 Instrument: Agilent 7890 PID Analyst: ST Analytical Date/Time: 9/23/20	/FID 016 7:34:00PM	Prep Ba Prep Me Prep Da Prep Init Prep Ex	tch: VXX29625 ethod: SW5030B tte/Time: 9/23/20 tial Wt./Vol.: 5 m tract Vol: 5 mL	016 6:00:00AM L	

Print Date: 10/03/2016 3:32:26PM

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Blank Spike ID: LCS for HBN 1165536 [VXX29625] Blank Spike Lab ID: 1354256 Date Analyzed: 09/23/2016 18:56 Spike Duplicate ID: LCSD for HBN 1165536 [VXX29625] Spike Duplicate Lab ID: 1354257 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165536002, 1165536003, 1165536004, 1165536005, 1165536011

	E	3lank Spike	e (mg/L)	S	pike Duplic	cate (mg/L)			
<u>Parameter</u>	<u>Spike</u>	Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Gasoline Range Organics	1.00	0.957	96	1.00	0.949	95	(60-120)	0.87	(< 20)
urrogates									
4-Bromofluorobenzene (surr)	0.0500	92.2	92	0.0500	91.7	92	(50-150)	0.54	
Analytical Batch: VFC13322 Analytical Method: AK101				Prep Prep	Batch: V Method:	XX29625 SW5030B			
Instrument: Agilent 7890 PID/ Analyst: ST	FID			Prep Date/Time: 09/23/2016 06:00 Spike Init Wt (//ol : 1.00 mg/l = Extract //ol: 5 ml					
				Dupe Init Wt./Vol.: 1.00 mg/L Extract Vol: 5 mL					

Print Date: 10/03/2016 3:32:28PM

#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Method Blank	Method Blank				
Blank ID: MB for HBN 17441 Blank 6a5 ID: 1] L4277	34 <b>{</b> VVX 23439	Ma,rt	i∶x a,pr ₩2(rfa	aup0cfftÐ.ro(nGd	
b Q for CaS mpe: 113LL] 3ss10113LL] 3s1/					
) pe( l,e 5R <b>AK101</b>					
<u>OaraSp.pr</u> . aeoltnp ) anPp UrPantue	<u>) pe(l.e</u> sEsLssy	<u>6UbXQ6</u> s⊠ss	<u>D6</u> sEs]1s	<u>y nt,e</u> S P <b>X6</b>	
Surrogates 4gBroS ofl( oro5pn- pnp ₩( rrd	%] EL	LsglLs		z	
Batch Information					
AnalRtual Ba,uh: [FQ1]]/2 AnalRtual Mp,hoG AK1s1 Ine,r(Spn,: APtlpn, 7%2s OIE AnalRe: CT AnalRtual Da,pXTSp: 2X7X	DXFID s13 11:] 4:ssOM	OrpmBa OrpmM OrpmDa OrpmIn Orpmci	a,uh: [VV/2343 p,hoG Cx Ls]sF a,pXTtSp: 2X/7X t,tal x ,BXूtolE L S ,rau, [ol: L S 6	3 s13 3:ss:ssAM 66	

C. C Nor,h AS prtua InuE

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Blank Spike ID: LCS for HBN 1165536 [VXX296] 6b Blank Spike La4 ID: 135] 9t A Daye z nald0e/ : A9&u&A16 22:5u Spike Dcpli7aye ID: LCSD for HBN 1165536 [VXX296] 6b Spike Dcpli7aye La4 ID: 135] 9t 1 Mayrix: Wayer (Scrfa7e, Eff., Grocn/)

QC for Samples: 1165536AA1, 1165536A12

Resclys 4d AK101										
	E	Blank Spike	: (mg <b>&amp;</b> _)	S	pike Dcpli7	7aye (mg8⊥)				
<u>Parameyer</u>	<u>Spike</u>	Rescly	<u>Re7 (%)</u>	<u>Spike</u>	Rescly	<u>Re7 (%)</u>	CL	<u>RPD (%)</u>	RPD CL	
Gasoline Range Organi7s	1.AA	A.962	96	1.AA	A.t t ]	tt	(6A-12A)	t .] A	(< 2A)	
Surrogates										
] -Bromoflcoro4en0ene (scrr)	A.A5AA	92.u	93	A.A5AA	tt.3	t t	(5A-15A)	] .t A		
Batch Information										
z naldyi7al Bay7h: VFC13329				Prep Bay7h: VXX29646						
z naldyi7al Meyho/: AK101				Prep Meyho/: SW5030B						
Insyrcmeny. Agilent 7890 PID/	FID			Prep Daye8Time: 09/27/2016 06:00						
z naldsy. <b>ST</b>				Spike IniyWy8/ol.: 1.AA mg8_ Exyra7yVol: 5 mL						
				Dcp	e IniyWy.8/	'ol.: 1.AA mg	g8L Exyra7y∨	ol: 5 mL		

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<b>SGS</b>			Sa USAI	mpling and Testing Report - Event FG-GRZZZ-00-002016-004 Rev. 16-Dec- [/]	t 2 . 0 16
Method Blank					
Blank ID: MB for HBN Blank Lab ID: 135283	N 1743327 [WAT/10739] 32	Matriz	x: Water (Surfa	ce, Eff., Ground)	
QC for Samples: 1165536001, 11655360	002, 1165536003, 1165536004, 116	5536005			
Results by SM21 213	0B	·			
Parameter Turbidity	<u>Results</u> 0.100U	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	
Analytical Method: Instrument: Turbidir Analyst: ACF Analytical Date/Time	SM21 2130B neter e: 9/18/2016 9:03:00AM				

Print Date: 10/03/2016 3:32:33PM



Duplicate Sample Summary	1				
Original Sample ID: 1165536001 Duplicate Sample ID: 1352837 QC for Samples: 1165536001, 1165536002, 1165536003, 116553600		536004, 1165536005	Analysis Date: Matrix: Water (	09/18/2016 09:03 Surface, Eff., Grour	nd)
Results by SM21 2130B	Results by SM21 2130B				
NAME	Original	Duplicate	Units	<u>RPD (%)</u>	RPD CL
Turbidity	34.0	34.0	NTU	0.00	(< 20 )
Batch Information Analytical Batch: WAT10739 Analytical Method: SM21 213 Instrument: Turbidimeter Analyst: ACF	:0B				
Print Date: 10/03/2016 3:32:35PM					

GS				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
Blank Spike ID: LCS for HBN 1 Blank Spike Lab ID: 1352833 Date Analyzed: 09/18/2016 0	165536 9:03	[WAT1073	9]	Matrix: Water (Surface, Eff., Ground)
C for Samples: 116553600	1, 116553	36002, 1165	536003, 11658	536004, 1165536005
Results by SM21 2130B				
		Blank Spike	e (NTU)	
P <u>arameter</u> Turbidity	<u>Spike</u> 10	<u>Result</u> 11.0	<u>Rec (%)</u> 110	<u>CL</u> ( 90-110 )
Batch Information				
Analytical Batch: WAT10739 Analytical Method: SM21 2130B Instrument: Turbidimeter Analyst: ACF				Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 10 NTU Extract Vol: 1 mL Dupe Init Wt./Vol.: Extract Vol:

<b>SGS</b>				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary			<u> </u>	
Blank Spike ID: LCS for HBl Blank Spike Lab ID: 135283 Date Analyzed: 09/18/2016	N 1165536 5 6 09:03	[WAT1073	9]	Matrix: Water (Surface, Eff., Ground)
QC for Samples: 1165536	6001, 116553	36002, 1165	536003, 11655	536004, 1165536005
Results by SM21 2130B				
		Blank Spike	e (NTU)	
Parameter	Spike	Result	Rec (%)	<u>CL</u>
urbidity	10	11.0	110	(90-110)
Batch Information				
Analytical Batch: WAT10739 Analytical Method: SM21 213 Instrument: Turbidimeter Analyst: ACF	30B			Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 10 NTU Extract Vol: 1 mL Dupe Init Wt./Vol.: Extract Vol:

Duplicate Sample Su	ımmary				
Original Sample ID: Duplicate Sample ID:	1165487001 1354421		Analysis Date: 0 Matrix: Drinking	9/23/2016 13:07 Water	
QC for Samples:					
1165536001, 116553	6002, 1165536003, 1165	536004, 1165536005			
Results by SM21 450	0-Н В				
NAME	<u>Original</u>	Duplicate	Units	<u>RPD (%)</u>	RPD CL
pН	7.40	7.40	pH units	0.00	(< 5)
Batch Information					
Analytical Batch: WTI Analytical Method: SI Instrument: Titration Analyst: KBE	4513 M21 4500-H B				

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Original Sample ID: 1 Duplicate Sample ID:	iginal Sample ID: 1165488001 uplicate Sample ID: 1354422 C for Samples:		Analysis Date: 09/23/2016 17:21 Matrix: Drinking Water				
QC for Samples:							
165536001, 1165536	002, 1165536003, 1165	536004, 1165536005					
Results by SM21 4500	-Н В						
	Original	Duplicate	Units	RPD (%)	RPD CI		
NAME	Z 00	<u>2 40</u>		1.40			
)H	7.20	7.10	pH units	1.40	(< 5)		
Batch Information							
Analytical Batch: WTI4 Analytical Method: SM Instrument: Titration Analyst: KBE	513 21 4500-H B						

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Duplicate Sample Summary

<b>SGS</b>				Confident LNG Facilities Groundwater Qual Sampling and Testing Report - Even USAL-FG-GRZZZ-00-002016-004 Rev 16-Dec-	ial ity t 2 . 0 16
Blank Spike Summary					
Blank Spike ID: LCS for HE Blank Spike Lab ID: 13544 Date Analyzed: 09/23/201	N 1165536 [WTI4 18 6 11:30	4513]		Matrix: Water (Surface Eff. Ground)	
QC for Samples: 116553	6001, 1165536002	, 1165536	003, 116553	36004, 1165536005	
Results by SM21 4500-H B					
	Blank S	pike (pH ι	units)		
<u>⊃arameter</u> ⊳H	<u>Spike</u> <u>Re</u> 7 7.0	<u>sult R</u> 3 1	<u>ec (%)</u> 00	<u>CL</u> (99-101)	
Batch Information					
Analytical Batch: WTI4513 Analytical Method: SM21 45 Instrument: Titration Analyst: KBE	00-Н В			Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 7 pH units Extract Vol: 1 mL Dupe Init Wt./Vol.: Extract Vol:	
nt Date: 10/03/2016 3:32:39PM					
SGS North America	a Inc. 200 Wes	t Potter Di 2343 f 90	rive Anchora	ige, AK 95518	

SGS			S US/	ampling and Testing R AL-FG-GRZZZ-00-0020	eport - Event 2 )16-004 Rev. 0 16-Dec-16
Method Blank		]			
Blank ID: MB for HBN Blank ba8 ID: 1Q 4/ Q mp for eas 6l0, : 112/ / Q2331t 112/ / Q233	1744324 5[ SITA/1] L C i t 112// @233Qt 112// @2334t 11:	2/ / Q233/	MaxrVV.[ax0ruecml	faE0t . ff₲d rocn) R	
y 0, clx, 8∪ <b>SM21 2320</b>	В	]			
<u>varas 0x0r</u> glkal <b>VWAU</b>	<u>y 0, clx</u> / <b>3</b> 30	<u>bPmTp</u> 13 <b>G</b>	<u>b</u> <u>Db</u> Q <b>3</b> 3	<u>On₩</u> sATo	
Batch Information					
gnalUNABalBaxEh: [Si gnalUNABalM0xho): e1 In, xrcs0nxSWraxNoh gnalU,xKB. gnalUNABalDax07SNA/0:	14/1] Mi1iQi3B CTIQTI312 2:i]:/]vM				

vrWxDax0: 13TBQT 312 QQ :43v M

E-555

ede Norxhgs 0rWEa InEG

73 of 88



Duplicate Sample Summ	ary					
Original Sample ID: 1165536001 Duplicate Sample ID: 1354541			Analysis Date: Matrix: Water (	09/23/2016 16:05 Surface, Eff., Groui	nd)	
QC for Samples:						
1165536001, 1165536002	2, 1165536003, 11655	536004, 1165536005				
Results by SM21 2320B						
NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL	
Alkalinity	70.3	70.4	mg/L	0.14	(< 25 )	
Batch Information Analytical Batch: WTI4518 Analytical Method: SM21 Instrument: Titration Analyst: KBE	3 2320B					

<b>SGS</b>				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Iank Spike Summary				
llank Spike ID: LCS for HBN llank Spike La8 ID: 135454t DaAe ynalzde0: t9/23/2t16	1165536 [WT 1] :3R	[1451] b		
C for Sa%pleu: 1165536t	t 1E1165536t t	2E1165	536t t 3E11655	36tt4E1165536tt5
euMAi 8z SM21 2320B				
	Blar	ık Spike	c%7/LP	
<u>nara%eAer</u> IkaliniAz	<u>Spike</u> <u>s</u> 25t 2	<u>euMA</u> 42	<u>se, cQP</u> 9R	<u>CL</u> c] 5h115 P
atch Information				
y nalz4, al BaĄ.V: WTI4518 y nalz4, al x eA/o0: SM21 2320 Inu4tWenA. Titration y nalzuA. KBE	В			mrep BaA,V: mrep x eA/o0: mrep DaAe/Ti%e: Spike IniAWAO/oIG 25t %7/L . (Aka, Avol: 5t %L DMpe IniAWAO/oIG . (Aka, Avol:
IADaAe: 1t /t 3/2t 16 3:32:43mx				
S) S NorA/ y %eri, a Ir	n, G 2tt We t9t ROS	euAmo Aka 62 C2 3 4 3	er Drige yn, Vor 8 f 9t R <b>G</b> 61 <b>G</b> 3t	a7eEyK 9551] 1 www.0Mu@7uĢo%



# Method Blank

Blank ID: MB for HBN 1743317 [WXX/11625] Blank Lab ID: 1352783 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165536001, 1165536002, 1165536003, 1165536004, 1165536005

#### Results by EPA 300.0

Parameter	Results	LOQ/CL	DL	Units
Chloride	0.100U	0.200	0.0620	mg/L
Fluoride	0.100U	0.200	0.0620	mg/L
Nitrate-N	0.100U	0.200	0.0620	mg/L
Nitrite-N	0.100U	0.200	0.0620	mg/L
Sulfate	0.100U	0.200	0.0620	mg/L
Total Nitrate/Nitrite-N	0.100U	0.200	0.0620	mg/L

# **Batch Information**

Analytical Batch: WIC5565 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Analytical Date/Time: 9/18/2016 12:24:28AM Prep Batch: WXX11625 Prep Method: METHOD Prep Date/Time: 9/16/2016 1:52:00PM Prep Initial Wt./Vol.: 10 mL Prep Extract Vol: 10 mL

Print Date: 10/03/2016 3:32:44PM



Blank Spike ID: LCS for HBN 1165536 [WXX11625] Blank Spike Lab ID: 1352784 Date Analyzed: 09/18/2016 00:46

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

110000001, 110

1165536001, 1165536002, 1165536003, 1165536004, 1165536005

#### Results by EPA 300.0

	I	Blank Spike	e (mg/L)	
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	
Chloride	5	5.00	100	
Fluoride	5	5.07	101	
Nitrate-N	5	4.93	99	
Nitrite-N	5	4.99	100	
Sulfate	5	5.02	100	
Total Nitrate/Nitrite-N	10	9.92	99	

## **Batch Information**

Analytical Batch: WIC5565 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Prep Batch: WXX11625 Prep Method: METHOD Prep Date/Time: 09/16/2016 13:52 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/03/2016 3:32:46PM



Analyst: ACF

Analytical Date/Time: 9/18/2016 1:31:17AM

#### Matrix Spike Summary

Original Sample ID: 1165487001 MS Sample ID: 1352785 MS MSD Sample ID: 1352786 MSD 
 Analysis Date:
 09/18/2016
 1:09

 Analysis Date:
 09/18/2016
 1:31

 Analysis Date:
 09/18/2016
 1:53

 Matrix:
 Drinking Water

Prep Initial Wt./Vol.: 10.00mL

Prep Extract Vol: 10.00mL

QC for Samples: 1165536001, 1165536002, 1165536003, 1165536004, 1165536005

Results by EPA 300.0		Ма	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
<u>Parameter</u> Chloride	<u>Sample</u> 1.49	<u>Spike</u> 5.00	Result 6.76	<u>Rec (%)</u> 105	<u>Spike</u> 5.00	<u>Result</u> 6.83	<u>Rec (%)</u> 107	<u>CL</u> 90-110	<u>RPD (%)</u> 0.96	RPD CL
Fluoride	0.200U	5.00	5.28	106	5.00	5.28	106	90-110	0.06	
Sulfate	8.55	5.00	13.9	107	5.00	13.8	105	90-110	0.86	
Batch Information Analytical Batch: WIC5565 Analytical Method: EPA 300 Instrument: Matrahem 723	0.0			Prep Prep Prep	) Batch: \ ) Method:	WXX11625 EPA 300	0 0 Extraction	n Waters/L	iquids	

Print Date: 10/03/2016 3:32:47PM

#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Blank ID: MB for HBN 1744113 [XXX/36396] Matrix: Water (Surface, Eff., Ground)
Blank Lab ID: 1354713 QC for Samples: 1165536001, 1165536002, 1165536003, 1165536004, 1165536005
Results by AK102
ParameterResultsLOQ/CLDLUnitsDiesel Range Organics0.299J0.6000.180mg/L
Surrogates5a Androstane (surr)94.860-120%
Analyst: CRA Prep Initial Wt./Vol.: 250 mL Analytical Date/Time: 9/29/2016 2:35:00PM Prep Extract Vol: 1 mL

Print Date: 10/03/2016 3:32:48PM

SGS



Blank Spike ID: LCS for HBN 1165536 [VVV363X62 Blank Spike La9 ID: 135] b1] Da⁄e t nalAyez: dX0 X0 d16 1]:] 5 Spike D8pliua4e ID: LCSD for HBN 1165536 [VVV363X62 Spike D8pliua4e La9 ID: 135] b15 Ra4is: Ma4er xS8rfaueW( ff,WEro8nz.

%C for Sa) ple7: 1165536dd1W165536dd/W165536dd3W165536dd] W165536dd5

c e78147 9A <b>AK102</b>			_						
		Blank Spike	:x)m0L.	ç	oike D8pliu	ua4ex)m0L.			
<u>Gara) e4er</u>	Spike	c e78l4	<u>c eu xP .</u>	<u>Spike</u>	c e78l4	<u>c eu xP .</u>	<u>CL</u>	<u>c GD xP .</u>	<u>c GD CL</u>
Die7el c anme g rmaniu7	/ d	1X,5	XQ	/ d	/ d,]	1d/	xb5Cl/5.	] ,3d	ж /d.
irrogates									
a t nzro74ane x78rr.	d,]	113	113	d,]	11Q	11Q	x6dCl/d.	] ,Qd	
Batch Information									
t nalA4ual Ba4ı<: <b>XFC12888</b> t nalA4ual Re≁oz: <b>AK102</b> In748) en4 <b>Agilent 7890B R</b> t nalA74 <b>CRA</b>				Gre Gre Gre Spil D8p	o Ba4ı<: X o Re4≺oz: o Da4e0ni) ke Ini4M40ī ne Ini4M40ī	<b>XX36396</b> <b>SW3520C</b> e: <b>09/27/20</b> Fol,: / d ) m0 Fol,: / d ) m0	<b>16 09:43</b> 1 (s4au4To 1 (s4au4To	ol: 1) L l: 1) L	

Grin4Da4e: 1d0d30/d16 3:3/:]XGR

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#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Method Blank					
Blank ID: MB for HBN 1744 Blank Lab ID: 1354713	113 [XXX/36396]	Matrix	k: Water (Surfa	ice, Eff., Ground)	
QC for Samples: 1165536001, 1165536002, 11	65536003, 1165536004, 116	5536005			
Results by <b>AK103</b>		1			
Parameter Residual Range Organics	<u>Results</u> 0.250U	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	
Surrogates n-Triacontane-d62 (surr)	92.9	60-120		%	
3atch Information					
Analytical Batch: XFC1288 Analytical Method: AK103 Instrument: Agilent 7890B Analyst: CRA Analytical Date/Time: 9/29	38 R /2016 2:35:00PM	Prep Ba Prep Me Prep Da Prep Init Prep Ex	tch: XXX36396 ethod: SW35200 te/Time: 9/27/2 tial Wt./Vol.: 250 tract Vol: 1 mL	C 016 9:43:04AM 0 mL	

Print Date: 10/03/2016 3:32:50PM

SGS



Blank Spike ID: LCS for HBN 1165536 [VVV363X62 Blank Spike La9 ID: 135] b1] Da⁄e t nalAyez: dX0 X0 d16 1]:] 5 Spike D8pliua4e ID: LCSD for HBN 1165536 [VVV363X62 Spike D8pliua4e La9 ID: 135] b15 Ra4is: Ma4er xS8rfaueW ff,WEro8nz.

%C for Sa) ple7: 1165536dd1W165536dd/W165536dd3W165536dd] W165536dd5

L		Plank Snike	w) m1						
		ыапк эріке	ex) muL.	5	ріке D8ріі	ua4ex)muL.			
<u>Gara) e4er</u>	<u>Spike</u>	<u>c e78l4</u>	<u>ceuxP.</u>	<u>Spike</u>	<u>c e78l4</u>	<u>ceuxP.</u>	<u>CL</u>	<u>c GD xP .</u>	<u>c GD CL</u>
c e7iz8al c anme g rmaniu7	/ d	1X,5	XQ	/ d	/ d,/	1d1	x6dCl/d.	3,3d	x-/d.
Surrogates									
n&riauon4aneQ6/ x78rr.	d,]	X5	X5	d,]	1d6	1d6	x6dCl/d.	1d,Xd	
Batch Information									
t nalA4ual Ba4uh: XFC18777				Gre	p Ba4uh: 🗙	XX262R6			
t nalA4ual Re4noz: AK102				Gre	p Re4hoz:	SW2580C			
In748) en4 Agilent 97R0B 3				Gre	p Da4e0≺i) (	e: <b>0R/89/80</b>	16 0R:42		
t nalA74 C3A				Spil	ke Ini4M40T	⁻ol,:/d)m(	L (s4rau4To	ol: 1) L	
				D8p	e Ini4M40T	ol,:/d)m0	L (s4au4Tol	:1)L	

Grin4Da4e: 1d0d30 d16 3:3/:53GR

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1165336     1165336     Scs North America In: CHAIN OF CUSTODY RECORD       Luen::     Junistion       Reports To:     Bert Berglund       Provide:     Ferentistic       Reports To:     Bert Berglund       Notice To:     Bert Berglund       Provide:     Ammunidity       Nuotice To:     Berglund       Provide:     Ammunidity       Nuotice To:     Berglund       Provide:     Ammunidity       Nuotice To:     Berglund       Provide:     Ammunidity       Nuote     Ammunidity       Reserved     Ammunidity       Minidity     Minidity       Minidity     Minidity       Reserved     Provide:       Reserved     Provide:       Reserved     Provide:       Reserved     Provide:       Reserved     Provide:       Reserved     Provide:		~	s: Sec s may		HCI	SAKDINY SIT	0 20 mar	101714	~	ブ. マ	~	_		_		ں م	Rec		Ter		http
1165536     1165536     Stath Marrial       Instruction     Instruction     Instruction     Instruction       Instruction     Instruction     Instruction     Instruction <tr< td=""><td>nc.</td><td>COR</td><td>iction: ission</td><td></td><td>50MH</td><td>Marines)</td><td>101 0. 101 0.</td><td>.0063</td><td>X</td><td>×</td><td></td><td></td><td></td><td></td><td></td><td></td><td>Ì</td><td></td><td></td><td></td><td></td></tr<>	nc.	COR	iction: ission		50MH	Marines)	101 0. 101 0.	.0063	X	×							Ì				
Addition     1165536     Statution       CLENT:     SLAT     CLENT:     Statution       CLENT:     SLAT     Section     Section       CLENT:     Sheet Breglund     PHONE NO:     G(1-2)20-1112     Section       CLENT:     Sheet Breglund     PHONE NO:     G(1-2)20-1112     Section       CLENT:     Sheet Breglund     PHONE NO:     G(1-2)20-1112     Section       Charter:     Sheet Breglund     E-MAL:     Deerglundo2Shtcashting-one     Phone       NUOCETO:     Boet Breglund     E-MAL:     Deerglundo2Shtcashting-one     Phone       NUOCETO:     Boet Breglund     E-MAL:     Deerglundo2Shtcashting-one     Phone       MYORETO:     Boet Breglund     MALTRIX     Phone     Phone     Phone       MYORETO:     Boet Breglund     MALTRIX     Deerglundo2Shtcashting-one     Phone       MYORETO:     Boet Breglund     MALTRIX     Phone     Phone     Phone       MYORETO:     Boet Breglund     MALTRIX     P	erical	DY RE	Instru Om	on 3		C = D	GRAB Multi	Incre- mental Solis	S	5									0	R	R
And Contract     1165536     SGS Not Claim       Contract     Deright     PHONE NO:     G12-272-1112       REPORTS TO:     Deright     PHONE NO:     G12-272-1112       NUCICE TO:     Deright     PHONE NO:     G12-272-1112       NUCICE TO:     Deright     Deright     Deright       NUCICE TO:     Deright     Deright     Deright       NUCICE TO:     Deright     Deright     Deright       NUCICE TO:     Deright     Deright     HH:Min     Martin       NUCICE TO:	th Am	USTO		Sectio	<b>≇</b> 0	°z⊦	< - z	шко	5	NO I	3									Laborato	4 15
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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0

# Grant Aviation

4451 Aircraft Drive Anchorage, AK 99502 Phone: 1 (888) 359-4726 Freephone: 1 (888) 359-4726 Email: res@flygrant.com Web: http://www.flygrant.com/

Flight Departs: Sep 17 16 9:25 PM

# AIRBILL 3891687

I hereby declare that the goods contained herein do not contain dangerous goods.

Signed.....Date.....Date.



## FREIGHT DETAILS

FROM/TO: Kenai -> Anchorage International

Receiver: sgs

# Sender: ben siwiec

Quan.	Wgt.	Handle Fee	Danger Fee	Total
2	85	-	-	\$43.00
			Total Tax:	\$2.69
		Total Pa	yments made:	\$45.69
		т	otal Unpaid:	\$0.00
	Quan. 2	Quan. Wgt. 2 85	Quan. Wgt. Handle Fee 2 85 - Total Pa	Quan.     Wgt.     Handle Fee     Danger Fee       2     85     -     -       Total Tax:       Total Payments made:       Total Unpaid:

CUSTOMER COPY

Sender: ben siwiec

AIRBILL 3891687



# **Grant Aviation**

4451 Aircraft Drive Anchorage, AK 99502 Phone: 1 (888) 359-4726 Freephone: 1 (888) 359-4726 Email: res@flygrant.com Web: http://www.flygrant.com/

Flight Departs: Sep 17 16 9:25 PM

# FREIGHT DETAILS

FROM/TO: Kenai -> Anchorage International

Receiver: sgs

Description & Comment	Quan.	Wgt.	Handle Fee	Danger Fee	Total
water samples	2	85	-	-	\$43.00
TAX: Federal Excise Tax					\$2.69
			Total Pa	yments made:	\$45.69
			Т	otal Unpaid:	\$0.00

# TERMS AND CONDITIONS

Consignemnt Note Text





Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

	1165536							
Review Criteria	Y/N (ves/r	10)	Ex	Exceptions Noted below				
		Y exemption permitted if sampler hand carries/delivers.						
Were Custody Seals intact? Note # {	1-F, 1-R both Coolers							
, COC accompanied	samples? Y			.,				
Y **exemption permitted if chilled & collected <8hrs ago or chiling not required (i.e., waste, oil)								
	Y	Cooler ID:	: 1	@	6.0	°C	Therm ID:	D10
	Y	Cooler ID:	2	@	5.9	°C	Therm ID:	D10
Temperature blank compliant* (i.e., 0-6 °C after CF)?		Cooler ID:		@		°C	Therm ID:	
		Cooler ID:		@		°C	Therm ID:	
	Y	Cooler ID:		@		°C	Therm ID:	
*lf >6°C, were samples collected <8 ho	urs ago? Y		1					
If <0°C, were sample containers	ice free? Y							
If samples received <u>without</u> a temperature blank, the "cooler tempera be documented in lieu of the temperature blank & " <b>COOLER TEMP</b> " w noted to the right. In cases where neither a temp blank nor cooler ten obtained, note "ambient" or "chilled".	ture" will ill be np can be							
Note: Identify containers received at non-compliant temperature . Us FS-0029 if more space is needed.	e form							
		Note: Refer	to form F-083 "Sam	n <mark>ple Guide" f</mark> c	o <mark>r hold tim</mark>	nes.		
Were samples received within h	old time? Y							
Do samples <b>match COC</b> ** (i.e.,sample IDs,dates/times co	ollected)? Y							
**Note: If times differ <1hr, record details & login	per COC.							
Were analyses requested unam	biguous? Y							
			Y ***Exemption	permitted for	<mark>· metals (</mark> e	e.g,20	0.8/6020A).	
Were proper containers (type/mass/volume/preservative*	**)used? Y	rss received	d in 1-L Amber Glass	s Jars.				
IF APPLICABLE								
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with	samples? Y							
Were all VOA vials free of headspace (i.e., bubbles	<mark>≤ 6mm)?</mark> Y							
Were all soil VOAs field extracted with Me	OH+BFB? Y							
Note to Client: Any "no" answer above indicate	s non-compliance	with stand	lard procedures and	d may impact	data quali	ity.		
Addi	tional notes (if	applicab	le):					


### **Sample Containers and Preservatives**

<u>Container Id</u>	<u>Preservative</u>	<u>Container</u> Condition	Container Id	<u>Preservative</u>	<u>Container</u> Condition
1165536001-A	HNO3 to pH < 2	ОК	1165536005-G	No Preservative Required	ОК
1165536001-B	HCL to $pH < 2$	ОК	1165536005-H	No Preservative Required	ОК
1165536001-C	HCL to $pH < 2$	ОК	1165536005-I	No Preservative Required	ОК
1165536001-D	HCL to $pH < 2$	ОК	1165536006-A	No Preservative Required	ОК
1165536001-E	HCL to $pH < 2$	ОК	1165536007-A	No Preservative Required	ОК
1165536001-F	HCL to $pH < 2$	OK	1165536008-A	No Preservative Required	OK
1165536001-G	No Preservative Required	ОК	1165536009-A	No Preservative Required	ОК
1165536001-H	No Preservative Required	OK	1165536010-A	No Preservative Required	OK
1165536001-I	No Preservative Required	OK	1165536011-A	HCL to pH < 2	OK
1165536002-A	HNO3 to pH < 2	OK	1165536011-B	HCL to $pH < 2$	OK
1165536002-B	HCL to pH < 2	OK	1165536011-C	HCL to pH < 2	OK
1165536002-C	HCL to $pH < 2$	OK	1165536012-A	HCL to $pH < 2$	OK
1165536002-D	HCL to pH < 2	OK	1165536012-B	HCL to pH < 2	OK
1165536002-E	HCL to $pH < 2$	OK	1165536012-C	HCL to $pH < 2$	OK
1165536002-F	HCL to pH < 2	ОК			
1165536002-G	No Preservative Required	ОК			
1165536002-H	No Preservative Required	ОК			
1165536002-I	No Preservative Required	ОК			
1165536003-A	HNO3 to pH < 2	ОК			
1165536003-B	HCL to $pH < 2$	ОК			
1165536003-C	HCL to $pH < 2$	OK			
1165536003-D	HCL to $pH < 2$	OK			
1165536003-E	HCL to pH < 2	OK			
1165536003-F	HCL to $pH < 2$	OK			
1165536003-G	No Preservative Required	OK			
1165536003-H	No Preservative Required	OK			
1165536003-I	No Preservative Required	ОК			
1165536004-A	HNO3 to pH < 2	OK			
1165536004-B	HCL to $pH < 2$	ОК			
1165536004-C	HCL to $pH < 2$	ОК			
1165536004-D	HCL to $pH < 2$	ОК			
1165536004-E	HCL to $pH < 2$	ОК			
1165536004-F	HCL to $pH < 2$	ОК			
1165536004-G	No Preservative Required	ОК			
1165536004-H	No Preservative Required	OK			
1165536004-I	No Preservative Required	ОК			
1165536005-A	HNO3 to $pH < 2$	OK			
1165536005-B	HCL to $pH < 2$	OK			
1165536005-C	HCL to $pH < 2$	ОК			
1165536005-D	HCL to $pH < 2$	OK			
1165536005-E	HCL to $pH < 2$	ОК			
1165536005-F	HCL to pH < 2	OK			

Container Id

Preservative

Container Condition <u>Container Id</u>

Confidential <u>Preservative</u> Facilities Groundwate <u>Gradityer</u> Sampling and Testing Report <u>Gradity of the trans</u> USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM- The container was received damaged.

FR- The container was received frozen and not usable for Bacteria or BOD analyses.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis

requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

9/18/2016

E-570



#### Laboratory Report of Analysis

To: SLR Alaska-Anchorage 2700 Gambell St Suite 200 Anchorage, AK 99503 (907)222-1112

Report Number: **1165550** 

Client Project: 105.00148.16001 KW Event 2

Dear Jason Gray,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely, SGS North America Inc.	SGS North America Inc. Environmental Services – Alaska Division Project Manager	Justin Nelson 2016.10.15 10:54:27 -08'00'	
Justin Nelson Project Manager Justin.Nelson@sgs.com	Date		
rint Date: 10/15/2016 10:38:48	BAM		

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P



#### **Case Narrative**

#### SGS Client: SLR Alaska-Anchorage SGS Project: 1165550 Project Name/Site: 105.00148.16001 KW Event 2 Project Contact: Jason Gray

Refer to sample receipt form for information on sample condition.

#### MW-50A-0916 (1165550006) PS

4500NO3-F - Nitrate/Nitrite - QCS recovery was outside of QC criteria, sample was reanalyzed outside of hold time with QC within criteria and results confirmed.

#### MW-50B-0916 (1165550007) PS

4500NO3-F - Nitrate/Nitrite - QCS recovery was outside of QC criteria, sample was reanalyzed outside of hold time with QC within criteria and results confirmed.

#### 1165536001(1353299MS) (1353300) MS

200.8LL - Metals MS recoveries for aluminum (168%) AND barium (139%) do not meet QC criteria. Post digestion spike was successful.

#### 1165550009MS (1354141) MS

4500NO3-F - Nitrate/Nitrite - MS recovery is outside of QC criteria. Refer to LCS for accuracy requirements.

#### 1165536001(1353299MSD) (1353301) MSD

200.8LL - Metals MSD recoveries for barium (139%), iron (135%), and aluminum (426%) do not meet QC criteria. Post digestion spike was successful.

#### 1165550009MSD (1354142) MSD

4500NO3-F - Nitrate/Nitrite - MSD recovery is outside of QC criteria. Refer to LCS for accuracy requirements.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

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#### Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <<u>http://www.sgs.com/en/Terms-and-Conditions.aspx></u>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
В	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
Μ	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.
Sample summaries which in	nclude a result for "Total Solids" have already been adjusted for moisture content.

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Note:

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Sample Summary					
Client Sample ID	Lab Sample ID	Collected	Received	Matrix	
MW-82A-0916	1165550001	09/16/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-82B-0916	1165550002	09/16/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-27B-0916	1165550003	09/16/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-74A-0916	1165550004	09/17/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-74B-0916	1165550005	09/17/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-50A-0916	1165550006	09/18/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-50B-0916	1165550007	09/18/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-87Z-0916	1165550008	09/18/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-87B-0916	1165550009	09/18/2016	09/19/2016	Water (Surface, Eff., Ground)	
EB-H1558-0916	1165550010	09/16/2016	09/19/2016	Water (Surface, Eff., Ground)	
EB1-0916	1165550011	09/16/2016	09/19/2016	Water (Surface, Eff., Ground)	
TB-6-0916	1165550012	09/16/2016	09/19/2016	Water (Surface, Eff., Ground)	
TB3-0916	1165550013	09/18/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-82A-0916	1165550014	09/16/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-82B-0916	1165550015	09/16/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-27B-0916	1165550016	09/16/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-74A-0916	1165550017	09/17/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-74B-0916	1165550018	09/17/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-50A-0916	1165550019	09/18/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-50B-0916	1165550020	09/18/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-87Z-0916	1165550021	09/18/2016	09/19/2016	Water (Surface, Eff., Ground)	
MW-87B-0917	1165550022	09/18/2016	09/19/2016	Water (Surface, Eff., Ground)	

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Sample Summary				
Client Sample ID	Lab Sample ID	<u>Collected</u>	<b>Received</b>	Matrix
Method	Method Desc	<u>cription</u>		
SM21 2320B	Alkalinity as	CaCO3 QC		
SM21 2340B	Dissolved Ha	ardness as CaC	D3 ICP-MS-LowLv	
EPA 1631 E	Dissolved Lo	w Level Mercury	/ EPA 1631	
AK102	DRO/RRO L	ow Volume Wate	er	
AK103	DRO/RRO L	ow Volume Wate	er	
SM21 4500NO3-F	Flow Injection	n Analysis		
AK101	Gasoline Rar	nge Organics (W	/)	
EPA 300.0	Ion Chromate	ographic Analysi	s (W)	
EPA 1631 E	Low Level M	ercury EPA 163 [.]	1	
200.8 Low Level	Metals in Wa	ter by 200.8 ICF	P-MS LL	
200.8 Low Level	Metals in Wa	ter by 200.8 ICF	P-MS LL DIS	
SM21 4500-H B	pH Analysis			
SM21 2540C	Total Dissolv	ed Solids SM18	2540C	
SM21 2540D	Total Susper	nded Solids SM2	0 2540D	
SM21 2130B	Turbidity Ana	alysis		

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#### **Detectable Results Summary**

Client Sample ID: MW-82A-0916			
Lab Sample ID: 1165550001	Parameter	Result	Units
Metals Department	Mercury	4.36	ng/L
Client Sample ID: MM/ 82B 0016			C C
Client Sample ID: MW-82B-0916			
	Parameter	Result	<u>Units</u>
Metals Department	Mercury	3.66	ng/L
Client Sample ID: MW-27B-0916			
Lab Sample ID: 1165550003	<u>Parameter</u>	Result	<u>Units</u>
Metals Department	Mercury	5.05	ng/L
Client Sample ID: MW-74A-0916			
Lab Sample ID: 1165550004	Parameter	Posult	Unite
Metals Department	Mercury	4 24	ng/l
	morodry		119/2
Client Sample ID: MW-74B-0916			
Lab Sample ID: 1165550005	Parameter	<u>Result</u>	<u>Units</u>
Metals Department	Mercury	1.23	ng/L
Client Sample ID: MW-50A-0916			
Lab Sample ID: 1165550006	Parameter	Result	Units
Metals by ICP/MS	Aluminum	664	ug/L
-	Antimony	0.216	ug/L
	Arsenic	16.8	ug/L
	Barium	26.5	ug/L
	Boron	20.1	ug/L
	Calcium	25600	ug/L
	Chromium	2.11	ug/L
	Cobalt	0.425	ug/L
	Copper	2.32	ug/L
	Iron	772	ug/L
	Lead	0.580	ug/L
	Magnesium	7820	ug/L
	Manganese	129	ug/L
	Molybdenum	0.613	ug/L
	Nickel	2.13	ug/L
	Potassium	4130	ug/L
	Sodium	7060	ug/L
	Tin	0.188J	ug/L
	Vanadium	1.76	ug/L
	Zinc	6.38	ug/L
Metals Department	Mercury	1.92	ng/L
Semivolatile Organic Fuels	Diesel Range Organics	0.447J	mg/L
Waters Department	Alkalinity	106	mg/L
	Chloride	7.63	mg/L
	Fluoride	0.130J	mg/L
	Nitrite-N	0.0476J	mg/L
	рН	8.30	pH units

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	Detectable Results Summary		
Client Sample ID: MW-50A-0916			
Lab Sample ID: 1165550006	Parameter	Result	<u>Units</u>
Waters Department	Sulfate	4.97	mg/L
	Total Dissolved Solids	164	mg/L
	Total Suspended Solids	25.3	mg/L
	Turbidity	9.00	NTU
Client Sample ID: MW-50B-0916			
Lab Sample ID: 1165550007	Parameter	Result	Units
Metals by ICP/MS	Aluminum	44.9	ug/L
	Antimony	0.0879	ug/L
	Arsenic	0.713J	ug/L
	Barium	27.4	ug/L
	Boron	4.90J	ug/L
	Calcium	13800	ug/L
	Chromium	56.5	ug/L
	Cobalt	1.48	ug/L
	Copper	2.19	ug/L
	Iron	1800	ug/L
	Lead	0.0792J	ug/L
	Magnesium	5190	ug/L
	Manganese	61.5	ug/L
	Molybdenum	2.41	ug/L
	Nickel	39.5	ug/L
	Potassium	2120	ug/L
	Sodium	6990	ug/L
	Vanadium	1.07	ug/L
	Zinc	2.16J	ug/L
Metals Department	Mercury	0.977J	ng/L
Semivolatile Organic Fuels	Diesel Range Organics	0.447J	mg/L
Waters Department	Alkalinity	52.6	mg/L
·	Chloride	12.9	mg/L
	Fluoride	0.116J	mg/L
	Nitrite-N	0.0512J	mg/L
	рН	6.90	pH units
	Sulfate	6.29	mg/L
	Total Dissolved Solids	123	mg/L
	Total Suspended Solids	4.25	mg/L
	Turbidity	6.50	NTU

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#### **Detectable Results Summary**

Client Sample ID: MW-87Z-0916			
Lab Sample ID: 1165550008	Parameter	<u>Result</u>	<u>Units</u>
Metals by ICP/MS	Aluminum	274	ug/L
	Antimony	0.0504	ug/L
	Arsenic	1.98	ug/L
	Barium	41.2	ug/L
	Boron	5.59	ug/L
	Calcium	14000	ug/L
	Chromium	37.2	ug/L
	Cobalt	0.894	ug/L
	Copper	2.57	ug/L
	Iron	9500	ug/L
	Lead	0.296	ug/L
	Magnesium	5470	ug/L
	Manganese	367	ug/L
	Molybdenum	1.63	ug/L
	Nickel	24.9	ug/L
	Potassium	1920	ug/L
	Sodium	7380	ug/L
	Vanadium	0.844J	ug/L
	Zinc	7.09	ug/L
Metals Department	Mercury	0.926J	ng/L
Semivolatile Organic Fuels	Diesel Range Organics	0.389J	mg/L
Waters Department	Alkalinity	57.4	mg/L
	Chloride	17.5	mg/L
	Fluoride	0.109J	mg/L
	рН	6.80	pH units
	Sulfate	5.91	mg/L
	Total Dissolved Solids	142	mg/L
	Total Suspended Solids	11.3	mg/L
	Turbidity	5.60	NTU

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Detectable	Results	Summary
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Client Sample ID: MW-87B-0916			
Lab Sample ID: 1165550009	Parameter	Result	Units
Metals by ICP/MS	Aluminum	239	ug/L
-	Antimony	0.0487J	ug/L
	Arsenic	2.22	ug/L
	Barium	41.5	ug/L
	Boron	6.11	ug/L
	Calcium	14700	ug/L
	Chromium	35.4	ug/L
	Cobalt	0.888	ug/L
	Copper	2.19	ug/L
	Iron	9460	ug/L
	Lead	0.469	ug/L
	Magnesium	5670	ug/L
	Manganese	370	ug/L
	Molybdenum	1.60	ug/L
	Nickel	25.8	ug/L
	Potassium	1940	ug/L
	Sodium	7500	ug/L
	Vanadium	0.377J	ug/L
	Zinc	6.14	ug/L
Metals Department	Mercury	1.18	ng/L
Semivolatile Organic Fuels	Diesel Range Organics	0.354J	mg/L
Waters Department	Alkalinity	53.9	mg/L
-	Chloride	17.5	mg/L
	Fluoride	0.115J	mg/L
	pН	7.00	pH units
	Sulfate	5.91	mg/L
	Total Dissolved Solids	140	mg/L
	Total Suspended Solids	10.9	mg/L
	Turbidity	6.90	NTU
Client Sample ID: EB-H1558-0916			
Lab Sample ID: 1165550010	Parameter	Pocult	Unite
Dissolved Metals by ICP/MS	Aluminum	1.39.1	ual
Dissolved metals by ICF/MIS	Calcium	19.3.1	ug/L
	Copper	0.215.1	ug/L
	Manganese	0.0788.1	ug/L
	Nickel	0.106J	ug/l
	Zinc	4 64	<u>-</u>
			~J. L

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	Detectable Results Summary			
Client Sample ID: EB1-0916				
Lab Sample ID: 1165550011	<u>Parameter</u>	Result	<u>Units</u>	
Metals by ICP/MS	Aluminum	3.41	ug/L	
	Barium	0.162J	ug/L	
	Calcium	25.0J	ug/L	
	Cobalt	0.0134J	ug/L	
	Iron	8.43J	ug/L	
	Magnesium	9.44J	ug/L	
	Manganese	0.122	ug/L	
	Nickel	0.115J	ug/L	
	Zinc	5.00	ug/L	
Client Sample ID: MW-74A-0916				
Lab Sample ID: 1165550017	Parameter	Result	Units	
Dissolved Metals	Mercury	0.550J	ng/L	
Client Sample ID: MW-50A-0916	-		-	
Lab Sample ID: 1165550019	Parameter	Result	Units	
Dissolved Metals by ICP/MS	Aluminum	3.38	ua/L	
	Antimony	0.153	ua/L	
	Arsenic	16.7	ua/L	
	Barium	19.8	ug/L	
	Boron	20.4	ug/L	
	Calcium	24900	ug/L	
	Cobalt	0.0616	ug/L	
	Copper	0.238J	ug/L	
	Hardness as CaCO3	92.8	mg/L	
	Iron	25.3	ug/L	
	Magnesium	7400	ug/L	
	Manganese	101	ug/L	
	Molybdenum	0.598	ug/L	
	Nickel	0.585J	ug/L	
	Potassium	4140	ug/L	
	Silicon	14500	ug/L	
	Sodium	7160	ug/L	
	Zinc	4.36	ug/L	

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	Detectable Results Summary	1	
Client Sample ID: MW-50B-0916			
Lab Sample ID: 1165550020	Parameter	Result	Units
Dissolved Metals by ICP/MS	Aluminum	1.58J	ug/L
	Antimony	0.0561	ug/L
	Barium	25.6	ug/L
	Boron	4.82J	ug/L
	Calcium	13000	ug/L
	Cobalt	0.837	ug/L
	Copper	0.262J	ug/L
	Hardness as CaCO3	53.3	mg/L
	Iron	390	ug/L
	Magnesium	5070	ug/L
	Manganese	49.4	ug/L
	Molybdenum	0.596	ug/L
	Nickel	7.49	ug/L
	Potassium	1930	ug/L
	Silicon	15800	ug/L
	Sodium	6750	ug/L
	Zinc	5.32	ug/L
Client Sample ID: MW-877-0916			
Lab Sample ID: 1165550021	Parameter	Popult	Linite
Dissolved Metals by ICP/MS	Aluminum	12 5	
Dissolved metals by ICF/MS	Antimony	0.0215.1	ug/L
	Arsenic	1 56	ug/L
	Barium	40.0	ug/L
	Boron	5.90	ug/L
	Calcium	14500	ug/L
	Chromium	2 17	ua/l
	Cobalt	0 473	ua/l
	Copper	0 220 J	ua/l
	Hardness as CaCO3	59.6	ma/L
	Iron	8200	ua/L
	Lead	0.0323J	ug/L
	Magnesium	5680	ug/L
	Manganese	366	ug/L
	Molybdenum	0.480	ug/L
	Nickel	7.47	ug/L
	Potassium	1970	ug/L
	Silicon	17200	ua/L
	Sodium	7550	ug/L
	Vanadium	0.413J	ug/L

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Zinc

ug/L

5.62



#### **Detectable Results Summary**

Client Sample ID: MW-87B-0917 Lab Sample ID: 1165550022 Dissolved Metals Dissolved Metals by ICP/MS

<u>Parameter</u>	Result	Units
Mercury	0.514J	ng/L
Aluminum	13.7	ug/L
Antimony	0.0239J	ug/L
Arsenic	1.77	ug/L
Barium	37.3	ug/L
Boron	5.80	ug/L
Calcium	14000	ug/L
Chromium	2.42	ug/L
Cobalt	0.467	ug/L
Copper	0.232J	ug/L
Hardness as CaCO3	57.8	mg/L
Iron	7730	ug/L
Magnesium	5550	ug/L
Manganese	347	ug/L
Molybdenum	0.499	ug/L
Nickel	7.56	ug/L
Potassium	1910	ug/L
Silicon	16600	ug/L
Sodium	7480	ug/L
Vanadium	0.316J	ug/L
Zinc	5.09	ug/L

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SGS				s US	LNG Fa Sampling a AL-FG-GR	acilities Ground and Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16	
Results of <b>MW-82A-0916</b> Client Sample ID: <b>MW-82A-0916</b> Client Project ID: <b>105.00148.16001 KW</b> Lab Sample ID: 1165550001 Lab Project ID: 1165550	V Event 2	Ca Ri M Si La	Collection Date: 09/16/16 10:37 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by Metals Department								
Parameter Mercury	<u>Result Qual</u> 4.36	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 10/13/16 17:49	
Analytical Method: EPA 1631 E Analyst: NEG Analyst: NEG Analytical Date/Time: 10/13/16 17:49 Container ID: 1165550001-A		F F F F	Prep Date/Ti Prep Date/Ti Prep Initial W Prep Extract	: METHOD me: 10/12/ /t./Vol.: 50 Vol: 50 mL	16 16:45 mL			

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Results of MW-82B-0916							
Client Sample ID: <b>MW-82B-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550002 Lab Project ID: 1165550	V Event 2	C R M S L	ollection Da eceived Da latrix: Wate olids (%): ocation:				
Parameter Mercury	<u>Result Qual</u> 3.66	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 10/13/16 17:54
Batch Information Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 17:54 Container ID: 1165550002-A			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30289 I: METHOD me: 10/12/ /t./Vol.: 50 n Vol: 50 mL	16 16:45 mL		

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Results of MW-27B-0916							
Client Sample ID: <b>MW-27B-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550003 Lab Project ID: 1165550	V Event 2	C F M S L	Collection Date: 09/16/16 16:55 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:				
Results by Metals Department							
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Allowable</u> Limits	Date Analyzed
Mercury	5.05	1.00	0.500	ng/L	1		10/13/16 17:58
Batch Information							
Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 17:58 Container ID: 1165550003-A			Prep Batch: Prep Method Prep Date/Ti Prep Initial V Prep Extract	MXX30289 I: METHOD me: 10/12/1 Vt./Vol.: 50 n Vol: 50 mL	16 16:45 mL		

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Results of <b>MW-74A-0916</b> Client Sample ID: <b>MW-74A-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165550004 Lab Project ID: 1165550	W Event 2	C R M S L	Collection Date: 09/17/16 10:37 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Metals Department									
Parameter Mercury	<u>Result Qual</u> 4.24	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 10/13/16 18:03		
Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 18:03 Container ID: 1165550004-A		F F F	Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30289 I: METHOD me: 10/12/ [.] Vt./Vol.: 50 Vol: 50 mL	16 16:45 mL				

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Results of <b>MW-74B-0916</b> Client Sample ID: <b>MW-74B-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550005 Lab Project ID: 1165550	V Event 2	Collection Date: 09/17/16 12:41 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by <b>Metals Department</b> Parameter           Mercury	<u>Result Qual</u> 1.23	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/13/16 18:07	
Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 18:07 Container ID: 1165550005-A		F F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	MXX30289 : METHOD me: 10/12/1 /t./Vol.: 50 r Vol: 50 mL	l6 16:45 mL			

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#### Results of MW-50A-0916

Client Sample ID: **MW-50A-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550006 Lab Project ID: 1165550 Collection Date: 09/18/16 12:46 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Metals by ICP/MS

					A	llowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Aluminum	664	8.00	2.48	ug/L	10		09/22/16 13:41
Antimony	0.216	0.0500	0.0150	ug/L	2.5		09/22/16 12:47
Arsenic	16.8	0.800	0.200	ug/L	2.5		09/22/16 12:47
Barium	26.5	0.250	0.0400	ug/L	2.5		09/22/16 12:47
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 12:47
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:47
Boron	20.1	5.00	1.50	ug/L	2.5		09/22/16 12:47
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:47
Calcium	25600	50.0	15.0	ug/L	2.5		09/22/16 12:47
Chromium	2.11	0.500	0.150	ug/L	2.5		09/22/16 12:47
Cobalt	0.425	0.0200	0.0100	ug/L	2.5		09/22/16 12:47
Copper	2.32	0.500	0.200	ug/L	2.5		09/22/16 12:47
Iron	772	20.0	6.20	ug/L	2.5		09/22/16 12:47
Lead	0.580	0.100	0.0310	ug/L	2.5		09/22/16 12:47
Magnesium	7820	20.0	6.20	ug/L	2.5		09/22/16 12:47
Manganese	129	0.100	0.0310	ug/L	2.5		09/22/16 12:47
Molybdenum	0.613	0.0500	0.0150	ug/L	2.5		09/22/16 12:47
Nickel	2.13	0.620	0.0620	ug/L	2.5		09/22/16 12:47
Potassium	4130	50.0	15.0	ug/L	2.5		09/22/16 12:47
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 12:47
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:47
Sodium	7060	100	31.0	ug/L	2.5		09/22/16 12:47
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:47
Tin	0.188 J	0.200	0.0620	ug/L	2.5		09/22/16 12:47
Vanadium	1.76	1.00	0.310	ug/L	2.5		09/22/16 12:47
Zinc	6.38	3.10	0.400	ug/L	2.5		09/22/16 12:47

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 13:41 Container ID: 1165550006-B Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/15/2016 10:38:59AM

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Results of MW-50A-0916									
Client Sample ID: <b>MW-50A-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550006 Lab Project ID: 1165550	ient Sample ID: <b>MW-50A-0916</b> ient Project ID: <b>105.00148.16001 KW Event 2</b> ab Sample ID: 1165550006 ab Project ID: 1165550			Collection Date: 09/18/16 12:46 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by Metals Department			_						
Parameter Mercury	<u>Result Qual</u> 1.92	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/13/16 18:12		
Batch Information									
Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 18:12 Container ID: 1165550006-A		i i i i i i i i i i i i i i i i i i i	Prep Batch: Prep Method Prep Date/Ti Prep Initial V Prep Extract	MXX30289 I: METHOD ime: 10/12/ Vt./Vol.: 50 Vol: 50 mL	16 16:45 mL				

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Results of MW-50A-0916									
Client Sample ID: <b>MW-50A-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550006 Lab Project ID: 1165550	V Event 2	Collection Date: 09/18/16 12:46 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by Semivolatile Organic Fuel	S								
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.447 J	<u>LOQ/CL</u> 0.600	<u>DL</u> 0.180	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/01/16 01:08		
Surrogates 5a Androstane (surr)	101	50-150		%	1		10/01/16 01:08		
Batch Information Analytical Batch: XFC12899 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 10/01/16 01:08 Container ID: 1165550006-F			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36403 I: SW3520C Ime: 09/28/ Vt./Vol.: 250 Vol: 1 mL	C 16 08:46 ) mL				
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.250 U	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/01/16 01:08		
Surrogates									
n-Triacontane-d62 (surr)	98.8	50-150		%	1		10/01/16 01:08		
Batch Information									
Analytical Batch: XFC12899 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 10/01/16 01:08 Container ID: 1165550006-F			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36403 I: SW3520C me: 09/28/ Vt./Vol.: 250 Vol: 1 mL	C 16 08:46 ) mL				
Print Date: 10/15/2016 10:38:59AM						J flaggin	g is activated		

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SGS				S US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16		
Results of <b>MW-50A-0916</b> Client Sample ID: <b>MW-50A-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165550006 Lab Project ID: 1165550	W Event 2	Collection Date: 09/18/16 12:46 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by <b>Volatile Fuels</b> <u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/28/16 00:12		
u <b>rrogates</b> 4-Bromofluorobenzene (surr)	82.4	50-150		%	1		09/28/16 00:12		
Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/28/16 00:12 Container ID: 1165550006-C		1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	Prep Method: Prep Date/Tir Prep Initial W Prep Extract Y	: SW5030E ne: 09/27/ (t./Vol.: 5 m Vol: 5 mL	3 16 06:00 nL				
Print Date: 10/15/2016 10:38:59AM						Iflaggin	a is activated		

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Results of MW-50A-0916								
Client Sample ID: <b>MW-50A-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550006 Lab Project ID: 1165550 Results by <b>Waters Department</b>	V Event 2	C R M Si Lo	ollection Da eceived Dat latrix: Water olids (%): ocation:	bund)				
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed	
Chloride	7.63	0.200	0.0620	mg/L	1		09/24/16 21:10	
Fluoride	0.130 J	0.200	0.0620	mg/L	1		09/24/16 21:10	
Sulfate	4.97	0.200	0.0620	mg/L	1		09/24/16 21:10	
Batch Information								
Analytical Batch: WIC5566 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/24/16 21:10 Container ID: 1165550006-I		F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11634 : METHOD ne: 09/23/1 /t./Vol.: 10 n Vol: 10 mL	16 16:58 mL			
<u>Parameter</u> Turbidity	<u>Result Qual</u> 9.00	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/19/16 17:00	
Batch Information Analytical Batch: WAT10740 Analytical Method: SM21 2130B Analyst: KBE Analytical Date/Time: 09/19/16 17:00 Container ID: 1165550006-J								
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 106	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/23/16 16:39	
Batch Information Analytical Batch: WTI4518 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/23/16 16:39 Container ID: 1165550006-J								
Parameter Total Dissolved Solids	<u>Result Qual</u> 164	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/21/16 18:31	
Print Date: 10/15/2016 10:38:59AM	0 West Potter Dri	ve Anchorage	, AK 95518			J flaggin	g is activated	
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SGS		Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16						
Results of MW-50A-0916								
Client Sample ID: <b>MW-50A-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165550006 Lab Project ID: 1165550	W Event 2	Collection Date: 09/18/16 12:46 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Waters Department			]					
Batch Information								
Analytical Batch: STS5211 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/21/16 18:31 Container ID: 1165550006-J								
Parameter Total Suspended Solids	<u>Result Qual</u> 25.3	<u>LOQ/CL</u> 2.04	<u>DL</u> 0.633	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/21/16 12:00	
Analytical Batch: STS5215 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/21/16 12:00 Container ID: 1165550006-H								
<u>Parameter</u> pH	<u>Result</u> Qual 8.30	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/23/16 16:39	
Batch Information Analytical Batch: WTI4513 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 16:39 Container ID: 1165550006-J								
<u>Parameter</u> Nitrate-N Nitrite-N	<u>Result Qual</u> 0.0500 U 0.0476 J	LOQ/CL 0.100 0.100	<u>DL</u> 0.0300 0.0300	<u>Units</u> mg/L mg/L	<u>DF</u> 2 2	<u>Allowable</u> Limits	Date Analyzed 09/19/16 18:38 09/19/16 18:38	
Batch Information Analytical Batch: WFI2501 Analytical Method: SM21 4500NO3-F Analyst: KBE Analytical Date/Time: 09/19/16 18:38 Container ID: 1165550006-I								
Print Date: 10/15/2016 10:38:59AM	200 West Potter Dr	ive Anchorage	, AK 95518			J flaggin	g is activated	
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## Results of MW-50B-0916

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Client Sample ID: **MW-50B-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550007 Lab Project ID: 1165550 Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 09/18/16 09:41 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	44.9	2.00	0.620	ug/L	2.5		09/22/16 12:56
Antimony	0.0879	0.0500	0.0150	ug/L	2.5		09/22/16 12:56
Arsenic	0.713 J	0.800	0.200	ug/L	2.5		09/22/16 12:56
Barium	27.4	0.250	0.0400	ug/L	2.5		09/22/16 12:56
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 12:56
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:56
Boron	4.90 J	5.00	1.50	ug/L	2.5		09/22/16 12:56
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:56
Calcium	13800	50.0	15.0	ug/L	2.5		09/22/16 12:56
Chromium	56.5	0.500	0.150	ug/L	2.5		09/22/16 12:56
Cobalt	1.48	0.0200	0.0100	ug/L	2.5		09/22/16 12:56
Copper	2.19	0.500	0.200	ug/L	2.5		09/22/16 12:56
Iron	1800	20.0	6.20	ug/L	2.5		09/22/16 12:56
Lead	0.0792 J	0.100	0.0310	ug/L	2.5		09/22/16 12:56
Magnesium	5190	20.0	6.20	ug/L	2.5		09/22/16 12:56
Manganese	61.5	0.100	0.0310	ug/L	2.5		09/22/16 12:56
Molybdenum	2.41	0.0500	0.0150	ug/L	2.5		09/22/16 12:56
Nickel	39.5	0.620	0.0620	ug/L	2.5		09/22/16 12:56
Potassium	2120	50.0	15.0	ug/L	2.5		09/22/16 12:56
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 12:56
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:56
Sodium	6990	100	31.0	ug/L	2.5		09/22/16 12:56
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:56
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 12:56
Vanadium	1.07	1.00	0.310	ug/L	2.5		09/22/16 12:56
Zinc	2.16 J	3.10	0.400	ug/L	2.5		09/22/16 12:56

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 12:56 Container ID: 1165550007-B Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/15/2016 10:38:59AM

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SGS		Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16						
Results of MW-50B-0916								
Client Sample ID: <b>MW-50B-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550007 Lab Project ID: 1165550	Collection Date: 09/18/16 09:41 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
			_			Allowable		
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed	
Mercury	0.977 J	1.00	0.500	ng/L	1		10/13/16 18:16	
Detek Information								
Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 18:16 Container ID: 1165550007-A			Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	MXX30289 : METHOD me: 10/12/ /t/.Vol.: 50 Vol: 50 mL	) 16 16:45 mL			

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Results of MW-50B-0916							
Client Sample ID: <b>MW-50B-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550007 Lab Project ID: 1165550	V Event 2		Collection Da Received Da Matrix: Wate Solids (%): Location:	und)			
Results by Semivolatile Organic Fuel	s						
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.447 J	<u>LOQ/CL</u> 0.636	<u>DL</u> 0.191	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/01/16 01:18
Surrogates 5a Androstane (surr)	105	50-150		%	1		10/01/16 01:18
Batch Information							
Analytical Batch: XFC12899 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 10/01/16 01:18 Container ID: 1165550007-F			Prep Batch: Prep Method Prep Date/Ti Prep Initial V Prep Extract	XXX36403 l: SW35200 me: 09/28/ [,] Vt./Vol.: 236 Vol: 1 mL	C 16 08:46 6 mL		
Parameter Residual Range Organics	<u>Result Qual</u> 0.265 U	<u>LOQ/CL</u> 0.530	<u>DL</u> 0.159	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 10/01/16 01:18
Surrogates							
n-Triacontane-d62 (surr)	102	50-150		%	1		10/01/16 01:18
Batch Information							
Analytical Batch: XFC12899 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 10/01/16 01:18 Container ID: 1165550007-F			Prep Batch: Prep Method Prep Date/Ti Prep Initial V Prep Extract	XXX36403 I: SW35200 Ime: 09/28/ Vt./Vol.: 236 Vol: 1 mL	C 16 08:46 S mL		
Print Date: 10/15/2016 10:38:59AM						J flaggin	g is activated

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Results of <b>MW-50B-0916</b> Client Sample ID: <b>MW-50B-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550007 Lab Project ID: 1165550	W Event 2	Collection Date: 09/18/16 09:41 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by <b>Volatile Fuels</b> Parameter Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyze 09/24/16 14:3		
<b>urrogates</b> 4-Bromofluorobenzene (surr)	88	50-150		%	1		09/24/16 14:3		
Batch Information Analytical Batch: VFC13323 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/24/16 14:31 Container ID: 1165550007-C			Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	VXX29626 SW5030E ne: 09/24/ ⁻ t./Vol.: 5 m Vol: 5 mL	3 16 06:00 1L				
rint Date: 10/15/2016 10:38:59AM						J flaggin	g is activated		

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Results of MW-50B-0916								
Client Sample ID: <b>MW-50B-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550007 Lab Project ID: 1165550	V Event 2	Collection Date: 09/18/16 09:41 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by waters Department						A.U. 1.1		
<u>Parameter</u> Chloride Fluoride Sulfate	<u>Result Qual</u> 12.9 0.116 J 6.29	LOQ/CL 0.200 0.200 0.200	<u>DL</u> 0.0620 0.0620 0.0620	<u>Units</u> mg/L mg/L mg/L	<u>DF</u> 1 1 1	<u>Allowable</u> Limits	Date Analyzed 09/24/16 21:32 09/24/16 21:32 09/24/16 21:32	
Batch Information Analytical Batch: WIC5566 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/24/16 21:32 Container ID: 1165550007-I		F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11634 : METHOD me: 09/23/ 't./Vol.: 10 Vol: 10 mL	16 16:58 mL			
<u>Parameter</u> Turbidity	<u>Result Qual</u> 6.50	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/19/16 17:00	
Batch Information Analytical Batch: WAT10740 Analytical Method: SM21 2130B Analyst: KBE Analytical Date/Time: 09/19/16 17:00 Container ID: 1165550007-J								
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 52.6	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/23/16 16:46	
Batch Information Analytical Batch: WTI4518 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/23/16 16:46 Container ID: 1165550007-J								
Parameter Total Dissolved Solids	<u>Result Qual</u> 123	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 09/21/16 18:31	
Print Date: 10/15/2016 10:38:59AM	0 West Potter Dri	ive Anchorage	, AK 95518	om		J flaggin	g is activated	
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Results of MW-50B-0916								
Client Sample ID: <b>MW-50B-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165550007 Lab Project ID: 1165550	W Event 2	C R M S	ollection Da eceived Dat latrix: Water olids (%): ocation:	te: 09/18/1 te: 09/19/10 (Surface, E	6 09:4′ 6 13:01 Eff., Gro	1 bund)		
Results by Waters Department								
Batch Information								
Analytical Batch: STS5211 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/21/16 18:31 Container ID: 1165550007-J								
Parameter Total Suspended Solids	<u>Result Qual</u> 4.25	<u>LOQ/CL</u> 1.12	<u>DL</u> 0.346	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/21/16 12:00	
Analytical Batch: STS5215 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/21/16 12:00 Container ID: 1165550007-H								
<u>Parameter</u> pH	<u>Result Qual</u> 6.90	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/23/16 16:46	
Batch Information Analytical Batch: WTI4513 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 16:46 Container ID: 1165550007-J								
<u>Parameter</u> Nitrate-N Nitrite-N	<u>Result Qual</u> 0.0500 U 0.0512 J	<u>LOQ/CL</u> 0.100 0.100	<u>DL</u> 0.0300 0.0300	<u>Units</u> mg/L mg/L	<u>DF</u> 2 2	Allowable Limits	Date Analyzed 09/19/16 18:29 09/19/16 18:29	
Batch Information Analytical Batch: WFI2501 Analytical Method: SM21 4500NO3-F Analyst: KBE Analytical Date/Time: 09/19/16 18:29 Container ID: 1165550007-I								
Print Date: 10/15/2016 10:38:59AM	00 West Potter Dr	ive Anchorage	, AK 95518			J flaggin	g is activated	
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#### Results of MW-87Z-0916

Client Sample ID: **MW-87Z-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550008 Lab Project ID: 1165550 Collection Date: 09/18/16 15:10 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Metals by ICP/MS

					<u> </u>	Allowable	
Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	274	2.00	0.620	ug/L	2.5		09/22/16 12:59
Antimony	0.0504	0.0500	0.0150	ug/L	2.5		09/22/16 12:59
Arsenic	1.98	0.800	0.200	ug/L	2.5		09/22/16 12:59
Barium	41.2	0.250	0.0400	ug/L	2.5		09/22/16 12:59
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 12:59
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:59
Boron	5.59	5.00	1.50	ug/L	2.5		09/22/16 12:59
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 12:59
Calcium	14000	50.0	15.0	ug/L	2.5		09/22/16 12:59
Chromium	37.2	0.500	0.150	ug/L	2.5		09/22/16 12:59
Cobalt	0.894	0.0200	0.0100	ug/L	2.5		09/22/16 12:59
Copper	2.57	0.500	0.200	ug/L	2.5		09/22/16 12:59
Iron	9500	20.0	6.20	ug/L	2.5		09/22/16 12:59
Lead	0.296	0.100	0.0310	ug/L	2.5		09/22/16 12:59
Magnesium	5470	20.0	6.20	ug/L	2.5		09/22/16 12:59
Manganese	367	0.100	0.0310	ug/L	2.5		09/22/16 12:59
Molybdenum	1.63	0.0500	0.0150	ug/L	2.5		09/22/16 12:59
Nickel	24.9	0.620	0.0620	ug/L	2.5		09/22/16 12:59
Potassium	1920	50.0	15.0	ug/L	2.5		09/22/16 12:59
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 12:59
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:59
Sodium	7380	100	31.0	ug/L	2.5		09/22/16 12:59
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 12:59
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 12:59
Vanadium	0.844 J	1.00	0.310	ug/L	2.5		09/22/16 12:59
Zinc	7.09	3.10	0.400	ug/L	2.5		09/22/16 12:59

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 12:59 Container ID: 1165550008-B Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/15/2016 10:38:59AM

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Results of MW-87Z-0916							
Client Sample ID: <b>MW-87Z-0916</b> Client Project ID: <b>105.00148.16001 KW</b> Lab Sample ID: 1165550008 Lab Project ID: 1165550	Collection Date: 09/18/16 15:10 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%):						
Results by Metals Department							
<u>Parameter</u> Mercury	<u>Result Qual</u> 0.926 J	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	Allowable Limits	<u>Date Analyzed</u> 10/13/16 18:25
Batch Information							
Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 18:25 Container ID: 1165550008-A			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30289 I: METHOD me: 10/12/ ⁷ Vt./Vol.: 50 Vol: 50 mL	16 16:45 mL		

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Results of MW-87Z-0916							
Client Sample ID: <b>MW-87Z-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550008 Lab Project ID: 1165550	V Event 2	C F N S L	Collection Da Received Da Matrix: Wate Solids (%): Location:	ate: 09/18/ ate: 09/19/ [:] r (Surface,	16 15:10 16 13:01 Eff., Grou	und)	
Results by Semivolatile Organic Fuels	6		_				
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.389 J	<u>LOQ/CL</u> 0.588	<u>DL</u> 0.176	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/01/16 01:27
Surrogates 5a Androstane (surr)	98.6	50-150		%	1		10/01/16 01:27
Batch Information							
Analytical Batch: XFC12899 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 10/01/16 01:27 Container ID: 1165550008-F			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36403 I: SW3520C me: 09/28/ [/] Vt./Vol.: 255 Vol: 1 mL	) 16 08:46 5 mL		
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.245 U	<u>LOQ/CL</u> 0.490	<u>DL</u> 0.147	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/01/16 01:27
Surrogates							
n-Triacontane-d62 (surr)	101	50-150		%	1		10/01/16 01:27
Batch Information							
Analytical Batch: XFC12899 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 10/01/16 01:27 Container ID: 1165550008-F			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36403 I: SW3520C me: 09/28/ [,] Vt./Vol.: 255 Vol: 1 mL	C 16 08:46 5 mL		
Print Date: 10/15/2016 10:38:59AM						J flaggin	g is activated

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Results of <b>MW-87Z-0916</b> Client Sample ID: <b>MW-87Z-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550008 Lab Project ID: 1165550	V Event 2	Collection Date: 09/18/16 15:10 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:										
Results by <b>Volatile Fuels</b> <u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	LOQ/CL 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/24/16 14:50					
<b>urrogates</b> 4-Bromofluorobenzene (surr)	85	50-150		%	1		09/24/16 14:50					
Batch Information Analytical Batch: VFC13323 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/24/16 14:50 Container ID: 1165550008-C		F	Prep Batch: \ Prep Method: Prep Date/Tin Prep Initial W Prep Extract \	VXX29626 SW5030E ne: 09/24/ t./Vol.: 5 m Vol: 5 mL	3 16 06:00 1L							
rint Date: 10/15/2016 10:38:59AM						J flaggin	g is activated					

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Results of MW-87Z-0916								
Client Sample ID: <b>MW-87Z-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550008 Lab Project ID: 1165550	V Event 2	Collection Date: 09/18/16 15:10 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
						Allowable		
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed	
Chloride	17.5	0.200	0.0620	mg/L	1		09/24/16 21:55	
Fluoride	0.109 J	0.200	0.0620	mg/L	1		09/24/16 21:55	
Sulfate	5.91	0.200	0.0620	mg/L	1		09/24/16 21:55	
Batch Information								
Analytical Batch: WIC5566 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/24/16 21:55 Container ID: 1165550008-I		F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11634 : METHOD ne: 09/23/1 /t./Vol.: 10 r Vol: 10 mL	l6 16:58 mL			
Paramotor			וח	Linite	DE	Allowable	Date Analyzed	
Turbidity	5.60	0.200	<u>DL</u> 0.100	NTU	<u>DF</u> 1	Limits	09/19/16 17:00	
Analytical Batch: WAT10740 Analytical Method: SM21 2130B Analyst: KBE Analytical Date/Time: 09/19/16 17:00 Container ID: 1165550008-J								
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 57.4	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/23/16 16:53	
Batch Information Analytical Batch: WTI4518 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/23/16 16:53 Container ID: 1165550008-J								
Parameter Total Dissolved Solids	Result Qual 142	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/21/16 18:31	
Print Date: 10/15/2016 10:38:59AM						J flaggin	g is activated	
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	07.562.2343 <b>f</b> 90	7.561.5301 w	ww.us.sgs.co	om		Membe	or of SGS Group	
SGS				Sa USA	LNG F ampling L-FG-G	acilities Ground and Testing Re RZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16	
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Results of MW-87Z-0916								
Client Sample ID: <b>MW-87Z-0916</b> Client Project ID: <b>105.00148.16001 F</b> Lab Sample ID: 1165550008 Lab Project ID: 1165550	KW Event 2	C R M S	ollection Da eceived Da latrix: Water olids (%): ocation:	tte: 09/18/1 te: 09/19/10 r (Surface, E	6 15:10 6 13:01 Eff., Gro	) ound)		
Results by Waters Department			]					
Batch Information								
Analytical Batch: STS5211 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/21/16 18:31 Container ID: 1165550008-J								
<u>Parameter</u> Total Suspended Solids	<u>Result Qual</u> 11.3	<u>LOQ/CL</u> 1.47	<u>DL</u> 0.456	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 09/21/16 12:00	
Analytical Batch: STS5215 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/21/16 12:00 Container ID: 1165550008-H								
<u>Parameter</u> pH	<u>Result Qual</u> 6.80	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 09/23/16 16:53	
Batch Information Analytical Batch: WTI4513 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 16:53 Container ID: 1165550008-J								
<u>Parameter</u> Nitrate-N Nitrite-N	<u>Result Qual</u> 0.0500 U 0.0500 U	<u>LOQ/CL</u> 0.100 0.100	<u>DL</u> 0.0300 0.0300	<u>Units</u> mg/L mg/L	<u>DF</u> 2 2	<u>Allowable</u> Limits	Date Analyzed 09/20/16 14:16 09/20/16 14:16	
Batch Information Analytical Batch: WFI2503 Analytical Method: SM21 4500NO3-F Analyst: KBE Analytical Date/Time: 09/20/16 14:16 Container ID: 1165550008-I								
Print Date: 10/15/2016 10:38:59AM						J flaggin	g is activated	
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#### Results of MW-87B-0916

Client Sample ID: **MW-87B-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550009 Lab Project ID: 1165550 Collection Date: 09/18/16 15:10 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Metals by ICP/MS

					<u> </u>	Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
Aluminum	239	2.00	0.620	ug/L	2.5		09/22/16 13:02
Antimony	0.0487 J	0.0500	0.0150	ug/L	2.5		09/22/16 13:02
Arsenic	2.22	0.800	0.200	ug/L	2.5		09/22/16 13:02
Barium	41.5	0.250	0.0400	ug/L	2.5		09/22/16 13:02
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 13:02
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:02
Boron	6.11	5.00	1.50	ug/L	2.5		09/22/16 13:02
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:02
Calcium	14700	50.0	15.0	ug/L	2.5		09/22/16 13:02
Chromium	35.4	0.500	0.150	ug/L	2.5		09/22/16 13:02
Cobalt	0.888	0.0200	0.0100	ug/L	2.5		09/22/16 13:02
Copper	2.19	0.500	0.200	ug/L	2.5		09/22/16 13:02
Iron	9460	20.0	6.20	ug/L	2.5		09/22/16 13:02
Lead	0.469	0.100	0.0310	ug/L	2.5		09/22/16 13:02
Magnesium	5670	20.0	6.20	ug/L	2.5		09/22/16 13:02
Manganese	370	0.100	0.0310	ug/L	2.5		09/22/16 13:02
Molybdenum	1.60	0.0500	0.0150	ug/L	2.5		09/22/16 13:02
Nickel	25.8	0.620	0.0620	ug/L	2.5		09/22/16 13:02
Potassium	1940	50.0	15.0	ug/L	2.5		09/22/16 13:02
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 13:02
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:02
Sodium	7500	100	31.0	ug/L	2.5		09/22/16 13:02
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:02
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 13:02
Vanadium	0.377 J	1.00	0.310	ug/L	2.5		09/22/16 13:02
Zinc	6.14	3.10	0.400	ug/L	2.5		09/22/16 13:02

## **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 13:02 Container ID: 1165550009-B Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/15/2016 10:38:59AM

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SGS		Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16						
Results of MW-87B-0916								
Client Sample ID: <b>MW-87B-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165550009 Lab Project ID: 1165550	W Event 2	Collection Date: 09/18/16 15:10 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Metals Department								
Parameter Mercury	<u>Result Qual</u> 1.18	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	Allowable Limits	<u>Date Analyzed</u> 10/13/16 18:30	
Batch Information								
Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 18:30 Container ID: 1165550009-A			Prep Batch: Prep Methoc Prep Date/Ti Prep Initial V Prep Extract	MXX30289 d: METHOD ime: 10/12/ ⁷ Vt./Vol.: 50 : Vol: 50 mL	16 16:45 mL			
Container ID: 1165550009-A			Prep Extract	Vol: 50 mL				

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Confic LNG Facilities Groundwater G Sampling and Testing Report - Ev USAL-FG-GRZZZ-00-002016-004 F 16-D								
Results of MW-87B-0916								
Client Sample ID: <b>MW-87B-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165550009 Lab Project ID: 1165550	W Event 2							
Results by Semivolatile Organic Fuel	s							
Parameter Diesel Range Organics	<u>Result Qual</u> 0.354 J	<u>LOQ/CL</u> 0.588	<u>DL</u> 0.176	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/01/16 01:37	
<b>Surrogates</b> 5a Androstane (surr)	102	50-150		%	1		10/01/16 01:37	
Potch Information								
Analytical Batch: XFC12899 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 10/01/16 01:37 Container ID: 1165550009-F			Prep Batch: Prep Method Prep Date/Ti Prep Initial V Prep Extract	XXX36403 I: SW35200 me: 09/28/ /t./Vol.: 255 Vol: 1 mL	C 16 08:46 5 mL			
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.245 U	<u>LOQ/CL</u> 0.490	<u>DL</u> 0.147	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 10/01/16 01:37	
Surrogates								
n-Triacontane-d62 (surr)	100	50-150		%	1		10/01/16 01:37	
Batch Information								
Analytical Batch: XFC12899 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 10/01/16 01:37 Container ID: 1165550009-F			Prep Batch: Prep Method Prep Date/Ti Prep Initial V Prep Extract	XXX36403 I: SW35200 me: 09/28/ [,] /t./Vol.: 255 Vol: 1 mL	C 16 08:46 5 mL			
Print Date: 10/15/2016 10:38:59AM						J flaggin	g is activated	

SGS North America Inc.

SGS				S US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
Results of <b>MW-87B-0916</b> Client Sample ID: <b>MW-87B-0916</b> Client Project ID: <b>105.00148.16001 H</b> Lab Sample ID: 1165550009 Lab Project ID: 1165550	KW Event 2	Collection Date: 09/18/16 15:10 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by <b>Volatile Fuels</b> <u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/24/16 15:09
u <b>rrogates</b> 4-Bromofluorobenzene (surr)	88.2	50-150		%	1		09/24/16 15:09
Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/24/16 15:09 Container ID: 1165550009-C		7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7	Prep Method: Prep Date/Tir Prep Initial W Prep Extract Y	: SW5030E ne: 09/24/ 't./Vol.: 5 m Vol: 5 mL	3 16 06:00 hL		

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SGS				S US	LNG Fa Sampling a AL-FG-GF	acilities Ground and Testing Re RZZZ-00-00201	Confidential lwater Quality port - Event 2 l6-004 Rev. 0 16-Dec-16
Results of MW-87B-0916							
Client Sample ID: <b>MW-87B-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550009 Lab Project ID: 1165550	V Event 2	C R M Si La	ollection Da eceived Da latrix: Water olids (%): ocation:	ate: 09/18/ te: 09/19/ ⁻ r (Surface,	16 15:10 16 13:01 Eff., Grc	bund)	
			_			Allewshie	
<u>Parameter</u> Chloride Fluoride Sulfate	<u>Result Qual</u> 17.5 0.115 J 5.91	LOQ/CL 0.200 0.200 0.200	<u>DL</u> 0.0620 0.0620 0.0620	<u>Units</u> mg/L mg/L mg/L	<u>DF</u> 1 1 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/24/16 22:17 09/24/16 22:17 09/24/16 22:17
Batch Information Analytical Batch: WIC5566 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/24/16 22:17 Container ID: 1165550009-I		F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11634 : METHOD ne: 09/23/1 /t./Vol.: 10 n Vol: 10 mL	16 16:58 nL		
<u>Parameter</u> Turbidity	<u>Result Qual</u> 6.90	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 09/19/16 17:00
Batch Information Analytical Batch: WAT10740 Analytical Method: SM21 2130B Analyst: KBE Analytical Date/Time: 09/19/16 17:00 Container ID: 1165550009-J							
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 53.9	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 17:00
Analytical Batch: WTI4518 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/23/16 17:00 Container ID: 1165550009-J							
Parameter Total Dissolved Solids	Result Qual 140	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/21/16 18:31
Print Date: 10/15/2016 10:38:59AM	0 West Potter Dri	ve Anchorage	, AK 95518			J flaggin	g is activated
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SGS				Sa USA	LNG F ampling L-FG-G	acilities Ground and Testing Re RZZZ-00-00207	Confidential lwater Quality port - Event 2 l6-004 Rev. 0 16-Dec-16
Results of MW-87B-0916							
Client Sample ID: <b>MW-87B-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165550009 Lab Project ID: 1165550	W Event 2	C R M S	ollection Da eceived Da latrix: Water olids (%): ocation:	ate: 09/18/1 te: 09/19/10 r (Surface, E	6 15:10 6 13:01 Eff., Gro	) ound)	
Results by Waters Department			]				
Batch Information							
Analytical Batch: STS5211 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/21/16 18:31 Container ID: 1165550009-J							
<u>Parameter</u> Total Suspended Solids	<u>Result Qual</u> 10.9	<u>LOQ/CL</u> 1.35	<u>DL</u> 0.419	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/21/16 12:00
Analytical Batch: STS5215 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/21/16 12:00 Container ID: 1165550009-H							
<u>Parameter</u> pH	<u>Result Qual</u> 7.00	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 09/23/16 17:00
Batch Information Analytical Batch: WTI4513 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 17:00 Container ID: 1165550009-J							
<u>Parameter</u> Nitrate-N Nitrite-N	<u>Result Qual</u> 0.0500 U 0.0500 U	<u>LOQ/CL</u> 0.100 0.100	<u>DL</u> 0.0300 0.0300	<u>Units</u> mg/L mg/L	<u>DF</u> 2 2	<u>Allowable</u> Limits	Date Analyzed 09/20/16 14:18 09/20/16 14:18
Batch Information Analytical Batch: WFI2503 Analytical Method: SM21 4500NO3-F Analyst: KBE Analytical Date/Time: 09/20/16 14:18 Container ID: 1165550009-I							
Print Date: 10/15/2016 10:38:59AM						J flaggin	g is activated
SGS North America Inc.	00 West Potter Dri 907.562.2343 f 90	ive Anchorage 17.561.5301 w	, AK 95518 ww.us.sgs.co	om		Membr	ar of SGS Group

SGS		Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16							
Results of EB-H1558-0916									
Client Sample ID: <b>EB-H1558-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550010 Lab Project ID: 1165550	V Event 2	C R M S L	ollection Da eceived Da atrix: Wate olids (%): ocation:	ate: 09/16/ lte: 09/19/ r (Surface,	'16 16:55 16 13:01 Eff., Gro	und)			
						Allowable			
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed		
Mercury	0.500 U	1.00	0.500	ng/L	1		10/13/16 18:34		
Batch Information									
Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 18:34 Container ID: 1165550010-A		F F F	Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30289 I: METHOD me: 10/12/ /t./Vol.: 50 Vol: 50 mL	16 16:45 mL				

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

#### Results of EB-H1558-0916

Client Sample ID: **EB-H1558-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550010 Lab Project ID: 1165550 Collection Date: 09/16/16 16:55 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

Result Oual	1.00/01	וח	l Inite	DE	Limite	Date Analyzed
1.39 J	2.00	0.620	ua/l	2.5	Linito	09/22/16 13:05
0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:05
0.400 U	0.800	0.200	ua/L	2.5		09/22/16 13:05
0.125 U	0.250	0.0400	ug/L	2.5		09/22/16 13:05
0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 13:05
0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:05
2.50 U	5.00	1.50	ug/L	2.5		09/22/16 13:05
0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:05
19.3 J	50.0	15.0	ug/L	2.5		09/22/16 13:05
0.250 U	0.500	0.150	ug/L	2.5		09/22/16 13:05
0.0100 U	0.0200	0.0100	ug/L	2.5		09/22/16 13:05
0.215 J	0.500	0.200	ug/L	2.5		09/22/16 13:05
10.0 U	20.0	6.20	ug/L	2.5		09/22/16 13:05
0.0500 U	0.100	0.0310	ug/L	2.5		09/22/16 13:05
10.0 U	20.0	6.20	ug/L	2.5		09/22/16 13:05
0.0788 J	0.100	0.0310	ug/L	2.5		09/22/16 13:05
0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:05
0.106 J	0.620	0.0620	ug/L	2.5		09/22/16 13:05
25.0 U	50.0	15.0	ug/L	2.5		09/22/16 13:05
0.500 U	1.00	0.310	ug/L	2.5		09/22/16 13:05
50.0 U	100	31.0	ug/L	2.5		09/22/16 13:05
0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:05
50.0 U	100	31.0	ug/L	2.5		09/22/16 13:05
0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:05
0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 13:05
0.500 U	1.00	0.310	ug/L	2.5		09/22/16 13:05
4.64	3.10	0.400	ug/L	2.5		09/22/16 13:05
	i i i i i i i i i i i i i i i i i i i	Prep Batch: M Prep Method: Prep Date/Tim Prep Initial Wt Prep Extract V	IXX30212 E200.2 ie: 09/21/1 ./Vol.: 50 r íol: 10 mL	6 07:23 nL		
	$\begin{array}{c} 1.39 \text{ J} \\ 0.0250 \text{ U} \\ 0.400 \text{ U} \\ 0.125 \text{ U} \\ 0.0250 \text{ U} \\ 2.50 \text{ U} \\ 2.50 \text{ U} \\ 2.50 \text{ U} \\ 0.0250 \text{ U} \\ 19.3 \text{ J} \\ 0.250 \text{ U} \\ 0.0100 \text{ U} \\ 0.215 \text{ J} \\ 10.0 \text{ U} \\ 0.0500 \text{ U} \\ 10.0 \text{ U} \\ 0.0788 \text{ J} \\ 0.0250 \text{ U} \\ 0.106 \text{ J} \\ 25.0 \text{ U} \\ 0.500 \text{ U} \\ 50.0 \text{ U} \\ 50.0 \text{ U} \\ 50.0 \text{ U} \\ 0.0100 \text{ U} \\ 50.0 \text{ U} \\ 0.0100 \text{ U} \\ 0.500 \text{ U} \\ 4.64 \end{array}$	1.39 J       2.00         0.0250 U       0.0500         0.400 U       0.800         0.125 U       0.250         0.0250 U       0.0500         2.50 U       5.00         0.0250 U       0.0500         2.50 U       5.00         0.0250 U       0.0500         19.3 J       50.0         0.250 U       0.500         0.250 U       0.500         0.0100 U       0.0200         0.215 J       0.500         0.0100 U       20.0         0.0500 U       0.100         10.0 U       20.0         0.0500 U       0.100         10.0 U       20.0         0.0500 U       0.100         0.0500 U       0.100         0.0250 U       0.0500         0.106 J       0.620         25.0 U       50.0         0.500 U       1.00         50.0 U       100         0.0100 U       0.0200         50.0 U       1.00         0.100 U       0.200         0.100 U       0.200         0.100 U       0.200         0.500 U       1.00         4.	1.39 J         2.00         0.620           0.0250 U         0.0500         0.0150           0.400 U         0.800         0.200           0.125 U         0.250         0.0400           0.0250 U         0.0500         0.0150           0.0250 U         0.0500         0.0150           2.50 U         5.00         1.50           0.0250 U         0.0500         0.0150           19.3 J         50.0         15.0           0.250 U         0.500         0.150           0.0250 U         0.500         0.150           0.0250 U         0.500         0.150           0.100 U         0.0200         0.0100           0.215 J         0.500         0.200           10.0 U         20.0         6.20           0.0500 U         0.100         0.0310           10.0 U         20.0         6.20           0.500 U         0.0500         0.0150           0.106 J         0.620         0.0620           25.0 U         50.0         15.0           0.500 U         1.00         31.0           0.0100 U         0.0200         0.00620           50.0 U         1.00	1.39 J       2.00       0.620       ug/L         0.0250 U       0.0500       0.0150       ug/L         0.400 U       0.800       0.200       ug/L         0.125 U       0.250       0.0400       ug/L         0.0250 U       0.0500       0.0250       ug/L         0.0250 U       0.0500       0.0150       ug/L         2.50 U       5.00       1.50       ug/L         0.0250 U       0.0500       0.0150       ug/L         0.250 U       0.500       0.150       ug/L         0.250 U       0.500       0.150       ug/L         0.0100 U       0.0200       0.0100       ug/L         0.0100 U       0.0200       0.0310       ug/L         0.0500 U       0.100       0.310       ug/L         0.0500 U       1.00       0.310       ug/L         0.0500 U       1.00       31.0       ug/L         0.500 U       1.00       31.0       ug/L         0.500 U	1.39 J       2.00       0.620       ug/L       2.5         0.0250 U       0.0500       0.0150       ug/L       2.5         0.400 U       0.800       0.200       ug/L       2.5         0.125 U       0.250       0.0400       ug/L       2.5         0.0250 U       0.0500       0.0150       ug/L       2.5         0.0250 U       0.0500       0.0150       ug/L       2.5         2.50 U       5.00       1.50       ug/L       2.5         0.0250 U       0.0500       0.0150       ug/L       2.5         0.0250 U       0.0500       0.0150       ug/L       2.5         0.0250 U       0.0500       0.0150       ug/L       2.5         0.0250 U       0.500       0.150       ug/L       2.5         0.0100 U       0.0200       0.0100       ug/L       2.5         0.0100 U       0.0200       0.0100       ug/L       2.5         0.0500 U       0.100       0.310       ug/L       2.5         0.00500 U       0.100       0.310       ug/L       2.5         0.000 U       0.0200       0.0620       ug/L       2.5         0.500 U <t< td=""><td>1.39 J       2.00       0.620       ug/L       2.5         0.0250 U       0.0500       0.0150       ug/L       2.5         0.400 U       0.800       0.200       ug/L       2.5         0.125 U       0.250       0.0400       ug/L       2.5         0.0250 U       0.0500       0.0250       ug/L       2.5         0.0250 U       0.0500       0.0150       ug/L       2.5         2.50 U       5.00       1.50       ug/L       2.5         0.0250 U       0.0500       0.0150       ug/L       2.5         0.250 U       0.0500       0.0150       ug/L       2.5         0.250 U       0.500       0.150       ug/L       2.5         0.250 U       0.500       0.150       ug/L       2.5         0.0100 U       0.0200       0.0100       ug/L       2.5         0.0500 U       0.100       0.0310       ug/L       2.5         0.0500 U       0.100       0.0310       ug/L       2.5         0.0500 U       0.100       0.0310       ug/L       2.5         0.0500 U       0.0620       ug/L       2.5       2.5         0.500 U       1.00&lt;</td></t<>	1.39 J       2.00       0.620       ug/L       2.5         0.0250 U       0.0500       0.0150       ug/L       2.5         0.400 U       0.800       0.200       ug/L       2.5         0.125 U       0.250       0.0400       ug/L       2.5         0.0250 U       0.0500       0.0250       ug/L       2.5         0.0250 U       0.0500       0.0150       ug/L       2.5         2.50 U       5.00       1.50       ug/L       2.5         0.0250 U       0.0500       0.0150       ug/L       2.5         0.250 U       0.0500       0.0150       ug/L       2.5         0.250 U       0.500       0.150       ug/L       2.5         0.250 U       0.500       0.150       ug/L       2.5         0.0100 U       0.0200       0.0100       ug/L       2.5         0.0500 U       0.100       0.0310       ug/L       2.5         0.0500 U       0.100       0.0310       ug/L       2.5         0.0500 U       0.100       0.0310       ug/L       2.5         0.0500 U       0.0620       ug/L       2.5       2.5         0.500 U       1.00<



## Results of EB-H1558-0916

Client Sample ID: **EB-H1558-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550010 Lab Project ID: 1165550 Collection Date: 09/16/16 16:55 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

## **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 13:05 Container ID: 1165550010-B Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/15/2016 10:38:59AM

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

#### Results of EB1-0916

Client Sample ID: **EB1-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550011 Lab Project ID: 1165550 Collection Date: 09/16/16 16:50 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Metals by ICP/MS

					4	Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Limits</u>	Date Analyzed
Aluminum	3.41	2.00	0.620	ug/L	2.5		09/22/16 13:08
Antimony	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:08
Arsenic	0.400 U	0.800	0.200	ug/L	2.5		09/22/16 13:08
Barium	0.162 J	0.250	0.0400	ug/L	2.5		09/22/16 13:08
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 13:08
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:08
Boron	2.50 U	5.00	1.50	ug/L	2.5		09/22/16 13:08
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:08
Calcium	25.0 J	50.0	15.0	ug/L	2.5		09/22/16 13:08
Chromium	0.250 U	0.500	0.150	ug/L	2.5		09/22/16 13:08
Cobalt	0.0134 J	0.0200	0.0100	ug/L	2.5		09/22/16 13:08
Copper	0.250 U	0.500	0.200	ug/L	2.5		09/22/16 13:08
Iron	8.43 J	20.0	6.20	ug/L	2.5		09/22/16 13:08
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		09/22/16 13:08
Magnesium	9.44 J	20.0	6.20	ug/L	2.5		09/22/16 13:08
Manganese	0.122	0.100	0.0310	ug/L	2.5		09/22/16 13:08
Molybdenum	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:08
Nickel	0.115 J	0.620	0.0620	ug/L	2.5		09/22/16 13:08
Potassium	25.0 U	50.0	15.0	ug/L	2.5		09/22/16 13:08
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 13:08
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:08
Sodium	50.0 U	100	31.0	ug/L	2.5		09/22/16 13:08
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:08
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 13:08
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 13:08
Zinc	5.00	3.10	0.400	ug/L	2.5		09/22/16 13:08

## **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 13:08 Container ID: 1165550011-B Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/15/2016 10:38:59AM

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Results of EB1-0916									
Client Sample ID: <b>EB1-0916</b> Client Project ID: <b>105.00148.16001</b> _ab Sample ID: 1165550011 _ab Project ID: 1165550	KW Event 2	C R M S L							
Results by Metals Department									
<u>Parameter</u> Mercury	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 10/13/16 18:57		
Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 18:5 Container ID: 1165550011-A	7		Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30289 I: METHOD me: 10/12/ /t./Vol.: 50 mL Vol: 50 mL	16 16:45 mL				

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Results of <b>TB-6-0916</b>							
Client Sample ID: <b>TB-6-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550012 Lab Project ID: 1165550	Collection Date: 09/16/16 10:37 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Parameter Mercury	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 10/13/16 19:01
Batch Information Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 19:01 Container ID: 1165550012-A		F	Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30289 : METHOD me: 10/12/ [,] /t./Vol.: 50 n Vol: 50 mL	16 16:45 mL		

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Results of <b>TB3-0916</b> Client Sample ID: <b>TB3-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550013 Lab Project ID: 1165550	W Event 2	Collection Date: 09/18/16 09:41 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:								
Results by <b>Volatile Fuels</b> Parameter Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed			
<b>urrogates</b> 4-Bromofluorobenzene (surr)	84.7	50-150		%	1		09/24/16 15:2			
Analytical Batch: VFC13323 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/24/16 15:28 Container ID: 1165550013-A		F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract V	VXX29626 SW5030E ne: 09/24/ t./Vol.: 5 m Vol: 5 mL	3 16 06:00 IL					

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Results of MW-82A-0916								
Client Sample ID: <b>MW-82A-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550014 Lab Project ID: 1165550	V Event 2	Collection Date: 09/16/16 10:37 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by <b>Dissolved Metals</b>								
Parameter	Result Qual	LOQ/CL	DL	Units	DF	Allowable	Date Analyzed	
Mercury	0.500 U	1.00	0.500	ng/L	1		10/13/16 19:06	
Batch Information								
Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 19:06 Container ID: 1165550014-A			Prep Batch: Prep Methoc Prep Date/Ti Prep Initial V Prep Extract	MXX30289 d: METHOD ime: 10/12/ [/] Vt./Vol.: 50 nL Vol: 50 mL	16 16:45 mL			

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Results of <b>MW-82B-0916</b> Client Sample ID: <b>MW-82B-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550015 Lab Project ID: 1165550	Collection Date: 09/16/16 13:31 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%):								
Results by <b>Dissolved Metals</b> Parameter Mercury	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 10/13/16 19:10		
Batch Information Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 19:10 Container ID: 1165550015-A		1	Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	MXX30289 : METHOD me: 10/12/ /t./Vol.: 50 Vol: 50 mL	16 16:45 mL				

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SGS		LNG Facilities Groundwa Sampling and Testing Repo USAL-FG-GRZZZ-00-002016-						
Results of <b>MW-27B-0916</b> Client Sample ID: <b>MW-27B-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550016 Lab Project ID: 1165550	Collection Date: 09/16/16 16:55 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by <b>Dissolved Metals</b> Parameter Mercury	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/13/16 19:19	
Batch Information Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 19:19 Container ID: 1165550016-A		F F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	MXX30289 : METHOD me: 10/12/1 /t./Vol.: 50 n Vol: 50 mL	16 16:45 mL			

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SGS		Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16							
Results of MW-74A-0916									
Client Sample ID: <b>MW-74A-0916</b> Client Project ID: <b>105.00148.16001 KW</b> Lab Sample ID: 1165550017 Lab Project ID: 1165550	/ Event 2	Collection Date: 09/17/16 10:37 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Groun Solids (%): Location:				und)			
Parameter Mercury	<u>Result Qual</u> 0.550 J	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 10/13/16 19:24		
Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 19:24 Container ID: 1165550017-A		F F F	Prep Batch: Prep Method Prep Date/Tir Prep Initial W Prep Extract	MXX30289 : METHOD me: 10/12/1 /t./Vol.: 50 r Vol: 50 mL	16 16:45 mL				

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Results of <b>MW-74B-0916</b> Client Sample ID: <b>MW-74B-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550018 Lab Project ID: 1165550	· V Event 2	Ci Ri M Si Lo	ollection Da eceived Da atrix: Wate blids (%): ocation:				
Results by <b>Dissolved Metals</b> <u>Parameter</u> Mercury	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/13/16 19:28
Batch Information Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 19:28 Container ID: 1165550018-A		F F F	Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30289 : METHOD me: 10/12/ /t./Vol.: 50 n Vol: 50 mL	16 16:45 mL		

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SGS				S US	LNG Fa Sampling a AL-FG-GF	ncilities Ground nd Testing Re 2ZZ-00-00201	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16		
Results of <b>MW-50A-0916</b> Client Sample ID: <b>MW-50A-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550019 Lab Project ID: 1165550	V Event 2	Collection Date: 09/18/16 12:46 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by <b>Dissolved Metals</b> Parameter           Mercury	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 10/13/16 19:33		
Batch Information Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 19:33 Container ID: 1165550019-A			Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	MXX30289 : METHOD me: 10/12/1 /t./Vol.: 50 n Vol: 50 mL	16 16:45 mL				

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## Results of MW-50A-0916

Client Sample ID: **MW-50A-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550019 Lab Project ID: 1165550 Collection Date: 09/18/16 12:46 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	3.38	2.00	0.620	ug/L	2.5		09/22/16 13:10
Antimony	0.153	0.0500	0.0150	ug/L	2.5		09/22/16 13:10
Arsenic	16.7	0.800	0.200	ug/L	2.5		09/22/16 13:10
Barium	19.8	0.250	0.0400	ug/L	2.5		09/22/16 13:10
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 13:10
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:10
Boron	20.4	5.00	1.50	ug/L	2.5		09/22/16 13:10
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:10
Calcium	24900	50.0	15.0	ug/L	2.5		09/22/16 13:10
Chromium	0.250 U	0.500	0.150	ug/L	2.5		09/22/16 13:10
Cobalt	0.0616	0.0200	0.0100	ug/L	2.5		09/22/16 13:10
Copper	0.238 J	0.500	0.200	ug/L	2.5		09/22/16 13:10
Iron	25.3	20.0	6.20	ug/L	2.5		09/22/16 13:10
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		09/22/16 13:10
Magnesium	7400	20.0	6.20	ug/L	2.5		09/22/16 13:10
Manganese	101	0.100	0.0310	ug/L	2.5		09/22/16 13:10
Molybdenum	0.598	0.0500	0.0150	ug/L	2.5		09/22/16 13:10
Nickel	0.585 J	0.620	0.0620	ug/L	2.5		09/22/16 13:10
Potassium	4140	50.0	15.0	ug/L	2.5		09/22/16 13:10
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 13:10
Silicon	14500	100	31.0	ug/L	2.5		09/22/16 13:10
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:10
Sodium	7160	100	31.0	ug/L	2.5		09/22/16 13:10
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:10
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 13:10
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 13:10
Zinc	4.36	3.10	0.400	ug/L	2.5		09/22/16 13:10
Batch Information							
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 13:10 Container ID: 1165550019-B			Prep Batch: N Prep Method: Prep Date/Tim Prep Initial Wt Prep Extract V	/IXX30212 E200.2 ne: 09/21/ ./Vol.: 50 /ol: 10 mL			
Parameter	Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable Limits	Date Analyzed
Hardness as CaCO3	92.8	1.00	1.00	mg/L	2.5		09/22/16 13:10

Print Date: 10/15/2016 10:38:59AM

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#### Results of MW-50A-0916

Client Sample ID: **MW-50A-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550019 Lab Project ID: 1165550 Collection Date: 09/18/16 12:46 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Dissolved Metals by ICP/MS

## **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 13:10 Container ID: 1165550019-B Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/15/2016 10:38:59AM

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Results of MW-50B-0916							
Client Sample ID: <b>MW-50B-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550020 Lab Project ID: 1165550	Collection Date: 09/18/16 09:41 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by <b>Dissolved Metals</b>			_				
Parameter Mercury	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 10/13/16 19:37
Batch Information							
Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 19:37 Container ID: 1165550020-A			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	MXX30289 I: METHOD Ime: 10/12/ Vt./Vol.: 50 n Vol: 50 mL	16 16:45 mL		

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## Results of MW-50B-0916

Client Sample ID: **MW-50B-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550020 Lab Project ID: 1165550 Collection Date: 09/18/16 09:41 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

						Allowable		
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed	
Aluminum	1.58 J	2.00	0.620	ug/L	2.5		09/22/16 13:13	
Antimony	0.0561	0.0500	0.0150	ug/L	2.5		09/22/16 13:13	
Arsenic	0.400 U	0.800	0.200	ug/L	2.5		09/22/16 13:13	
Barium	25.6	0.250	0.0400	ug/L	2.5		09/22/16 13:13	
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 13:13	
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:13	
Boron	4.82 J	5.00	1.50	ug/L	2.5		09/22/16 13:13	
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:13	
Calcium	13000	50.0	15.0	ug/L	2.5		09/22/16 13:13	
Chromium	0.250 U	0.500	0.150	ug/L	2.5		09/22/16 13:13	
Cobalt	0.837	0.0200	0.0100	ug/L	2.5		09/22/16 13:13	
Copper	0.262 J	0.500	0.200	ug/L	2.5		09/22/16 13:13	
Iron	390	20.0	6.20	ug/L	2.5		09/22/16 13:13	
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		09/22/16 13:13	
Magnesium	5070	20.0	6.20	ug/L	2.5		09/22/16 13:13	
Manganese	49.4	0.100	0.0310	ug/L	2.5		09/22/16 13:13	
Molybdenum	0.596	0.0500	0.0150	ug/L	2.5		09/22/16 13:13	
Nickel	7.49	0.620	0.0620	ug/L	2.5		09/22/16 13:13	
Potassium	1930	50.0	15.0	ug/L	2.5		09/22/16 13:13	
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 13:13	
Silicon	15800	100	31.0	ug/L	2.5		09/22/16 13:13	
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:13	
Sodium	6750	100	31.0	ug/L	2.5		09/22/16 13:13	
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:13	
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 13:13	
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 13:13	
Zinc	5.32	3.10	0.400	ug/L	2.5		09/22/16 13:13	
Batch Information								
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 13:13 Container ID: 1165550020-B	Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL							
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	Allowable Limits	Date Analyzed	

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1.00

1.00

2.5

mg/L

53.3

09/22/16 13:13

Hardness as CaCO3

Print Date: 10/15/2016 10:38:59AM



#### Results of MW-50B-0916

Client Sample ID: **MW-50B-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550020 Lab Project ID: 1165550 Collection Date: 09/18/16 09:41 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

## **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 13:13 Container ID: 1165550020-B Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/15/2016 10:38:59AM

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SGS		LNG Facilities Groundwater Q LNG Facilities Groundwater Q Sampling and Testing Report - Ev USAL-FG-GRZZZ-00-002016-004 F 16-D							
Results of <b>MW-87Z-0916</b> Client Sample ID: <b>MW-87Z-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165550021 Lab Project ID: 1165550	V Event 2	Collection Date: 09/18/16 15:10 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by <b>Dissolved Metals</b> Parameter           Mercury	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/13/16 19:42		
Batch Information Analytical Batch: MCV5746 Analytical Method: EPA 1631 E Analyst: NEG Analytical Date/Time: 10/13/16 19:42 Container ID: 1165550021-A		F F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	MXX30289 : METHOD me: 10/12/1 /t./Vol.: 50 n Vol: 50 mL	16 16:45 mL				

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#### Results of MW-87Z-0916

Client Sample ID: **MW-87Z-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550021 Lab Project ID: 1165550 Collection Date: 09/18/16 15:10 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

						Allowable		
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed	
Aluminum	12.5	2.00	0.620	ug/L	2.5		09/22/16 13:16	
Antimony	0.0215 J	0.0500	0.0150	ug/L	2.5		09/22/16 13:16	
Arsenic	1.56	0.800	0.200	ug/L	2.5		09/22/16 13:16	
Barium	40.0	0.250	0.0400	ug/L	2.5		09/22/16 13:16	
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 13:16	
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:16	
Boron	5.90	5.00	1.50	ug/L	2.5		09/22/16 13:16	
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:16	
Calcium	14500	50.0	15.0	ug/L	2.5		09/22/16 13:16	
Chromium	2.17	0.500	0.150	ug/L	2.5		09/22/16 13:16	
Cobalt	0.473	0.0200	0.0100	ug/L	2.5		09/22/16 13:16	
Copper	0.220 J	0.500	0.200	ug/L	2.5		09/22/16 13:16	
Iron	8200	20.0	6.20	ug/L	2.5		09/22/16 13:16	
Lead	0.0323 J	0.100	0.0310	ug/L	2.5		09/22/16 13:16	
Magnesium	5680	20.0	6.20	ug/L	2.5		09/22/16 13:16	
Manganese	366	0.100	0.0310	ug/L	2.5		09/22/16 13:16	
Molybdenum	0.480	0.0500	0.0150	ug/L	2.5		09/22/16 13:16	
Nickel	7.47	0.620	0.0620	ug/L	2.5		09/22/16 13:16	
Potassium	1970	50.0	15.0	ug/L	2.5		09/22/16 13:16	
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 13:16	
Silicon	17200	100	31.0	ug/L	2.5		09/22/16 13:16	
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:16	
Sodium	7550	100	31.0	ug/L	2.5		09/22/16 13:16	
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:16	
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 13:16	
Vanadium	0.413 J	1.00	0.310	ug/L	2.5		09/22/16 13:16	
Zinc	5.62	3.10	0.400	ug/L	2.5		09/22/16 13:16	
Batch Information								
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 13:16 Container ID: 1165550021-B			Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL					
Parameter	Result Qual	LOQ/CL	DL	Units	DF	<u>Allowable</u> Limits	Date Analyzed	

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1.00

1.00

mg/L

2.5

59.6

J flagging is activated

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09/22/16 13:16

Hardness as CaCO3



#### Results of MW-87Z-0916

Client Sample ID: **MW-87Z-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550021 Lab Project ID: 1165550 Collection Date: 09/18/16 15:10 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

## **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 13:16 Container ID: 1165550021-B Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/15/2016 10:38:59AM

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sults by Dissolved Metals       ameter     Result Qual     LOQ/CL     DL     Units     DF     Limits     Date       "cury     0.514 J     1.00     0.500     ng/L     1     10/1	
Initial         Result Qual         LOC/CL         DL         Onits         DF         Limits         Date           rcury         0.514 J         1.00         0.500         ng/L         1         10/1	
	3/16 20:04
tch Information	
Inalytical Batch:MCV5747Prep Batch:MXX30290Inalytical Method:EPA 1631 EPrep Method:METHODInalyst:NEGPrep Date/Time:10/12/16 16:45Inalytical Date/Time:10/13/16 20:04Prep Initial Wt./Vol.:50 mLContainer ID:1165550022-APrep Extract Vol:50 mL	

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#### Results of MW-87B-0917

Client Sample ID: **MW-87B-0917** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550022 Lab Project ID: 1165550 Collection Date: 09/18/16 15:10 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	13.7	2.00	0.620	ug/L	2.5		09/22/16 13:19
Antimony	0.0239 J	0.0500	0.0150	ug/L	2.5		09/22/16 13:19
Arsenic	1.77	0.800	0.200	ug/L	2.5		09/22/16 13:19
Barium	37.3	0.250	0.0400	ug/L	2.5		09/22/16 13:19
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 13:19
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:19
Boron	5.80	5.00	1.50	ug/L	2.5		09/22/16 13:19
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:19
Calcium	14000	50.0	15.0	ug/L	2.5		09/22/16 13:19
Chromium	2.42	0.500	0.150	ug/L	2.5		09/22/16 13:19
Cobalt	0.467	0.0200	0.0100	ug/L	2.5		09/22/16 13:19
Copper	0.232 J	0.500	0.200	ug/L	2.5		09/22/16 13:19
Iron	7730	20.0	6.20	ug/L	2.5		09/22/16 13:19
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		09/22/16 13:19
Magnesium	5550	20.0	6.20	ug/L	2.5		09/22/16 13:19
Manganese	347	0.100	0.0310	ug/L	2.5		09/22/16 13:19
Molybdenum	0.499	0.0500	0.0150	ug/L	2.5		09/22/16 13:19
Nickel	7.56	0.620	0.0620	ug/L	2.5		09/22/16 13:19
Potassium	1910	50.0	15.0	ug/L	2.5		09/22/16 13:19
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 13:19
Silicon	16600	100	31.0	ug/L	2.5		09/22/16 13:19
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:19
Sodium	7480	100	31.0	ug/L	2.5		09/22/16 13:19
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:19
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 13:19
Vanadium	0.316 J	1.00	0.310	ug/L	2.5		09/22/16 13:19
Zinc	5.09	3.10	0.400	ug/L	2.5		09/22/16 13:19
Batch Information							
Analytical Batch: MMS9544		F	Prep Batch: M	XX30212			
Analytical Method: 200.8 Low Level		F	Prep Method:	E200.2	07.00		
Analyst: VDL Analytical Date/Time: 09/22/16 13:19		F	Prep Date/Tim Prep Initial Wt	//ol : 50 m	o 07:23 nl		
Container ID: 1165550022-B		F	Prep Extract V	ol: 10 mL			

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Print Date: 10/15/2016 10:38:59AM						J flaggin	g is activated
<u>Parameter</u> Hardness as CaCO3	<u>Result Qual</u> 57.8	<u>LOQ/CL</u> 1.00	<u>DL</u> 1.00	<u>Units</u> mg/L	<u>DF</u> 2.5	Limits	<u>Date Analyzed</u> 09/22/16 13:19
						Allowable	



#### Results of MW-87B-0917

Client Sample ID: **MW-87B-0917** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165550022 Lab Project ID: 1165550 Collection Date: 09/18/16 15:10 Received Date: 09/19/16 13:01 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

## **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 13:19 Container ID: 1165550022-B Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/15/2016 10:38:59AM

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# Method Blank

Blank ID: MB for HBN 1743425 [MXX/30212] Blank Lab ID: 1353297 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165550006, 1165550007, 1165550008, 1165550009, 1165550010, 1165550011, 1165550019, 1165550020, 1165550021, 1165550022

_	Results by 200.8 Low Level				
	Demonster	Desults			11-24-
	Parameter	Results		<u>DL</u>	<u>Units</u>
	Aluminum	1.000	2.00	0.620	ug/L
	Antimony	0.0250U	0.0500	0.0150	ug/L
	Arsenic	0.400U	0.800	0.200	ug/L
	Barium	0.125U	0.250	0.0400	ug/L
	Beryllium	0.0250U	0.0500	0.0250	ug/L
	Bismuth	0.0250U	0.0500	0.0150	ug/L
	Boron	2.50U	5.00	1.50	ug/L
	Cadmium	0.0250U	0.0500	0.0150	ug/L
	Calcium	25.0U	50.0	15.0	ug/L
	Chromium	0.250U	0.500	0.150	ug/L
	Cobalt	0.0100U	0.0200	0.0100	ug/L
	Copper	0.250U	0.500	0.200	ug/L
	Iron	10.0U	20.0	6.20	ug/L
	Lead	0.0500U	0.100	0.0310	ug/L
	Magnesium	10.0U	20.0	6.20	ug/L
	Manganese	0.0500U	0.100	0.0310	ug/L
	Molybdenum	0.0250U	0.0500	0.0150	ug/L
	Nickel	0.310U	0.620	0.0620	ug/L
	Potassium	25.0U	50.0	15.0	ug/L
	Selenium	0.500U	1.00	0.310	ug/L
	Silicon	50.0U	100	31.0	ug/L
	Silver	0.0100U	0.0200	0.00620	ug/L
	Sodium	50.0U	100	31.0	ug/L
	Thallium	0.0100U	0.0200	0.00620	ug/L
	Tin	0.100U	0.200	0.0620	ug/L
	Vanadium	0.500U	1.00	0.310	ug/L
	Zinc	1.11J	3.10	0.400	ug/L

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer Nexlon P5 Analyst: VDL Analytical Date/Time: 9/22/2016 11:28:54AM Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 9/21/2016 7:23:38AM Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/15/2016 10:39:09AM

SGS North America Inc.



#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165550 [MXX30212] Blank Spike Lab ID: 1353298 Date Analyzed: 09/22/2016 11:31

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165550006, 1165550007, 1165550008, 1165550009, 1165550010, 1165550011, 1165550019, 1165550020, 1165550021, 1165550022

Results by 200.8 Low Level				
	B	lank Spike	(ug/L)	
Parameter	Spike	Result	<u>Rec (%)</u>	CL
Aluminum	50	45.5	91	(85-115)
Antimony	5	5.38	108	(85-115)
Arsenic	25	24.4	98	(85-115)
Barium	25	25.4	101	(85-115)
Beryllium	12.5	11.4	91	(85-115)
Bismuth	12.5	12.1	97	(85-115)
Boron	50	43.1	86	(85-115)
Cadmium	12.5	12.6	101	(85-115)
Calcium	5000	4380	88	(85-115)
Chromium	12.5	11.6	93	(85-115)
Cobalt	12.5	12.1	97	(85-115)
Copper	25	24.3	97	(85-115)
Iron	500	475	95	(85-115)
Lead	5	4.91	98	(85-115)
Magnesium	5000	4460	89	(85-115)
Manganese	50	47.8	96	(85-115)
Molybdenum	12.5	12.3	99	(85-115)
Nickel	12.5	11.9	95	(85-115)
Potassium	5000	4580	92	(85-115)
Selenium	25	24.1	96	(85-115)
Silicon	2500	2260	91	(85-115)
Silver	5	4.95	99	(85-115)
Sodium	5000	4550	91	(85-115)
Thallium	2.5	2.48	99	(85-115)
Tin	12.5	12.3	99	(85-115)
Vanadium	25	23.7	95	(85-115)
Zinc	50	52.4	105	(85-115)

# **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Prep Batch: MXX30212 Prep Method: E200.2 Prep Date/Time: 09/21/2016 07:23 Spike Init Wt./Vol.: 50 ug/L Extract Vol: 10 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/15/2016 10:39:11AM

SGS North America Inc.



## Matrix Spike Summary

Original Sample ID: 1353299 MS Sample ID: 1353300 MS MSD Sample ID: 1353301 MSD Analysis Date: 09/22/2016 15:03 Analysis Date: 09/22/2016 15:06 Analysis Date: 09/22/2016 15:09 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165550006, 1165550007, 1165550008, 1165550009, 1165550010, 1165550011, 1165550019, 1165550020, 1165550021, 1165550022

Results by 200.8 Low Level			_							
·		Ma	trix Spike (	ug/L)	Spike	e Duplicate	e (ug/L)			
<u>Parameter</u> Aluminum	<u>Sample</u> 2160	<u>Spike</u> 50.0	<u>Result</u> 2250	<u>Rec (%)</u> 168 *	<u>Spike</u> 50.0	<u>Result</u> 2370	<u>Rec (%)</u> 426 *	<u>CL</u> 70-130	<u>RPD (%)</u> 5.60	<u>RPD CL</u> (< 20 )
Antimony	0.111	5.00	5.07	99	5.00	5.20	102	70-130	2.40	(< 20)
Arsenic	8.83	25.0	32	93	25.0	33.1	97	70-130	3.50	(< 20)
Barium	21.2	25.0	56	139 *	25.0	56.0	139 *	70-130	0.02	(< 20)
Beryllium	0.0332J	12.5	11.6	93	12.5	11.7	93	70-130	0.80	(< 20)
Bismuth	0.0169J	12.5	11.6	93	12.5	11.6	92	70-130	0.27	(< 20)
Boron	12.6	50.0	59.2	93	50.0	58.7	92	70-130	0.99	(< 20)
Cadmium	0.0683	12.5	12	96	12.5	12.5	100	70-130	4.00	(< 20)
Calcium	19500	5000	23700	84	5000	23600	82	70-130	0.45	(< 20)
Chromium	4.07	12.5	17.6	108	12.5	18.1	112	70-130	2.70	(< 20)
Cobalt	0.957	12.5	12.9	95	12.5	13.7	102	70-130	6.40	(< 20)
Copper	3.26	25.0	26	91	25.0	27.3	96	70-130	4.90	(< 20)
Iron	2560	500	3190	126	500	3240	135 *	70-130	1.40	(< 20)
Lead	0.937	5.00	5.76	97	5.00	5.78	97	70-130	0.29	(< 20)
Magnesium	5290	5000	9920	93	5000	10000	95	70-130	0.97	(< 20)
Manganese	136	50.0	183	95	50.0	191	111	70-130	4.40	(< 20)
Molybdenum	0.529	12.5	12.7	98	12.5	13.3	102	70-130	3.90	(< 20)
Nickel	3.53	12.5	15.6	97	12.5	16.3	102	70-130	4.40	(< 20)
Potassium	2820	5000	7960	103	5000	7760	99	70-130	2.50	(< 20)
Selenium	0.500U	25.0	21.5	86	25.0	22.2	89	70-130	2.80	(< 20)
Silver	0.0100U	5.00	4.66	93	5.00	4.90	98	70-130	5.20	(< 20)
Sodium	5050	5000	9980	99	5000	10100	101	70-130	1.10	(< 20)
Thallium	0.00840J	2.50	2.42	97	2.50	2.46	98	70-130	1.40	(< 20)
Tin	0.156J	12.5	11.3	89	12.5	11.2	89	70-130	0.19	(< 20)
Vanadium	4.19	25.0	28.2	96	25.0	30.4	105	70-130	7.30	(< 20)
Zinc	47.5	50.0	90.9	87	50.0	92.7	90	70-130	1.90	(< 20)

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Analytical Date/Time: 9/22/2016 3:06:11PM

Prep Batch: MXX30212 Prep Method: LL Digest for Metals on ICP-MS Prep Date/Time: 9/21/2016 7:23:38AM Prep Initial Wt./Vol.: 50.00mL Prep Extract Vol: 10.00mL

Print Date: 10/15/2016 10:39:13AM

SGS North America Inc.



## Bench Spike Summary

Original Sample ID: 1353299 MS Sample ID: 1353302 BND MSD Sample ID: Analysis Date: 09/22/2016 15:03 Analysis Date: 09/22/2016 15:11 Analysis Date: Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165550006, 1165550007, 1165550008, 1165550009, 1165550010, 1165550011, 1165550019, 1165550020, 1165550021, 1165550022

Results by 200 8 Low Lev	ما									
		Ма	trix Spike (	ua/L)	Spike	e Duplicate	e (ua/L)			
<u>Parameter</u> Aluminum Barium Iron	<u>Sample</u> 2160 21.2 2560	<u>Spike</u> 500 25.0 500	<u>Result</u> 2610 47.1 3100	Rec (%) 90 104 108	<u>Spike</u>	<u>Result</u>	<u>Rec (%)</u>	<u>CL</u> 70-130 70-130 70-130	<u>RPD (%)</u>	<u>RPD CL</u>
Batch Information Analytical Batch: MMS954 Analytical Method: 200.8 I Instrument: Perkin Elmer I Analyst: VDL Analytical Date/Time: 9/22	14 Low Level Nexlon P5 2/2016 3:11:58	PM		Prep Prep Prep Prep Prep	Batch: N Method: Date/Tim Initial Wt Extract V	//XX30212 LL Digest ne: 9/21/20 ./Vol.: 50. /ol: 10.000	: for Metals 016 7:23:3 00mL mL	on ICP-MS 8AM	5	

Print Date: 10/15/2016 10:39:13AM

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289] Matrix: Water (Surface, Eff., Ground) 35550004, 1165550005, 1165550006, 1165550007, 1165550008, 1165550009, 35550014, 1165550015, 1165550016, 1165550017, 1165550018, 1165550019,
289] Matrix: Water (Surface, Eff., Ground) 55550004, 1165550005, 1165550006, 1165550007, 1165550008, 1165550009, 55550014, 1165550015, 1165550016, 1165550017, 1165550018, 1165550019,
55550004, 1165550005, 1165550006, 1165550007, 1165550008, 1165550009, 55550014, 1165550015, 1165550016, 1165550017, 1165550018, 1165550019,
<u>LOQ/CL</u> <u>DL</u> <u>Units</u> 1.00 0.500 ng/L
Prep Batch: MXX30289 Prep Method: METHOD Prep Date/Time: 10/12/2016 4:45:00PM Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 50 mL
30

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Method Blank						
Blank ID: MB for HBN Blank Lab ID: 1359148	1745746 [MXX/30289] 3	Matrix: Water (Surface, Eff., Ground)				
QC for Samples: 1165550001, 116555000 1165550010, 116555001 1165550020, 116555002	2, 1165550003, 1165550004, 1165 1, 1165550012, 1165550014, 1165 1	550005, 1165550006 5550015, 1165550016	\$, 1165550007, 1 \$, 1165550017, 1	165550008, 1165550009, 165550018, 1165550019,		
Results by EPA 1631 E						
Parameter	<u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L		
Mercury						
Mercury atch Information						

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Method Blank						
Blank ID: MB for HBI Blank Lab ID: 13591	N 1745746 [MXX/30289] 52	Matrix: Water (Surface, Eff., Ground)				
1165550001, 1165550 1165550010, 1165550 1165550020, 1165550	002, 1165550003, 1165550004, 1165 011, 1165550012, 1165550014, 1165 021	550005, 1165550006 550015, 1165550016	6, 1165550007, 1 6, 1165550017, 1	165550008, 1165550009 165550018, 1165550019	), ),	
Results by <b>FPA 163</b>	1 E					
Results by <b>EPA 163</b> ′ Parameter	1 E Results	LOQ/CL	DL	Units		
Results by <b>EPA 163</b> <u>Parameter</u> Mercury	1 E <u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L		
Results by EPA 163 [°] Parameter Mercury atch Information	1 E Results 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L		
Results by EPA 163 Parameter Mercury atch Information Analytical Batch: M Analytical Method: Instrument:	1 E <u>Results</u> 0.500U ICV5746 EPA 1631 E	LOQ/CL 1.00 Prep Ba Prep Me Prep Da	DL 0.500 tch: MXX30289 ethod: METHOD ate/Time: 10/12/2	<u>Units</u> ng/L 2016 4:45:00PM		

Method Blank					
Blank ID: MB for HB Blank Lab ID: 13591	N 1745746 [MXX/30289] 53	Matri	x: Water (Surfa	ce, Eff., Ground)	
2C for Samples: 165550001, 1165550 165550010, 1165550 165550020, 1165550	002, 1165550003, 1165550004, 116 011, 1165550012, 1165550014, 116 021	5550005, 1165550006 55550015, 1165550016	6, 1165550007, 1 6, 1165550017, 1	165550008, 1165550009 165550018, 1165550019	), ),
Desults by EDA 400	1 🖬				
Results by EPA 163					
Parameter Mercury	Results 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	
Aesults by EPA 163	Results 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L	

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Method Blank						
Blank ID: MB for HBN 1745746 [MXX/30289] Blank Lab ID: 1359157		Matrix: Water (Surface, Eff., Ground)				
QC for Samples: 1165550001, 11655500 1165550010, 11655500 1165550020, 11655500	02, 1165550003, 1165550004, 11655 11, 1165550012, 1165550014, 11655 21	50005, 1165550006 50015, 1165550016	6, 1165550007, 1 6, 1165550017, 1	165550008, 1165550009, 165550018, 1165550019,		
Results by EPA 1631	E					
<u>Parameter</u> Mercury	<u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L		
Parameter Mercury atch Information	<u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.500	<u>Units</u> ng/L		

GS				Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
lank Spike ID: LCS for HBN 1 lank Spike Lab ID: 1359145 ate Analyzed: 10/13/2016 1	165550   7:36	[MXX3028	9]	
·				Matrix: Water (Surface, Eff., Ground)
C for Samples: 116555000 116555000 116555001	1, 116555 8, 116555 6, 116555	50002, 116 50009, 116 50017, 116	5550003, 11655 5550010, 11655 5550018, 11655	50004, 1165550005, 1165550006, 1165550007, 50011, 1165550012, 1165550014, 1165550015, 50019, 1165550020, 1165550021
Results by EPA 1631 E				
		Blank Spik	e (ng/L)	
arameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>
ercury	25	24.9	100	(77-123)
atch Information				
Analytical Batch: MCV5746				Pren Batch: MXX30289
Analytical Method: EPA 1631 E				Prep Method: <b>METHOD</b>
Instrument:				Prep Date/Time: 10/12/2016 16:45
Analyst: NEG				Spike Init Wt./Vol.: 25 ng/L Extract Vol: 50 mL



Matrix Spike Su	nmary									
Original Sample	ID: 1165550010			Analysis	Date: 10	)/13/2016	18:34			
MS Sample ID:	1359149 MS			Analysis	Date: 10	)/13/2016	18:39			
MSD Sample ID:	1359150 MSD				Analysis	Date: 10	)/13/2016	18:43		
					Matrix:	Water (Su	urface, Eff.	, Ground)	1	
QC for Samples:	1165550001, 1165550 1165550008, 1165550 1165550016, 1165550	002, 116555 009, 116555 017, 116555	0003, 116 0010, 116 0018, 116	5550004, 11 5550011, 11 5550019, 11	65550008 65550012 65550020	5, 1165550 2, 1165550 0, 1165550	0006, 11655 0014, 11655 0021	50007, 50015,		
Results by EPA	1631 E				00000020	. 1100000	021			
-		Mat	rix Spike	(ng/L)	Spik	e Duplicate	e (ng/L)			
Parameter	Sample	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Mercury	0.500U	25.0	24.2	97	25.0	23.5	94	71-125	2.80	(< 24 )
Batch Information	on									
Analytical Batch	: MCV5746			Prep	Batch: N	/XX30289				
Analytical Method: EPA 1631 E				Prep Method: Digestion Low Level Mercury (W)						
Instrument:				Prep Date/Time: 10/12/2016 4:45:00PM						
Analyst: NEG				Prep	Initial Wt	t./Vol.: 50.	00mL			
Analytical Date/	Time: 10/13/2016 6:39:	14PM		Prep	Extract \	/ol: 50.00	mL			

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Sampling and Testing Report - Event 2
USAL-FG-GRZZZ-00-002016-004 Rev. 0
16-Dec-16

SGS			Sa USA	ampling and Testing Report L-FG-GRZZZ-00-002016-0 1	- Event 2 04 Rev. 0 6-Dec-16	
- Method Blank						
Blank ID: MB for HBN 1745746 [MXX/302608 Blank 9a]  ID: 13561L1		Masr,t∶i aspr xCW/fa(pucff⊞u.roWn/Gd				
b Q for CaS mpe: 11L5550022						
) peWse]R <b>EPA 163</b> 1	E					
<u>OaraSpspr</u> Mpr(WR	<u>) peWse</u> 0E500y	<u>9Ub /Q9</u> 1⊞0	<u>D9</u> 0臣00	<u>y n.se</u> nP/9		
3atch Information	]					
gnalRs(al Bas(A: M gnalRs(al MpsAoG InesWS pns gnalRes Nc. gnalRs(al Dasp/V,S	 Qh 5747 c Og 1L31 c p: 10/13/201L 7:56:56ОМ	OrpmBas(A: MXX30260 OrpmMpsAoG McVHUD OrpmDasp/V,Sp: 10/12/201L OrpmIn,sal i sEholE 50 S9 Orpmctsra(shol: 50 S9		0 D /201L 4:45:00OM 0 S 9 9		

Or,nsDasp: 10/15/201L 10:36:24gM

C. C NorsAgSpr,(a In(E

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LNG Facilities Groundwater Quality
Sampling and Testing Report - Event 2
USAL-FG-GRZZZ-00-002016-004 Rev. 0
16-Dec-16

<b>GS</b>	-		Samplin USAL-FG-	g and resung Report - Event 2 GRZZZ-00-002016-004 Rev. 0 16-Dec-16		
Method Blank						
Blank ID: MB for HBl Blank 9a]  ID: 13561	N 1745746 [MXX/302608 L2	Masr,t:i aspr xCW/fa(pucffE).roWn/Gd				
b Q for CaS mpe: 11L5550022						
)peWse]R <b>EPA163</b> ^	1 E					
<u>OaraSpspr</u> Mpr(W/R	<u>) peWke</u> 05500y	<u>9Ub/Q9</u> 1⊞0	<u>D9</u> 05500	<u>y n,se</u> nP/9		
atch Information	]					
gnalRs(al Bas(A: M gnalRs(al MpsAoG InesrV&pns gnalRes Nc. gnalRs(al Dasp/V,S	 c Og 1L31 c p: 10/13/201L К:35:57ОМ	OrpmBas OrpmMps OrpmDas OrpmIn,s Orpmct s	(A: MXX30260 A∧oG McVHUD p/V,Sp: 10/12/201L ali se∄nolE 50S9 ra(shol: 50S9	4:45:00OM		

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LNG Facilities Groundwater Quality
Sampling and Testing Report - Event 2
USAL-FG-GRZZZ-00-002016-004 Rev. (
16-Dec-16

Method Blank		1			
Blank ID: MB for HBN Blank 9a] ID: 13561Ll	1745746 [MXX/302608 L	Mas,t	: I aspr xCW/fa(	puctitu.rovvnGd	
b Q for CaS mpe:					
11L5550022					
		1			
) peWse ] REPA 1631	E				
<u>OaraSpspr</u> Mor(WR	) peWse OF500v	<u>9Ub/Q9</u> 1E00	<u>D9</u> 0500	<u>y n,se</u> nP/9	
	obooy		0E00	1170	
Batch Information					
gnalRs(al Bas(A: MC	2 1 31 c	OrpmBas	(A: MXX30260		
InesW6 pns	Og TEST C	OrpmDas	sp/V,Sp: 10/12/20	01L 4:45:00OM	
gnalRes Nc. gnalRs(al Dasp/V,Sp:	10/13/201L 6:07:26OM	OrpmIn,s Orpmcts	;ali s⊞holE 50 S sra(shol: 50 S 9	9	
			·		
Or,nsDasp: 10/15/201L 10:36:	24g M				

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USAL-FG-GRZZ	Z-00-002016-004 Rev. 0
	16-Dec-16

GS			Samplin USAL-FG-	g and Testing Report - Event 2 GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Method Blank				
Blank ID: MB for HBN Blank 9a] ID: 13561I	\ 1745746 [MXX/302608 _7	Mas,t	∶i aspr xCW/fa(puc	ffÆi. roWhGd
b Q for CaS mpe: 11L5550022				
)peWkse]R <b>EPA 1631</b>	E			
<u>OaraSpspr</u> Mpr(W/R	<u>) peWke</u> 0E500y	<u>9Ub /Q9</u> 1⊞0	<u>D9</u> 0西00	<u>y n,se</u> nP/9
atch Information	)			
gnalRs(al Bas(A: M gnalRs(al MpsAoG InesWSpns gnalRes Nc. gnalRs(al Dasp/V,Sp	Qh 5747 c Og 1L31 c p: 10/13/201L 6:30:02OM	OrpmBas OrpmMp OrpmDas OrpmIn,s Orpmcts	s(A: MXX30260 sAoG McVHUD sp/V,Sp: 10/12/201L gali sEnholE 50S9 sra(shol: 50S9	4:45:00OM

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LNG Facilities Groundwater Quality
Sampling and Testing Report - Event 2
USAL-FG-GRZZZ-00-002016-004 Rev. (
16-Dec-16

GS	_		Samplin USAL-FG-	g and Testing Report - Event 2 GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Method Blank				
Blank ID: MB for HE Blank 9a]  ID: 1356	BN 1745746 [MXX/302608 1L6	Mas,t	:iasprxCW/fa(puo	ffÆi. roWnGd
b Q for CaS mpe: 11L5550022				
)peWke]R <b>EPA16</b> 3	31 E			
<u>OaraSpspr</u> Mpr(WR	<u>)</u> peV <b>lke</b> 0⊞00y	<u>9Ub/Q9</u> 11£00	<u>D9</u> 0西00	<u>y n.se</u> nP/9
atch Information				
gnalRs(al Bas(A: l gnalRs(al MpsAoG InesrWSpns gnalRes Nc. gnalRs(al Dasp/V,S	MQh5747 c Og 1L31 c Sp: 10/13/201L 10:15:1LOM	OrpmBa OrpmMp OrpmDa OrpmIn,s Orpmcts	s(A: MXX30260 sAoG McVHUD sp/V,Sp: 10/12/201L sali s£2holE 50S9 sra(shol: 50S9	4:45:00OM

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Blank Spike Summary					
Blank Spike ID: LCS for HBN Blank Spike La] ID: 1358158 Dabe 4 nalt Aey: 10z13z2016	1165550 [N 1d:36	WXX3028	09	Mabris: u aber xSRrfaWe(cff.(EroRnv.	
%C for Sa) ple7: 11655500	)22				
/e7Rb7]t EPA 1631 E					
	E	Blank Spike	exnmzŁ.		
<u>Gara) eber</u> MerV <b>P</b> rt	<u>Spike</u> 25	<u>/ e7Rb</u> 2Q8	<u>/ eWxP.</u> 100	<u>CL</u> xddg123.	
Batch Information					
4 nalt biVal BabV: MCV5747 4 nalt biVal Meb oy: EPA 1631 In7bR) enb 4 nalt 7b NEG	E			Grep BabW: <b>MXX30290</b> Grep Meboy: <b>METHOD</b> Grep Dabezhi) e: <b>10/12/2016 16:45</b> Spike Inibu bzTol,: 25 nm2L csbraVb/Tol: 50) L DRpe Inibu bzTol,: csbraVb/Tol:	
nhDate: 10752016 10·38·2ህ//M					
SES Norb 4) eriVá l	nVV 200 t 800	u e7bGobbe d,562,23Q8	er Drive 4 nWo 5 f 80d,561,530	rame(4K 8551V 11 www,R7,7m7,W0)	

SGS						Sa USA	LNG Facil ampling and L-FG-GRZZ	ties Groun Testing Re Z-00-0020	Confiden dwater Qua eport - Even 16-004 Rev 16-Dec-	tial lity t 2 2.0 16
- Matrix Spike Summary										
Original Sample ID: 1165672004 MS Sample ID: 1359163 MS MSD Sample ID: 1359164 MSD QC for Samples: 1165550022				Analysis Date: 10/13/2016 20:49 Analysis Date: 10/13/2016 20:53 Analysis Date: 10/13/2016 20:58 Matrix: Water (Surface, Eff., Ground)						
Results by EPA 1631 E										
		Ма	trix Spike (	ng/L)	Spike	e Duplicat	e (ng/L)			
<u>Parameter</u> Mercury	<u>Sample</u> 0.704J	<u>Spike</u> 25.0	<u>Result</u> 25.8	<u>Rec (%)</u> 100	<u>Spike</u> 25.0	<u>Result</u> 25.0	<u>Rec (%)</u> 97	<u>CL</u> 71-125	<u>RPD (%)</u> 3.10	<u>RPD CL</u> (< 24 )
Analytical Method: EPA Instrument: Analyst: NEG Analytical Date/Time: 10	1631 E I/13/2016 8:53:5	8PM		Prep Prep Prep Prep	) Method: ) Date/Tim ) Initial Wt ) Extract V	Digestion ne: 10/12/ ./Vol.: 50. 'ol: 50.00	I Low Level 2016 4:45 .00mL mL	Mercury (V :00PM	V)	

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Method Blank	Method Blank				
Blank ID: MB for HBN 174 Blank Lab ID: 1352482	Blank ID: MB for HBN 1743253 [STS/5211] Blank Lab ID: 1352482		: Water (Sur	face, Eff., Ground)	
QC for Samples: 1165550006, 1165550007, 1	165550008, 1165550009				
Results by <b>SM21 2540C</b>					
<u>Parameter</u> Total Dissolved Solids	<u>Results</u> 5.00U	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	
Batch Information Analytical Batch: STS52 Analytical Method: SM21 Instrument: Analyst: KBE Analytical Date/Time: 9/2	11 2540C 21/2016 6:31:25PM				

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<b>SGS</b>			US	Sampling and Testing AL-FG-GRZZZ-00-00	g Report - Event 2 02016-004 Rev. 0 16-Dec-16
Duplicate Sample Summar Original Sample ID: 116555 Duplicate Sample ID: 13536 QC for Samples: 1165550006, 1165550007,	<b>y</b> 50009 505 1165550008, 11655	550009	Analysis Date: Matrix: Water (	09/21/2016 18:31 Surface, Eff., Grou	nd)
Results by SM21 2540C					
NAME Total Dissolved Solids	<u>Original</u> 140	<u>Duplicate</u> 139	<u>Units</u> ma/L	<u>RPD (%)</u> 0.72	<u>RPD CL</u> (< 5)
Batch Information Analytical Batch: STS5211 Analytical Method: SM21 25 Instrument: Analyst: KBE	40C				

SGS			US	Sampling and Testing AL-FG-GRZZZ-00-00	Report - Event 2 02016-004 Rev. 0 16-Dec-16
Duplicate Sample Summar Original Sample ID: 116554 Duplicate Sample ID: 1353 QC for Samples: 1165550006, 1165550007,	<b>y</b> 46001 884 1165550008, 1165	550009	Analysis Date: Matrix: Water (	09/21/2016 18:31 Surface, Eff., Groui	nd)
Results by SM21 2540C	<u>Original</u>	Duplicate	Units	<u>RPD (%)</u>	RPD CL
Total Dissolved Solids Batch Information Analytical Batch: STS5211 Analytical Method: SM21 25 Instrument: Analyst: KBE	808 40C	803	mg/L	0.62	(< 5 )



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1165550 [STS5211] Blank Spike Lab ID: 1352483 Date Analyzed: 09/21/2016 18:31 Spike Duplicate ID: LCSD for HBN 1165550 [STS5211] Spike Duplicate Lab ID: 1352484 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165550006, 1165550007, 1165550008, 1165550009

Results by SM21 2540C									
		Blank Spike	e (mg/L)	5	Spike Dupli	cate (mg/L)			
Parameter	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Total Dissolved Solids	330	331	100	330	345	105	(75-125)	4.10	(< 5)
Batch Information Analytical Batch: STS5211 Analytical Method: SM21 25400 Instrument: Analyst: KBE	;			Pre Pre Pre Spil Dup	p Batch: p Method: p Date/Tim ke Init Wt./\ pe Init Wt./\	e: /ol.: 330 mg /ol.: 330 mg	J/L Extract V	'ol: 100 mL bl: 100 mL	

Print Date: 10/15/2016 10:39:33AM

- Method Blank	<b>Method Blank</b> Blank ID: MB for HBN 1743442 <b>5</b> S[ <b>7</b> ] 1/ L Blank ba8 ID: 13/ 33QQ				
Blank ID: MB for HBN 174 Blank ba8 ID: 13/ 33QQ			Matrix: Watsr ([ urfacs, Eff., Ground)		
Cm for[ap els6: 112/ / / 0002, 112/ / / 0007, 1 ⁻	12/ / / 000Q 112/ / / 0009				
Rs6ult6 8y SM21 2540D					
<u>Parap stsr</u> Sotal [ u6esndsd [ olid6	<u>Rs6ult6</u> 0./ 00U	<u>bOCTmb</u> 1.00	<u>Db</u> 0.310	<u>Unit6</u> pv1b	
Batch Information					
gnalytical BatcA: [S[ / ] 1 gnalytical MstAod: [M] 1 In6trup snt: gnaly6t: bbP gnalytical DatsTSip s: 9T	/ ]/40D 1丁012 1]:00:1]PM				

Print Dats: 1017/ ] 012 10:39:32g M

[G[NortAgp srica Inc.



I							
- Duplicate Sample Summary	/						
Original Sample ID: 116555 Duplicate Sample ID: 13535		s nal/ 2i2 Date: 981/y11/y916 1y:99 x atriW ( ater fSur,aceE ,,Œo rdun) R					
CP ,dr Sample2:							
1165559996E1165559994E1	165559990E1165	559998					
be2ult2 Q SM21 2540D							
<u>Usx.</u>	Original	Duplicate	Lnit2	<u>b %D fN R</u>	<u>b%DP7</u>		
Tdtal Su2pen) e) Sdli) 2	16y	161	mg⊠	9 <b>G</b> y	fv 5 R		
Batch Information							
s nal/ tical <atcb: sts5y15<br="">s nal/ tical x etBd): Sx y1 y5/ In2trument: s nal/ 2t: 77%</atcb:>	49D						

%rint Date: 19M15M916 19:38:34sx

So S UdrtB s merica IncG

y99 ( e2t %dtter Drihe s ncBdrageEs K 85510 t 894(56)(9)3A3 f 894(561(5391) www.02(2)g2(9)dm

Duplicate Sample Summary					
Original Sample ID: 11655149 Duplicate Sample ID: 13535A CP ,dr Sample2:	99y 3		s nal/ 2i2 Date: x atriW(ater f	981¥11¥9916 1y:99 Sur,aceE. ,,Œordu	ו) R
1165559996E1165559994E11	65559990E1165	559998			
be2ult2 Q SM21 2540D					
Usx.	Original	Duplicate	Lnit2	<u>b %D fN R</u>	<u>b%DP7</u>
Tdtal Su2pen) e) Sdli) 2	y3 <b>G</b>	y3 <b>9</b>	mgM	уФЭ	fv 5 R
Batch Information					
s nal/ tical <atcb: sts5y15<br="">s nal/ tical x etBd) : Sx y1 y5A9 In2trument: s nal/ 2t: 77%</atcb:>	D				

%rint Date: 19M15M916 19:38:34sx

So S UdrtB s merica IncG



## Blank Spike Summary

Blank Spike ID: LCS for HBN 1165550 [STS5215] Blank Spike Lab ID: 1353348 Date Analyzed: 0892192016 12:00 Spike D/ pliuate ID: LCSD for HBN 1165550 [STS5215] Spike D/ pliuate Lab ID: 1353380 s atriM x ater \\$/ ffaue(, fftf. ro/ ndG

g C for SaP pleR 1165550006( 116555000Q( 1165550004( 1165550008

c eR′ ltRby <b>SM21 2540D</b>									
		Blank Spike	eW79%9LG	5	Spike D/ pliu	uate ₩ %9LG			
<u>) araP eter</u>	<u>Spike</u>	<u>c eR∕ It</u>	<u>ceuWh</u> G	<u>Spike</u>	<u>c eR/ It</u>	<u>ceuWh</u> G	<u>CL</u>	<u>c)DWm</u> G	<u>c) D CL</u>
Total S/ Rpended SolidR	50	- 86	88	50	50Ð	100	WQ57125 G	0昼0	₩ 5 G
Batch Information									
Analytiual Batu<: <b>STS5215</b> Analytiual s et <od: <b="">SM21 2540D InRtr/ P ent: AnalyRt: <b>LLP</b></od:>				) re ) re ) re Spil D/ p	o Batu<: o s et <od: o Date9TiP ke Init x tBr oe Init x tBr</od: 	e: nolE 50 P%91 nolE 50 P%91	. , Mraut ho , Mraut hol:	I: 1000 PL 1000 PL	

) rint Date: 1091592016 10:38:38As

#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Method Blank						
Blank ID: MB for HBN 174394 Blank Lab ID: 1354265	40 [VXX/29626]	Ν	Aatrix: V	Vater (Surface	e, Eff., Ground)	
QC for Samples: 1165550007, 1165550008, 1165	550009, 1165550013					
Results by AK101						
Parameter Gasoline Range Organics	<u>Results</u> 0.0500U	<u>LOQ/C</u> 0.100	<u>L</u>	<u>DL</u> 0.0310	<u>Units</u> mg/L	,
Surrogates 4-Bromofluorobenzene (surr)	83.8	50-150			%	
Batch Information						
Analytical Batch: VFC13323 Analytical Method: AK101 Instrument: Agilent 7890 PID Analyst: ST Analytical Date/Time: 9/24/20	/FID 016 11:08:00AM	Pre Pre Pre Pre	ep Batch ep Metho ep Date/ ep Initial ep Extrac	: VXX29626 od: SW5030B Fime: 9/24/201 Wt./Vol.: 5 mL ot Vol: 5 mL	6 6:00:00AM	

Print Date: 10/15/2016 10:39:46AM

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## **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165550 [VXX29626] Blank Spike Lab ID: 1354266 Date Analyzed: 09/24/2016 11:51 Spike Duplicate ID: LCSD for HBN 1165550 [VXX29626] Spike Duplicate Lab ID: 1354267 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165550007, 1165550008, 1165550009, 1165550013

Results by AK101									
	I	Blank Spike	e (mg/L)	S	pike Duplic	cate (mg/L)			
Parameter	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Gasoline Range Organics	1.00	0.946	95	1.00	0.920	92	(60-120)	2.70	(< 20)
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	90.9	91	0.0500	91.1	91	(50-150)	0.20	
Batch Information									
Analytical Batch: VFC13323 Analytical Method: AK101				Pre Pre	Batch: V Method:	XX29626 SW5030B			
Instrument: Agilent 7890 PID	/FID			Pre	Date/Tim	e: 09/24/201	6 06:00		
Analyst: ST				Spik Dup	e Init Wt./\ e Init Wt./\	/ol.: 1.00 mg /ol.: 1.00 mg	g/L Extract \ g/L Extract V	√ol: 5 mL ol: 5 mL	

Print Date: 10/15/2016 10:39:48AM

#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Method Blank		<u>]</u>			
Blank ID: MB for HBN 17441 Blank 6a] ID: 1Lb4/ 77	34 90[[WK/3432	Ma,r&	:ia,prxCW/fa(	pucffEu.roWnGd	
5 Q for CaS mpe: 113bbbsss3					
) peW,e ] R <b>AK101</b>					
<u>OaraSp.pr</u> .aeol&p)anPpUrPan&e	<u>) peW,e</u> sEsbssy	<u>6U5\Q6</u> s⊟ss	<u>D6</u> sEsL1s	<u>y n8e</u> S P\6	
Surrogates 4gBroS oflWoro] pn- pnp xeWrd	%⊾⊞	bsglbs		Z	
Batch Information					
AnalR&al Ba,(h: 0FQ1LLX/ AnalR&al Mp,hoG AK1s1 Ine,rWSpn,: AP&pn, 7% s OIE AnalR&al Da,pVT&Sp: / W7W	N∕FID s13 11:L4:ssOM	OrpmBa, OrpmMp OrpmDa OrpmIn8 Orpmct,	(h:0[[X/343 ,hoG CibsLsB ,p√T&Sp:/\X7W/s &ali,E00olEbS6 ra(,0ol:bS6	13 3:ss:ssAM 5	

Or&n, Da,p: 1sVIbVKs13 1s:L/:bsAM

C. C Nor,h AS pr&a In(E



## **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165550 [VXX296] 6b Blank Spike La3 ID: 145] 9t 0 Da& y nalzde/: 09t2ct2016 22:5c Spike D7pliRa& ID: LCSD for HBN 1165550 [VXX296] 6b Spike D7pliRa& La3 ID: 145] 9t 1 x aAiW ( aAer ,S7rfaReE. ffŒ) ro7n/ P

8 C for Sa%pleM 1165550006

seM7IAM3zAK101 Blank Spike ,%QLP Spike D7pliRaAe ,%QLP mara%eAer <u>Spike</u> s eM/IA <u>s eR,g P</u> <u>Spike</u> <u>s eR,g P</u>  $\underline{CL}$ s mD CL s eM/IA <u>smD,gP</u> , 60-120 P t**G**0 1@0 0962 1**@**0 ) aMoline s anQe OrQaniRM 96 0@t] t t ,< 20 P Surrogates ]-Bro%ofl7oro3endene,M7rrP 00500 92@ 0@500 tt 🖨 , 50-150 P ] GO 94 t t **Batch Information** y nalzARal BaARh: VFC13327 mrep BaARh: VXX276V6 y nalzARal x eAno/: AK101 mrep x eAno/: S5 4030B InMA7%enA Agilent 8970 PID/FID mrep DaAeuTi%e: 07/28/2016 06:00 y nalzMA ST Spike IniA(AD/oIG 1000 %QL . Waka RAVol: 5 %L D7pe IniA( AD/oIG 1000 %QL . Waka RAVol: 5 %L

mrinADaAe: 10ul5u2016 10:49:5] y x

S) S NorAn y %eriRa InRG

#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Nothod Blank						
Blank ID: MB for HBN Blank Lab ID: 1383/ 1.	1743371 25 [STI/74/] /		MairxW	5 aisr (murfacs, l	Eff., Ground)	
110888///0, 110888///	7, 110888///9, 110888///t					
Parap sisr Surbxlxy	<u>Rs6uli6</u> / .1// U	<u>LOQ</u> / .v/	<u>TCL</u> /	<u>DL</u> / .1//	<u>Unxi6</u> NSU	
Batch Information [ nalyixal Baicg: 5 [ [ nalyixal Msigod: m In6irup sni: Surbxdxp [ naly6i: ABE [ nalyixal DaisTSxp s:	S1/74/ Mv1 v13/B sisr : t7ltTv/10 8://://PM					

_

# **Duplicate Sample Summary** Original Sample ID: 1165550006 3nalAyiy Dace: 0s/1s/2016 18:00 D9pliuace Sample ID: 1t 5t 015 Magix: Wager (S9rfaue, Eff., Gro9nd) QC for Sampley: 1165550006, 1165550008, 1165550007, 116555000s Rey9loy bA SM21 2130B D9pliuaœ RPD (%) RPD CL Original Unicy N3ME 49rbidicA s.00 7.s0 N4U 1.10 (T 20) **Batch Information** 3 nalAdual v acu<: W34108B0 3 nalAdual Mec≤od: SM21 21t 0v Inya9menc 49rbidimeær 3nalAyc hvE

PrincDaœ: 10/15/2016 10:t s:583 M

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SG

<b>SGS</b>				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary	165550	[\//AT107/	.01	
Blank Spike Lab ID: 1353011	17:00	[VVA11074	.0]	
Jale Analyzeu. 09/19/2010	17.00			Matrix: Water (Surface, Eff., Ground)
QC for Samples: 116555000	06, 116555	50007, 1165	5550008, 1165	550009
Results by SM21 2130B				
		Blank Spike	e (NTU)	
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>
urbidity	10	11.0	110	(90-110)
Batch Information				
Analytical Batch: WAT10740				Prep Batch:
Analytical Method: SM21 2130E Instrument: Turbidimeter	3			Prep Method: Prep Date/Time:
Analyst: KBE				Spike Init Wt./Vol.: 10 NTU Extract Vol: 1 mL
nt Date: 10/15/2016 10:39:59AM				

Blank Spike Summary Blank Spike ID: LCS for HBN Blank Spike Lab ID: 1353013 Date Analyzed: 09/19/2016 QC for Samples: 116555000 Results by SM21 2130B	1165550   17:00 06, 116555	[WAT1074 50007, 1168	0]	Matrix: Water (Surface, Eff., Ground) 550009
Date Analyzed:         09/19/2016           QC for Samples:         116555000           Results by SM21 2130B	17:00	50007, 1165	550008, 1165	Matrix: Water (Surface, Eff., Ground) 550009
QC for Samples: 116555000 Results by <b>SM21 2130B</b>	06, 116555	50007, 1165	550008, 1165	Matrix: Water (Surface, Eff., Ground) 550009
QC for Samples: 116555000 Results by <b>SM21 2130B</b>	06, 116555	50007, 1165	550008, 1165	550009
Results by SM21 2130B				
		Blank Spike	e (NTU)	
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>
urbidity	10	11.0	110	(90-110)
Batch Information				
Analytical Batch: WAT10740				Prep Batch:
Analytical Method: SM21 2130	3			Prep Method: Prep Date/Time:
Analyst: KBE				Spike Init Wt./Vol.: 10 NTU Extract Vol: 1 mL
				Dupe Init Wt./Vol.: Extract Vol:
nt Data: 10/1E/0046 40-20-50484				
ni date: 10/15/2016 10:39:59AM	1.000		or Drive Aret	roso AK 05519
SGS North America In	c. <u>t</u> 90	07.562.2343	er Drive Ancho <b>f</b> 907.561.530	rage, Ar. 90018 )1 www.us.sgs.com

Method Blank		<u> </u>				
Blank ID: MB for HBN 17 Blank Lab ID: 1353280	43422 [WFI/2501]		Matrix	: Water (Surfa	ce, Eff., Ground)	
QC for Samples: 1165550006, 1165550007						
Results by SM21 4500NC	)3-F	-				
Parameter	Results		LOQ/CL	DL	<u>Units</u>	
Nitrate-N	0.0500U		0.100	0.0300	mg/L	
Nitrite-N	0.0500U		0.100	0.0300	mg/L	
Total Nitrate/Nitrite-N	0.0522J		0.100	0.0300	mg/L	
Batch Information						
Analytical Batch: WFI25 Analytical Method: SM2 Instrument: Astoria segr Analyst: KBE Analytical Date/Time: 9/	01 1 4500NO3-F nented flow 19/2016 6:03:38PM					

Print Date: 10/15/2016 10:40:02AM

SGS



Method Blank		) <b></b>			
Blank ID: MB for HBN 174 Blank Lab ID: 1353288	43422 [WFI/2501]	Matri	x: Water (Surfa	ce, Eff., Ground)	
QC for Samples: 165550006, 1165550007					
Results by SM21 4500NC	)3-F	)(			
Parameter	Results	LOQ/CL	DL	<u>Units</u>	
Nitrate-N	0.0500U	0.100	0.0300	mg/L	
otal Nitrate/Nitrite-N	0.0500U	0.100	0.0300	mg/L	
atch Information					
Analytical Batch: WFI25 Analytical Method: SM2 Instrument: Astoria segn Analyst: KBE Analytical Date/Time: 9/	01 1 4500NO3-F nented flow 19/2016 7:03:08PM				

Print Date: 10/15/2016 10:40:02AM



## **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165550 [WFI2501] Blank Spike Lab ID: 1353278 Date Analyzed: 09/19/2016 18:01

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165550006, 1165550007

#### Results by SM21 4500NO3-F

		Blank Spik	e (mg/L)
Parameter	<u>Spi</u>	ke <u>Result</u>	<u>Rec (%)</u>
Nitrate-N	2.5	2.29	92
Nitrite-N	2.5	2.67	107
Total Nitrate/Nitrite-I	<b>N</b> 5	4.96	99

# **Batch Information**

Analytical Batch: WFI2501 Analytical Method: SM21 4500NO3-F Instrument: Astoria segmented flow Analyst: KBE Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 2.5 mg/L Extract Vol: 5 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/15/2016 10:40:05AM

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## **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165550 [WFI2501] Blank Spike Lab ID: 1353286 Date Analyzed: 09/19/2016 19:01

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165550006, 1165550007

## Results by SM21 4500NO3-F

	-		_
		Blank Spike	(mg/L)
Parameter	Spike	<u>Result</u>	<u>Rec (%)</u>
Nitrate-N	2.5	2.25	90
Nitrite-N	2.5	2.55	102
Total Nitrate/Nitrite-N	5	4.81	96

# **Batch Information**

Analytical Batch: WFI2501 Analytical Method: SM21 4500NO3-F Instrument: Astoria segmented flow Analyst: KBE Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 2.5 mg/L Extract Vol: 5 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/15/2016 10:40:05AM

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## Matrix Spike Summary

Original Sample ID: 1354174 MS Sample ID: 1353281 MS MSD Sample ID: 1353282 MSD

QC for Samples: 1165550006, 1165550007

Analysis Date: 09/19/2016 18:19 Analysis Date: 09/19/2016 18:21 Analysis Date: 09/19/2016 18:22 Matrix: Water (Surface, Eff., Ground)

		Ma	Matrix Spike (mg/L)			Spike Duplicate (mg/L)				
<u>Parameter</u> Total Nitrate/Nitrite-N	<u>Sample</u> 0.0500U	<u>Spike</u> 5.00	<u>Result</u> 4.43	<u>Rec (%)</u> 89 *	<u>Spike</u> 5.00	<u>Result</u> 4.56	<u>Rec (%)</u> 91	<u>CL</u> 90-110	<u>RPD (%)</u> 3.00	<u>RPD CL</u> (< 25 )
Batch Information Analytical Batch: WFI2501 Analytical Method: SM21 44 Instrument: Astoria segmen Analyst: KBE Analytical Date/Time: 9/19/2	500NO3-F nted flow 2016 6:21:08	PM		Pre Pre Pre Pre	o Batch: o Method: o Date/Tin o Initial W o Extract V	ne: t./Vol.: 5.0 Vol: 5.00m	i0mL ոL			

Print Date: 10/15/2016 10:40:05AM

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

_	- Method Blank		_					
	Blank ID: MB for HBN 1743779 (WFI/2503) Blank Lab ID: 1354146 QC for Samples: 1165550008, 1165550009		Matrix: Water (Surface, Eff., Ground)					
	Results by SM21 4500NO3-F		<u> </u>					
	Parameter Nitrate-N Nitrite-N Total Nitrate/Nitrite-N	<u>Results</u> 0.0500U 0.0500U 0.0500U	1	LOQ/CL 0.100 0.100 0.100	<u>DL</u> 0.0300 0.0300 0.0300	<u>Units</u> mg/L mg/L mg/L		
	Satch Information Analytical Batch: WFI2503 Analytical Method: SM21 450 Instrument: Astoria segmente Analyst: KBE Analytical Date/Time: 9/20/20	0NO3-F d flow 16 1:48:55PM						

Print Date: 10/15/2016 10:40:07AM

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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1165550 [WFI250] b Blank Spike La3 ID: 1] 57177 Da& t nalAyez: 0d92092016 1] :7/

Ma&ix: Wa&r (Surface, Eff., Grounz)

QC for Samples: 116555000- , 116555000d

## Resul& 3A SM21 4500NO3-F

## **Batch Information**

t nalA8cal Ba&h: WFI2503 t nalA8cal Me&hoz: SM21 4500NO3-F Ins&umen& Astoria segmented flow t nalAs& KBE Prep Ba&h: Prep Me&hoz: Prep Da&94ime: Spike Ini8W89/ol.: 2.5 mg9_ Ex&ac8Vol: 5 mL Dupe Ini8W89/ol.: Ex&ac8Vol:

Prin8Da&: 1091592016 10:70:0dt M

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## Matrix Spike Summary

Original Sample ID: 1135554447 MS Sample ID: 1258181 MS MSD Sample ID: 125818A MSD

L Q u Gr Samplet : 113555444/ c1135554447

y nals0f al Da0e9nime: 794494413 A:17:53CM

y nalst it Da0e: 479449413 18:1/ y nalst it Da0e: 47949413 18:17 y nalst it Da0e: 47949413 18:A1 Ma0ri6: x a0er VS (ruafec, uEc. rG nod

🛁 ) et ( l0t Rs SM21 45001	NO3-F											
		Ma0ri6 Spibe Whg9kd			Spibe D(plifa0e Wng9kd							
<u>Carame@r</u> %i0ra@T%	<u>Sample</u> 4⊡544N	<u>Spibe</u> AE54	<u>) et (l0</u> 1⊟7	<u>) ef</u> 8/	<u>₩</u> *	<u>Spibe</u> AE54	<u>) et (10</u> 1 EA8	<u>) ef 1</u> 54	<u>MP/d</u> *	<u>Qk</u> - 47124	<u>)CDWPd</u> 8⊞84	<u>) CD Qk</u> W A5 d
%i0ri0eT%	4월544N	AE54	154-	51	*	AE54	1 <i>E</i> A-	51	*	747114	4월5	₩ A5 d
Batch Information												
y nals0fal <aof b:="" fia<br="" x="">y nals0fal Me0BGo: SM Int0r(men0 yt0Griateg y nalst0 K&lt;</aof>	4542 A1 8544%O2TF gmen0eo ulGw				Crep Crep Crep	<a0fb: Me0BGo: Da0e9him</a0fb: 	10: 16: 16)/이트 5년	4mk				

Crep, 60raf 0VG: 5월4mk

Crin0Da0e: 1491594413 14:84:11y M

S. S %Gr0B y merif a Inf E

MemRer QuS. S. rQp

- Duplicate Sample S	ummary						
Original Sample ID: 1165487001 Duplicate Sample ID: 1354421 QC for Samples:			Analysis Date: 09/23/2016 13:07 Matrix: Drinking Water				
1165550006, 116555	50007, 1165550008, 11655	550009					
Results by SM21 450	00-Н В						
NAME	Original	Duplicate	Units	<u>RPD (%)</u>	RPD CL		
рН	7.40	7.40	pH units	0.00	(< 5)		
Batch Information	<u> </u>						
Analytical Batch: WT Analytical Method: S Instrument: Titration Analyst: KBE	l4513 SM21 4500-Н В						

Print Date: 10/15/2016 10:40:13AM

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Duplicate Sample Summ	ary							
Original Sample ID: 1165488001 Duplicate Sample ID: 1354422			Analysis Date: 09/23/2016 17:21 Matrix: Drinking Water					
QC for Samples:								
1165550006, 1165550007	7, 1165550008, 1165	550009						
,								
Results by SM21 4500-H I	B							
NAME	<u>Original</u>	Duplicate	Units	<u>RPD (%)</u>	RPD CL			
рН	7.20	7.10	pH units	1.40	(< 5)			
Batch Information								
Analytical Batch: WTI4513 Analytical Method: SM214 Instrument: Titration Analyst: KBE	4500-H B							

Print Date: 10/15/2016 10:40:13AM

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Blank Spike Summary				
Blank Spike ID: LCS for Hl Blank Spike Lab ID: 13544 Date Analyzed: 09/23/20	BN 1165550 [W] 18 16 11:30	[14513]		
QC for Samples: 11655	50006, 116555000	07, 116	5550008, 11655	Matrix: Water (Surface, Eff., Ground) 550009
Results by <b>SM21 4500-H E</b>	3			
	Blank	Spike (	(pH units)	
<u>⊃arameter</u> ⊳H	<u>Spike</u> 7 7	<u>Result</u> 7.03	<u>Rec (%)</u> 100	<u>CL</u> ( 99-101 )
Batch Information				
Analytical Batch: WTI4513 Analytical Method: SM21 4 Instrument: Titration Analyst: KBE	500-Н В			Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 7 pH units Extract Vol: 1 mL Dupe Init Wt./Vol.: Extract Vol:
nt Date: 10/15/2016 10:40:15AN				
SGS North Americ	a Inc. 200 W	est Pott 62.234:	er Drive Ancho 3 f 907,561,530	rage, AK 95518 11 www.us.sgs.com

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Method Blank				
Blank ID: MB for HBl Blank ba8 ID: 1Q 4/	N 17443245[SI74/1]L QC	Matrix	k:[atOrWe/(n	fau09c ff⊞. ro( nGd
mp for eas 6l0, : 112/ / / 33329112/ / / 3	3379112/ / / 333] 9112/ / / 333C			
_) 0, ( lt, 8R <b>SM21 23</b> 2	20B			
<u>Oaras 0t0r</u>	<u>) 0, ( lt, </u>	<u>bUmTpb</u>	<u>Db</u>	<u>y nit,</u>
PlkalinitR	/ B3y	13B	QE 3	s vīb
PnalRiual Batug: [ PnalRiual M0tgoG In, tr(s 0nt: Sitratio PnalR t: hBc PnalRiual Dat07Sis	SI4/ 1] e MA1 AQA3B n D: CTAQTA312 2:A] :/ ] OM			

Orint Dat0: 1311/ TA312 13:43:17PM

e. e Nortg Ps 0riua InuE

SGS			US	Sampling and Testing SAL-FG-GRZZZ-00-00	9 Report - Event 2 02016-004 Rev. 0 16-Dec-16
Duplicate Sample Sumn	nary				
Driginal Sample ID: 116 Duplicate Sample ID: 13	5536001 54541		Analysis Date: Matrix: Water (	09/23/2016 16:05 Surface, Eff., Grou	nd)
QC for Samples:					
1165550006, 116555000	7, 1165550008, 1165	550009			
Results by SM21 2320B					
NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL
Alkalinity	70.3	70.4	mg/L	0.14	(< 25 )

Print Date: 10/15/2016 10:40:19AM

SGS				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary Blank Spike ID: LCS for HBI	N 1165550 [V	/TI4513]		
Blank Spike Lab ID: 185454 Date Analyzed: 09/28/2016	0 3 13:8R			
	00054405550			x atri(: Water cSMfa, eE. ffŒ) roMndP
- C for Sa%pieu: 1165550	JUUGET 105550	UURETTO	5550003E11655	20008
s euMtu by <b>SM21 2320B</b>				
	BI	ank Spike	e c%7/LP	
mara%eter	<u>Spike</u>	<u>s euMt</u>	<u>se, cQP</u>	<u>CL</u>
Alkalinity	250	242	9R	c35H115 P
Batch Information				
Analyti, al Bat, V: WTI4518				mrep Bat, V:
Analyti, al x etVod: SM21 232 InutrM%ent: Titration	10B			mep X etvod: mep Date/Ti%e:
Analyut: KBE				Spike Init Wt@volG 250 %7/L (tra, t vol: 50 %L
nt Date: 10/15/2016 10:40:19Ax				
S) S NortV A%eri, a	In, G 200 \ t 90R	Veut mott (562(2)848	er Drige An, Vor 8 <b>f</b> 90R <b>3</b> 61 <b>(5</b> 80)	a7eEAK 95513 1 www <b>®lu</b> @7uĢo%

Method Blank								
Blank ID: MB for HBI Blank Lab ID: 13542	N 1743946 [WXX/11634] 90	Matrix: Water (Surface, Eff., Ground)						
QC for Samples: 1165550006, 1165550	007, 1165550008, 1165550009							
Results by EPA 300.	0 –							
Parameter	<u>Results</u>	LOQ/CL	DL	<u>Units</u>				
Chloride	0.100U	0.200	0.0620	mg/L				
Fluoride	0.100U	0.200	0.0620	mg/L				
Sulfate	0.100U	0.200	0.0620	mg/L				
atch Information	]							
Analytical Batch: WIC5566 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2		Prep Batch: WXX11634 Prep Method: METHOD Prep Date/Time: 9/23/2016 4:58:00PM						
	Analyst: ACF Analytical Date/Time: 9/24/2016 4:43:12PM		Prep Initial Wt./Vol.: 10 mL Prep Extract Vol: 10 ml					

Print Date: 10/15/2016 10:40:22AM



## **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165550 [WXX11634] Blank Spike Lab ID: 1354291 Date Analyzed: 09/24/2016 17:05

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165550006, 1165550007, 1165550008, 1165550009

Results by EPA 300.0 Blank Spike (mg/L) Parameter <u>CL</u> <u>Spike</u> Result Rec (%) Chloride (90-110) 5 5.04 101 Fluoride 5 5.19 104 (90-110) Sulfate 5 5.16 103 (90-110) **Batch Information** Analytical Batch: WIC5566 Prep Batch: WXX11634 Analytical Method: EPA 300.0 Prep Method: METHOD Instrument: Metrohm 733 DX2 Prep Date/Time: 09/23/2016 16:58 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL Analyst: ACF Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/15/2016 10:40:24AM



## Matrix Spike Summary

Original Sample ID: 1354292 MS Sample ID: 1354293 MS MSD Sample ID: 1354294 MSD

Analysis Date:	09/25/2016	80:0
Analysis Date:	09/25/2016	0:30
Analysis Date:	09/25/2016	1:37
Matrix: Water	(Surface, Eff.,	Ground

QC for Samples: 1165550006, 1165550007, 1165550008, 1165550009

		_							
	Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
Sample	<u>Spike</u>	Result	<u>Rec (%)</u>	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
6.57	5.00	11.6	101	5.00	11.7	103	90-110	0.95	(< 15)
0.126J	5.00	4.92	96	5.00	5.06	99	90-110	2.80	(< 15)
0.100U	5.00	5.16	103	5.00	5.29	106	90-110	2.40	(< 15 )
	<u>Sample</u> 6.57 0.126J 0.100U	Sample         Spike           6.57         5.00           0.126J         5.00           0.100U         5.00	Sample         Spike         Result           6.57         5.00         11.6           0.126J         5.00         4.92           0.100U         5.00         5.16	Sample         Spike         Result         Rec (%)           6.57         5.00         11.6         101           0.126J         5.00         4.92         96           0.100U         5.00         5.16         103	Matrix Spike (mg/L)         Spike           Sample         Spike         Result         Rec (%)         Spike           6.57         5.00         11.6         101         5.00           0.126J         5.00         4.92         96         5.00           0.100U         5.00         5.16         103         5.00	Matrix Spike (mg/L)         Spike Duplicate           Sample         Spike         Result         Rec (%)         Spike         Result           6.57         5.00         11.6         101         5.00         11.7           0.126J         5.00         4.92         96         5.00         5.06           0.100U         5.00         5.16         103         5.00         5.29	Matrix Spike (mg/L)         Spike Duplicate (mg/L)           Sample         Spike         Result         Rec (%)         Spike         Result         Rec (%)           6.57         5.00         11.6         101         5.00         11.7         103           0.126J         5.00         4.92         96         5.00         5.06         99           0.100U         5.00         5.16         103         5.00         5.29         106	Matrix Spike (mg/L)         Spike Duplicate (mg/L)           Sample         Spike         Result         Rec (%)         Spike         Result         Rec (%)         CL           6.57         5.00         11.6         101         5.00         11.7         103         90-110           0.126J         5.00         4.92         96         5.00         5.06         99         90-110           0.100U         5.00         5.16         103         5.00         5.29         106         90-110	Matrix Spike (mg/L)         Spike Duplicate (mg/L)           Sample         Spike         Result         Rec (%)         Spike         Result         Rec (%)         Spike         Result         ReD (%)         0.101         0.103         90-110         0.95           0.100U         5.00         5.16         103         5.00         5.29         106         90-110         2.40

## Batch Information

Analytical Batch: WIC5566 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Analytical Date/Time: 9/25/2016 12:30:59AM Prep Batch: WXX11634 Prep Method: EPA 300.0 Extraction Waters/Liquids Prep Date/Time: 9/23/2016 4:58:00PM Prep Initial Wt./Vol.: 10.00mL Prep Extract Vol: 10.00mL

Print Date: 10/15/2016 10:40:26AM

Method Blank					
Blank ID: MB for HBN 1744161 [XXX/36403] Blank Lab ID: 1354959 QC for Samples: 1165550006, 1165550007, 1165550008, 1165550009		Matrix:	Water (Surfa	ce, Eff., Ground)	
Results by AK102					
Parameter Diesel Range Organics	<u>Results</u> 0.380J	LOQ/CL 0.600	<u>DL</u> 0.180	<u>Units</u> mg/L	
Surrogates 5a Androstane (surr)	104	60-120		%	
Analytical Batch: XFC12 Analytical Method: AK10 Instrument: Agilent 7890 Analyst: NRO Analytical Date/Time: 10	Prep Batt Prep Met Prep Date Prep Initia Prep Extr	C 016 8:46:51AM 0 mL			

Print Date: 10/15/2016 10:40:28AM

SGS



## **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165550 [VVVX620X9 Blank Spike La] ID: 1X52b60 Da& 4nalt Aey: 10z01zt016 00:2/ Spike Duplica3e ID: LCSD for HBN 1165550 [VVVX620X9 Spike Duplica3e La] ID: 1X52b61 s a3iM x a3er W3urface(, fft . rounyG

g C for SaP pleR

1165550006( 116555000Q( 116555000/ ( 116555000b

<u>∽</u> 7eRul3R]t <b>AK102</b>									
		Blank Spike	eWP%aLG	S	Spike Duplic	ca3eWP%aLG			
<u>) araPe3er</u>	<u>Spike</u>	<u>7 eRul3</u>	<u>7 ec Wh</u> G	<u>Spike</u>	<u>7 eRul3</u>	<u>7 ec Wh</u> G	<u>CL</u>	<u>7)DWm</u> G	7) D CL
DieRel 7 an 2 8 r 2 manicR	d0	d0Ĕ	102	d0	d0166	10X	WQ5C1d5G	0162	W d0 G
Surrogates									
5a 4 nyroRane WaurrG	012	112	112	012	115	115	W60C1d0G	1⊞0	
Batch Information									
4 nalt 3cal Ba金<: <b>XFC12899</b> 4 nalt 3cal s e <b>3</b> ∘oy: <b>AK102</b>				) re ) re	pBa3c<:XX pse3≺oy:	XX36403 SW3520C			
InR3uPen3 Agilent 7890B R				) re	p Da3ezhiP	e: 09/28/201	6 08:46		
4 nalt R3 NRO				Spil	ke Ini3x 377	이트 d0 P %귍 이트 d0 P %귊	., Msac3To	1: 1 P L • 1 P I	
				Dup			, woolooron		

) rin3Da3e: 10z15zd016 10:20:X04s

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	Method Blank					
	Blank ID: MB for HBN 174416 Blank Lab ID: 1354959	51 [XXX/36403]	Matr	ix: Water (Surfa	ace, Eff., Ground)	
	QC for Samples: 1165550006, 1165550007, 1165	550008, 1165550009				
	Results by AK103					
	Parameter	Results	LOQ/CL	<u>DL</u>	Units	
	Residual Range Organics	0.250U	0.500	0.150	mg/L	
	<b>Surrogates</b> n-Triacontane-d62 (surr)	102	60-120		%	
E	Batch Information					
	Analytical Batch: XFC12899 Analytical Method: AK103 Instrument: Agilent 7890B R Analyst: NRO Analytical Date/Time: 10/1/20	016 12:39:00AM	Prep B Prep M Prep D Prep Ir Prep E	atch: XXX36403 lethod: SW3520 ate/Time: 9/28/2 iitial Wt./Vol.: 25 xtract Vol: 1 mL	3 C 2016 8:46:51AM 0 mL	

Print Date: 10/15/2016 10:40:31AM

SGS



## **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165550 [VVVX620X9 Blank Spike La] ID: 1X52b60 Da& 4nalt Aey: 10z01zt016 00:2/ Spike Duplica3e ID: LCSD for HBN 1165550 [VVVX620X9 Spike Duplica3e La] ID: 1X52b61 s a3iM x a3er W3urface(, fft . rounyG

g C for SaP pleR 116

1165550006( 116555000Q( 116555000/ ( 116555000b

✓ 7 eRul3R] t AK102									
		Blank Spike	₩7%2LG	5	Spike Duplic	a3eWP%aLG			
<u>) araPe3er</u>	<u>Spike</u>	<u>7 eRul3</u>	<u>7 ec Wh</u> G	<u>Spike</u>	<u>7 eRul3</u>	<u>7 ec Wh</u> G	<u>CL</u>	<u>7)DWm/G</u>	7) D CL
7 eRyual 7 an%e 8 r%anicR	d0	d0Ð	100	d0	d0⊟	100	W60C1d0G	0년2	W d0 G
Surrogates									
n&riacon≠@6d WaurrG	012	101	101	012	10d	10d	W60C1d0G	1⊞0	
Batch Information									
4 nalt 3cal Ba3ch: XFC18977 4 nalt 3cal s e3noy: AK102 InR3uPen3 Agilent R970B N				) re ) re	oBa3ch:XX ose3noy: oDa3ez <ipo< td=""><td>XX26402 SW2580C e: 07/89/801</td><td>6 09:46</td><td></td><td></td></ipo<>	XX26402 SW2580C e: 07/89/801	6 09:46		
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) rin3Da3e: 10z15zd016 10:20:X24s

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1165550

Facilities Groundwater Quality d Testing Report - E ent 2 -GRZZZ-00-002016-004 Rev. 0 Samples Received Cold? YES NO Chain of Custody Seal: (Circle) 16-Dec-16 BROKEN ABSENT Temperature °C: œ ę Requested Turnaround Time and-or Special Instructions!  ${\cal FG}$ page 1 COOLER ID * <u>Total and Dissolved Metals:</u> As, Ba, Ca, Cd, Cr, Co, Cu, Fe, Pb, Mg, Mn, Mo, Na, Ni, Sb, Se, Tl, V, Zn KITACH NON Hq 8+H0024 12M2 SM2130B Turbidity. VinileXIA BOSES rSM8 SM21 2540C TDS Special Deliverable Req: Level II 2 M21 4500NO3-F - Nitrate, Nitrite E300.0 - CI, FI, SO4 2 SM21 2540D - TSS Shipping Ticket No: K102/AK103 - DRO/RRO EDD: PDF, Access X Shipping Carrier: 4 3 ER? 22 r 8 EONX. K101-GKO 5 sleteM letoT - 8.0023 3 (leto) SONA × × 31631E × × × × × × × SGS Environmental Services Inc. SM21 23408 - Hardness sleteM bevlossid - 8.0053 E1631E - Low-level Hg (dissolved) SGS Reference #: × × × × × × × × × × × GRAB SAMPLE COMP Received For Laboratory By: Preserv TYPE Used **Revise sample MW50A-0916** ime to 12:46 VOZH ZURG 9/22/16 Received By Received By Received By MATRIX 105.00148.16001 С. 14:46 15:10 16:55 15:10 16:55 16:50 TIME 10:37 08:00 10:37 13:31 10:37 12:41 9:41 (office) 264-6965 PROJECT □ ^{CI} 3180 Peger Road Fairbanks, AK 99701 Tel: (907) 474-8656 Fax: (907) 474-9685 1361 Fax: (907) 561-530 No. Lime Time Time email jgray@slrconsulting.com Time QUOTE #: 332060 2700 Gambell Street Anchorage, Alaska 99503 9/18/2016 9/16/2016 9/16/2016 9/16/2016 9/16/2016 9/16/2016 9/16/2016 9/17/2016 9/17/2016 9/18/2016 9/18/2016 9/18/2016 9-19-16 DATE Q 200 W. Potter Drive Anchorage, AK 99518 Tel: (907) 562-2343 PHONE NO: Date Date Date Date SAMPLE IDENTIFICATION 2/10- ZL8-WW MW-87B -- 09// MW-50A -09 MW-50B-09 EB-H1558-0916 MW-74A-0916 MW-27B-0916 MW-74B-0916 MW-82A-0916 MW-82B-0916 Bret Berglund, SLR **TB-6-0916** Jason Gray, SLR EB1-0916 Jason Gray, SLR Kenai Wells, Event 2 Kelinquished By: (1) SLR Consulting B Relinquished By: (4) Relipéuished By: (2) Relinquished By: (3) REPORTS TO: NVOICE TO: Vit CONTAC' PROJECT: LAB NO. CLIENT: 4-9 8 Q-A A-B 7 6-8 43 Name 4-3 4-8 122 C -692

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Confidential



# SGS Environmental Services Inc.



		.	K										ON S	4 Drs	L Sam SAL-F	NG G-	Faciliti g and 1 GRZZZ	es Groundw Festing Repo 2-00-002016	Confidentia ater Quality ort - Event 2 -004 Rev. ( 16-Dec-1(
	page 1 of	COOLER ID 4											Samples Received Cold? YF	Temperature °C:	Chain of Custody Seal: (	INTACT BROKEN AB	nstructions:0	Ni, Sb, Se, Tl, V, Zn	
			euon euo	, V. I	40C TDS; 208 Alkali 920 Alkali 92 Turbidity 84 H00i	2021 49 2021 20 2021 20 2021 20 2021 20	×	×							el II		and-or Special I	^b i, Mg, Mn, Mo, Na,	
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	nce #:		2	₄ 6 س ل		E1631E -	30	003			+++	+							
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			148.16001	sample	12:46 22/16	MATRIX	GW	GW	N	W			Received By:		Received By:		Received By:	Received For	
		) 264-6965	ROJECT 105.00 No.		beo time to	TIME	14:46	9:41	16:55	16:50			me		me		me	me [7, ¹ 0 [	) 561-5301 74-9685 0) 350-1557
		NE NO: (office)	ď	y@slrconsulting.c	QUOTE #: 3320 and Alaska 9950'	DATE	9/18/2016	9/18/2016	9/16/2016	9/16/2016			Date		Date	7	Date	Pate Ti	) 562-2343 Fax: (907 74-8656 Fax: (907) 4 0) 350-1903 Fax: (91
	{ Consulting	Jason Gray, SLR PHOI	Kenai Wells, Event 2	Jason Gray, SLR email jgra	Bret Berglund, SLR 2700 Gamhell Street Anchors	AMPLE IDENTIFICATION	MW-50A-0916	MW-50B-0916	EB-H1558-0916	EB1-0916			lished By: (1)		(2)		(3)	(4)	Drive Anchorage, AK 99518 Tel: (907) ad Fairbanks, AK 99701 Tel: (907) 47 Drive Wilmington, NC 28405 Tel: (916
E-6	CLIENT: SLF	CONTACT:	PROJECT: Name	REPORTS TO:	INVOICE TO:	LAB NO. S	$(P) \mathcal{B} \mathcal{F}(Q)$	Q R FLI	loj B	(N 5			Collected/Reling		Relinquished By:		Relinquished By:	Relinquished By:	<b>1</b> 100 W. Potter 1 <b>1</b> 10 5500 Business <b>1</b> 10 10 10 10 10 10 10 10 10 10 10 10 10

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# SGS Environmental Services Inc.



	Г						,											San	LNG npling	Fac g an	ilities d Te:	Co Groundwate sting Report	nfidential er Quality - Event 2
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			0148.1600	sample	-0916 12:46 2/16	MATRI	Mg	GW	GW	GW	8					Received B	Ń	Received B		Received B		Received F	
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		TICe) 264-(	PROJE No.	ting.com	332060	00000	-		-	-						Time	0380	Time		Time		Time $\left  \beta_{o}^{l} \right $	(907) 561-53 7) 474-9685 (910) 350-1
		NE NO: (01		y@slrconsul	QUOTE #:	DATE	09/18/16	09/18/16	09/18/16	09/18/16	09/18/16					Date	7-19-16	Date		Date		Ally/i	562-2343 Fax: -8656 Fax: (90 350-1903 Fax:
	Ond	DHY		email jgra	R aet Anchors	CATION	16	9	16	9						Ē	N.						18 Tel: (907) Tel: (907) 474 405 Tel: (910)
	LR Consulting	Kenai Walls	Event 2	): Jason Gray, SLR	: Bret Berglund, SLI 2700 Gambell Stre	SAMPLE IDENTIFIC	MW-50A-091	MW-50B-091	MW-87B-091	MW-87Z-091	TB3-0916				0	tuishee By: (1)	Anno 1	: (2)		: (3)		: (4)	Drive Anchorage, AK 995 ad Fairbanks, AK 99701 Drive Wilmington, NC 284
E-6	CLIENT: SI CONTACT:	PROJECT.	Name	REPORTS TC	INVOICE TO	LAB NO.	(C) C-E	JO CH	18 (1) 8-)	18,08-)	74-0				R	Collected/Relinc	( bill II	Relinduished By		Relinquished By		Relinquished By	200 W. Potter 38 Peger Rc 2500 Business 2500 Business

		RT OF	EN	A 09/19	/16 10:26	095166		808	LNG Fac	Confidential ilities Groundwater Quality d Testing Report - Event- <b>2 rgt</b>
S	SLA JAS	SON	GR.	AY	SHI	PPER'S ACCOU H7752	NT NUMBER	NOT AIR WAYBILL (AIR CONSIGNMENT NOT		4700 Old Intern#6cDe/okinfort Road Anchorage, Alaska 99502
K 00	ENAI	NAME	, ADI	AK DRESS& PHONE	CONS	9072238	578 UNT NUMBER	It is agreed that the goods (except as noted) for carria THE COMPANIES TARIFF CONCERNING CARRIERS liability by declaring a high	described herein are acc ge SUBJECT TO THE Co S. THE SHIPPER'S ATT " LIMITATION OF LIABIL er value for carriage and j	epted in apparent good order and condition ONDITIONS OF CONTRACT AS LISTED IN ENTION IS DRAWN TO THE NOTICE ITY. Shipper may increase such limitation of paying a supplemental charge if required.
20 A	GS LAE	BS TPC RAGE	DTT E	ER RD AK	99518	90756223	43	Received in Good Condition Place TO EXPEDITE MOVEMENT, SH RULE UNLESS SHIPPER GIVE:	IPMENT MAY BE DIVERTED S OTHER INSTRUCTION HE	Date D TO MOTOR OR OTHER CARRIER AS PER TARIFF REON
ISSU	UING CARR	RIER'S	AGEN	IT NAME, CITY & P	HONE			ALSO NOTIFY NAME & AD	DRESS	1
AGEN	VT'S IATA COI	DE	-		ACCOUNT NO.			ACCOUNTING INFORMATI	ON 7147441	
AIRPO Ken	ORT OF DEPA	ARTURE			Declared Value \$ 0.00	Insured Am \$ 0	.00	Acc#: H7752 SLR	INTERNATIONA	L CORP.
	BYF	IRST						COMMENTS		
	AIRPORTO	of DEST	ge	ON						
No. Of Pieces Rcp	Gross Weight	kg ib	Re	e Class Commodity Item No.	Chargeable Weight	Rate/Cha	rge	Total	Ňe	sture and Quantity of Goods
3	113 [PREP/ \$41.	AID 81		VEIGHT CHARGE	COLLECT		OTHER CHA	\$41.81 RGES AND DESCRIPTION		65550
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TATION NI ICHORAG IIAK - (907 IRROW - (	\$0.0 LIOTAL PR \$44.4 UMBERS 07 675-4572 (907) 852-530	10 10 10 12 12 -2761	OTHE	FAIRBANKS GALENA -(90 KOTZEBUE - NOME - (90/ MOME - (90/	RIER 21AL COLLECT (907) 450-7250 7) 656-1875 (907) 442-3020 443-7595	Shipper cel COMPANIE unless a hip part of the o by air accor Air Transpo Paid By	rtifles that the pri ES TARIFFS, ac gher value for cr consignment cor rding to applicat rt Association's Shipper	Inticulars on the face hereof a cepts that carrier's liability is urriage is declared on the fac tains restricted articles, suc le national governmental reg Restricted Articles Regulatio	I N are correct, agrees to the limited as stated in the co e hereof subject to an ad 1 part is described by nan julations, and for internati ns.	CONDITIONS AS LISTED IN THE ompanies tariffs and accepts such value ditional charge and that insofar as any ne and is in proper condition for carriage ional shipments, the current international
rinted a	e - (907) 543-3825 E - (907) 659- at 10:27:01	9222 on 9/	/19/2	ST. MARYS- UNALAKLEET	(907) 438-2247 - (907) 624-3595 1 10.106.2.2	Printed Nam Signature	e and Title			

## Consignee Copy

	LNG Facilities ( Sampling and Test USAL-FG-GRZZZ-00	Confidential Groundwater Quality ing Report - Event 2 -002016-004 Rev. 0
Ale	rt Expeditors Inc.	16-Dec-16 #36849
City 8421 Flamingo	wide Delivery • 440-3351 Drive • Anchorage, Alaska	99502
Date919 From	16 SLR	
<b>T0</b>	5/15	
Collect 🗆	Prepay  Account	Advance Charges
Job # ·	PO#	
	3(2) 113	
	714 2604	Kavn
	1165	550
Shipped Signatur		(MIN) (MIN)
Received By:	Margaren 1 11 m. 13-1	Fotal Charge 126 of 137

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	1	16555	0			6 5 5 5 0	
Review Criteria	Y/N (yes/n	o)	Exc	eptions N	oted be	elow	
			exemption pern	nitted if sam	<mark>pler hand</mark>	carries/delivers.	
Were Custody Seals intact? Note # 8	k location Y			1F-1B			
COC accompanied	samples? Y						
Y **exemption perm	litted if chilled & c	ollected <8hrs	ago or chlling no	o <mark>t required (</mark> i	.e., waste	a, oil)	
	N	Cooler ID: 8		@	12.6	°C Therm ID:	D3
	Ý	Cooler ID: 4		@	1.9	°C Therm ID:	D3
Temperature blank compliant* (i.e., 0-6 °C a	after CF)? Y	Cooler ID: 3		@	3.6	°C Therm ID:	D3
	Y	Cooler ID:		@		°C Therm ID:	
	2 Y	Cooler ID:		@		°C Therm ID:	
*IJ >0°C, were samples collectea <0 not	urs ago? Y						
If <0°C, were sample containers	ice free? Y						
If samples received without a temperature blank, the "cooler tempera	ture" will						
be documented in lieu of the temperature blank & "COOLER TEMP" wi	ill be						
noted to the right. In cases where neither a temp blank nor cooler tem	np can be						
obtained, note "amplent" or "chilled .							
Note: Identify containers received at non-compliant temperature . Us FS-0029 if more space is needed.	e form		_	_	_		
	N	lote: Refer to	form F-083 "Sam	ple Guide" fr	o <mark>r hold ti</mark> r	mes.	
Were samples received within h	old time? Y						
Do samples match COC** (i.e.,sample IDs,dates/times or	ollected)? Y						
**Note: If times differ <1hr, record details & login	per COC.						
Were analyses requested unam	ibiguous? Y						
							ĺ
			***Exemption r	permitted fo	r metals (	(e g 200 8/6020A)	
Were proper containers (type/mass/volume/preservative*			LACINGION		Inctuis (	5.g,200.0,0020,.	
	Juscu:						ĺ
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with	samples? Y						
Were all VOA vials free of headspace (i.e., bubbles	< 6mm)? Y						
Were all soil VOAs field extracted with Me							
Note to Client: Any "no" answer above indicate	concompliance	with standard	a procedures and	may impact	data nua		
	5 Holl-compliance	WILLI Standard	procedures and	ffidy impace	Udia yuu.	ity.	
Addit	t <mark>ional notes (if</mark>	applicable)	):				



## **Sample Containers and Preservatives**

Container Id	Preservative	<u>Container</u> Condition	<u>Container Id</u>	Preservative	<u>Container</u> Condition
1165550001-A	HCL to pH < 2	ОК	1165550009-H	No Preservative Required	ОК
1165550002-A	HCL to $pH < 2$	OK	1165550009-I	No Preservative Required	OK
1165550003-A	HCL to $pH < 2$	OK	1165550009-J	No Preservative Required	OK
1165550004-A	HCL to pH < 2	OK	1165550010-A	HCL to $pH < 2$	OK
1165550005-A	HCL to $pH < 2$	OK	1165550010-B	HNO3 to pH < 2	OK
1165550006-A	HCL to $pH < 2$	OK	1165550011-A	HCL to $pH < 2$	OK
1165550006-В	HNO3 to pH < 2	ОК	1165550011-B	HNO3 to $pH < 2$	OK
1165550006-C	HCL to $pH < 2$	ОК	1165550012-A	HCL to $pH < 2$	OK
1165550006-D	HCL to $pH < 2$	ОК	1165550012-B	HCL to $pH < 2$	OK
1165550006-E	HCL to pH < 2	ОК	1165550012-C	HCL to $pH < 2$	OK
1165550006-F	HCL to $pH < 2$	ОК	1165550013-A	HCL to $pH < 2$	OK
1165550006-G	HCL to $pH < 2$	ОК	1165550013-B	HCL to $pH < 2$	OK
1165550006-H	No Preservative Required	ОК	1165550013-C	HCL to $pH < 2$	OK
1165550006-I	No Preservative Required	ОК	1165550014-A	HCL to $pH < 2$	OK
1165550006-J	No Preservative Required	ОК	1165550015-A	HCL to $pH < 2$	OK
1165550007-A	HCL to $pH < 2$	ОК	1165550016-A	HCL to $pH < 2$	OK
1165550007-В	HNO3 to pH < 2	ОК	1165550017-A	HCL to $pH < 2$	OK
1165550007-C	HCL to $pH < 2$	ОК	1165550018-A	HCL to $pH < 2$	OK
1165550007-D	HCL to $pH < 2$	ОК	1165550019-A	HCL to $pH < 2$	OK
1165550007-E	HCL to $pH < 2$	ОК	1165550019-B	HNO3 to pH < 2 $$	OK
1165550007-F	HCL to pH < 2	OK	1165550020-A	HCL to $pH < 2$	OK
1165550007-G	HCL to $pH < 2$	ОК	1165550020-B	HNO3 to pH < 2 $$	OK
1165550007-H	No Preservative Required	ОК	1165550021-A	HCL to $pH < 2$	OK
1165550007-I	No Preservative Required	OK	1165550021-B	HNO3 to pH < 2 $$	OK
1165550007-J	No Preservative Required	OK	1165550022-A	HCL to $pH < 2$	OK
1165550008-A	HCL to $pH < 2$	OK	1165550022-B	HNO3 to pH < 2	OK
1165550008-B	HNO3 to pH < 2	OK			
1165550008-C	HCL to $pH < 2$	OK			
1165550008-D	HCL to $pH < 2$	OK			
1165550008-E	HCL to $pH < 2$	OK			
1165550008-F	HCL to $pH < 2$	OK			
1165550008-G	HCL to $pH < 2$	OK			
1165550008-H	No Preservative Required	OK			
1165550008-I	No Preservative Required	OK			
1165550008-J	No Preservative Required	OK			
1165550009-A	HCL to $pH < 2$	OK			
1165550009-В	HNO3 to pH < 2	OK			
1165550009-C	HCL to $pH < 2$	OK			
1165550009-D	HCL to $pH < 2$	OK			
1165550009-Е	HCL to $pH < 2$	OK			
1165550009-F	HCL to $pH < 2$	OK			
1165550009-G	HCL to pH < 2	ОК			

9/19/2016

Container Id

Preservative

<u>Container</u> <u>Condition</u> <u>Container Id</u>

Confidential <u>Preservati</u> کے Facilities Groundwate<u> Antaitiver</u> Sampling and Testing Report کے Facilities USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

## Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

- OK The container was received at an acceptable pH for the analysis requested.
- BU The container was received with headspace greater than 6mm.
- DM- The container was received damaged.
- FR- The container was received frozen and not usable for Bacteria or BOD analyses.
- PA The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
- PH The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.



## SGS Environmental Services Inc.

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CLIENT:	SLR Consulting			S	<b>3S Referen</b>	;# <del>8</del> ;						ar 1	٩ ٩	-
CONTACT	: Jason Gray, SLR PHO	NE NO: (offi	ce) 264-6965								COOL	ERID	0	
PROJECT: Name	Kenai Wells, Event 2		PROJECT 105.00 No.	148.16001	Used	194	COX, CON	COT CON	alon Or	au au	$\left \right $	$\left \right $		
REPORTS	TO: Jason Gray, SLR email jgra	ay@slrconsultine	j.com		* SAMPLE c TYPE o C	g Metals	SIE 6H I	088/06		nate, Nitrite nity,				<b>.</b>
INVOICE 7	FO: Bret Berglund, SLR	QUOTE #: 30	\$2060		Z L A	H Ievel-w bevlossi	evel-wo.	03	SST - D	23-F - Miu D3-F - Miu D3 Alkali Furbidity 104-B PH				
	2700 Gambell Street Anchor	age, Alaska 99	503		" "	(pe (pe): - [0	- T- B	89-	5240	4200 5350 5240 5240				
LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	R GRAB	E16315 (dissolv B,0023	E16311 (total) 8.00.8	VK101	SM21 :	2W21 4 2W51 3 2W51 3 2W51 3 2W51 4 2W51				
D4-8	MW-82A-0916	9/16/2016	10:37			×	×	Y 61						
D) 4-8	MW-82B-0916	9/16/2016	13:31			×	×	AN AN						
3) 4-8	MW-27B-0916	9/16/2016	16:55			×	×	C ×						
9-4-0	MW-74A-0916	9/17/2016	10:37			×	×	A (CI)						
5)48	MW-74B-0916	9/17/2016	12:41			×	×	Y (B)						
C) 4 8	MW-50A -09/16	9/18/2016	14:46			×	×	4						
2)43	MW-50B09/6	9/18/2016	9:41			×	×	2 WA						
Q 4-3	0/10- Z13-WM	9/18/2016	15:10			×	×	4120						
Q) A-B	MW-87B0916	9/18/2016	15:10			×	×	624						
(10) 4	EB-H1558-0916	9/16/2016	16:55			×								
ACT	EB1-0916	9/16/2016	16:50				×							
/ A	/ TB-6-0916	9/16/2016	10:37			×								
Colleged/Re	linquished By: (1)	Date	Time	Received By:			Shippin	g Carrier:			Samp	Mes Received	COND' YES NO	
C/lu	ndhan /	91-19-16	08:00	$\mathbb{N}$			Shippin	g Ticket N	0		Tem	perature °C:	1	1
Relipquished	By: (2)	Ďate	Time	Received By:			Special	Deliverab	le Req: L	evel II	Chai	n of Custody	/ Seal: (Circle)	
							EDD: PI	DF, Access			VIN	CT BROK	EN ABSENT	Faci an
Relinquished	By: (3) 5	Date	Time	Received By:			Reques	ted Turna	round Tir	ne and-or Spec	ial Instruction	onstFB	22-00-0	ilities G d Testin
Relinquished	By: (4)	Date	Time	Received For La	aboratory By		Total and	Dissolved	Metals:				J020	round g Re
130	$\sum$	9/19/13	1361	( pulla	All I	)	As, Ba, B	e, Ca, Cd, C	r, Co, Cu, F	ie, Pb, Mg, Mn, Mo,	Na, Ni, Sb, S	e, TI, V, Zn	16-004 16-[	Confi dwater ( port - F
of 13780 Pee	otter Drive <b>Anchorage, AK 99518</b> Tel: (907) er Road Fairbanks, AK 99701 Tel: (907) 4	') 562-2343 Fax: (9 74-8656 Fax: (907	07) 561-5301 ) 474-9685	a. P									lec-16	dential Quality Vent 2

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5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557



## SGS Environmental Services Inc.



	<b>—</b>			1			1	T-			 	1		_	25	l San SAL·	LNG nplin -FG-	Facili g and GRZZ	ities Groundw Testing Repo Z-00-002016	Confiden ater Qua ort - Even -004 Rev
	page <u>1</u> of <u>1</u>	COOLER ID 4	11111											Samples Received Cold? YES NO	Temperature °C: 1 . 9 D	Chain of Custody Seal: (Circle)	INTACT BROKEN ABSENT	al Instructions.	ча, Ni, Sb, Se, TI, V, Zn	16-Dec
			alon alor	, ela, Vitrite , Ytir,	20003-F - Nitra 640C TDS, 520B Alkalit B Turbidity, B Turbidity, B Turbidity,	2W2146 2W5130 2W5130 2W5150 2W5150 2W5150	X	×								evel II		ne and-or Specia	e, Pb, Mg, Mn, Mo, I	
			and in		SST - 004	2 12MS	×	×			+				ä	e Req: L		ound Tin	<del>fotals:</del> Co, Cu, F	
			34	0/880	/К103 - DB СВО	- 101'AA	×	×						Carrier:	<b>Ficket No</b>	eliverable	Access	d Turnar	issolved A Ca, Cd, Cr	
			24	sl	etal Meta⊺ .	(total) 8.0023	×	×		×	 -			hipping (	hipping	pecial D	DD: PDF	tequeste	otal and D s, Ba, Be, d	
			CONNE	Metals Iness Ha	- Low-level	E200.8 - SM21 2: E200.8 -	×	×	×					0	0	0	<u> </u>	Ľ.		
	deference #:		Preserv	SAMPLE TYPE		GRAB BRAB E1631E -	(i)	902										2	atory By:	
	SGS R			* vo	z ⊢ ∢ – z	: w œ ø								- 1		ü			or Labora	
			148.16001			MATRIX	GW	GW	8	×				Received By		Received By		Received By	Received Fo	
		е) 264-6965	PROJECT 105.00	.com	2060 03	TIME	14:46	9:41	16:55	16:50				Time		Time	$\setminus$	Time	тіте [7, ¹ 0 [	07) 561-5301 474-9685 310) 350-1557
		NE NO: (offic		y@slrconsulting	QUOTE #: 33 age. Alaska 995	DATE	9/18/2016	9/18/2016	9/16/2016	9/16/2016				Date		Date .	_\	Date	Patte 9/19/14	) 562-2343 Fax: (9( 74-8656 Fax: (907) 0) 350-1903 Fax: (9
	the Consulting	Jason Gray, SLR PHO	Kenai Wells, Event 2	O: Jason Gray, SLR email jgra	<ul> <li>D: Bret Berglund, SLR</li> <li>2700 Gambell Street Anchors</li> </ul>	SAMPLE IDENTIFICATION	MW-50A-0916	MW-50B-0916	EB-H1558-0916	EB1-0916				nquished By: (1)		3y: (2)		3y: (3)	3y: (4)	er Drive Anchorage, AK 99518 Tel: (907 Road Fairbanks, AK 99701 Tel: (907) 4ï iss Drive Willmington, NC 28405 Tel: (910
F-7	CLIENT:	CONTACT:	PROJECT: Name	REPORTS T	INVOICE TO	LAB NO.	(P) 8 E)	ØRFL	10 ¹ B	2				Collected/Reli		Relinquished I		Relinquished I	Relinquished I	D 15200 W. Pott D 13180 Peger D 5500 Busine

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# SGS Environmental Services Inc.



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		page 1 of 1	CUULERID 3																	Samples Received Cold? YES NO	Temperature °C: 5 6	Chain of Custody Seal: (Circle)	INTACT BROKEN ABSENT	istructions.		Ni, Sb, Se, Tl, V, Zn	16-D	ec-16
				NON	<i>ι</i> λ'	DS, Ikalini idity, BPH	A 803 4 MuT 3+H0	51 420  51 308  51 525  51 524	WS WS WS NS		,											=		Id-or Special Ir		Mg, Mn, Mo, Na,		
	I		02	020	e, Nitri	4 - Nitrat	403-F	51 4200	SWS E30		,	< >	<	1		1						: Level		lime ar		, Fe, Pb,		
			R	33	ଅଧ୍ୟ	- DRG	10D -	A21201	NA N2	+	>		<	+	+	+	+	+	_		ö	le Req.		L puno.	Matala.	, Co, Cu		
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		e) 264-6965	PROJECT 105.001	acon		2060	503	TIME	14:46	9:41	15:10	15:10	9:41						a au	24.100 and	me of a		me		ne Re	3401	7) 561-5301	174-9685 V
		ONE NO: (offic		av@slrconsultin	)	QUOTE #: 33	rage, Alaska 99.	DATE	09/18/16	09/18/16	09/18/16	09/18/16	09/18/16						Date Ti	9-19-16	Date		Date Ti		Date Ti	7/19/1e 1	) 562-2343 Fax: (90	74-8656 Fax: (907) ⊿ 3) 350-1903 Fax: (9
	SLR Consulting	T: Jason Gray, SLR PH(	Kenai Wells, Event 2	TO: Jason Grav. SLR email ion		FO: Bret Berglund, SLR	2700 Gambell Street Ancho	SAMPLE IDENTIFICATION	MW-50A-0916	MW-50B-0916	MW-87B-0916	MW-87Z-0916	TB3-0916					7 0	linquished By: (1)	Whin /	By: (2)		By: (3)		By: (4)		tter Drive Anchorage, AK 99518 Tel: (907	г коас гакранка, АК 99701 Те!: (907) 4; ess Drive Wilmington, NC 28405 Tel: (91(
E-70	NCLIEN I:	CONTAC	PROJECT: Name	REPORTS		INVOICE -		LAB NO.	(C) C-E	100	1849 8-1	1008-	13A-C						Collected/Re	(11)	Relinquished		Relinquished		Relinquished		04.00 W. Po	

	AIRPOR DEP AR	RT OF	EN	A 09/19/	16 10:26	08	95166		808	8 71	LNG Fac	Confidential lities Groundwater Quality d Testing Report - Event- <b>2 rgt</b>
SL	A JAS		GR.	AY		SHIPPER	H7752	NUMBER	NOT AIR WAYBILL (AIR CONSIGNMENT NO	F	ISAL-FG-GF	ZZ-00-002016-004 Rev. 0 4700 Old Intern#6eDelcAlffort Road Anchorage, Alaska 99502
		NAME	, ADI	AK DRESS& PHONE		90 CONSIGNE	07223857	8 T NUMBER	It is agreed that the goods (except as noted) for carri THE COMPANIES TARIFI CONCERNING CARRIER liability by declaring a high	s descril lage SU FS. TH RS' LIMI her valu	bed herein are acc BJECT TO THE CO E SHIPPER'S ATT IATION OF LIABIL e for carriage and j	pted in apparent good order and condition NDITIONS OF CONTRACT AS LISTED IN ENTION IS DRAWN TO THE NOTICE ITY. Shipper may increase such limitation raying a supplemental charge if required.
200 AN	WES	T PC	DTT	ER RD AK s	9518	90	75622343	3	Received in Good Condition Place TO EXPEDITE MOVEMENT, 8 RULE UNLESS SHIPPER GIVE	SHIPMEN	T MAY BE DIVERTED	Date TO MOTOR OR OTHER CARRIER AS PER TAR TEON
ISSUN	NG CARR	IER'S	AGE	IT NAME, CITY & PI	IONE				ALSO NOTIFY NAME & AI	DDRES	S	1
AGENTS	SIATACOL	DE			ACCOUNT N	D.			ACCOUNTING INFORMAT		147441	
Airport Kenai	T OF DEPA	RTURE			Declared Valu \$ 0.00	0	Insured Amoun \$ 0.00	11 0	Acc#: H7752 SLR	RINTE	ERNATIONA	L CORP.
	BY FI	IRST							COMMENTS			
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No. Of Pleces Rcp	Gross Weight	8 P	Re	te Class Commodity Item No.	Chargeable	Weight	Rate/Charge		Total	-	Ne	ture and Quantity of Goods
3	- 113 [PREPA	ND 81		VEIGHT CHARGE	COLLECT			OTHER CH/	\$41.81 IRGES AND DESCRIPTION			65550
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	\$0.00	TOTAL	OTH	ER CHARGES DUE AG	NT						HAZ	
TION NUM HORAGE - K - (907) 6 ROW - (907) EEL - (907) HORSE -	\$0.00 OTAL PRE \$44.4 BERS - (907) 243- 075-4572 7) 852-5300 543-3825 543-3825	-2761	OTHE	FAIRBANKS - GALENA - (00 KOTZEBUE - NOME - (007) ST. MARYS -	(907) 450-7250 ) 656-1875 (907) 442-3020 443-7595 (907) 438-2247		Shipper certifi COMPANIES unless a highe part of the con by air accordin Air Transport A Paid By S	es that the pr TARIFFS, ac or value for cr signment co g to applicat Association's hipper	articulars on the face hereof cepts that carrier's liability is arriage is declared on the fa rtains restricted articles, suc ole national governmental re Restricted Articles Regulati	f are cor is limited ace here ch part i egulation lons.	I N rect, agrees to the i as stated in the cc of subject to an add s described by nan s, and for internati	CONDITIONS AS LISTED IN THE impanies tariffs and accepts such value litional charge and that insofar as any e and is in proper condition for carriage onal shipments, the current International
nted at 1	(07) 659-1	on 9/	/19/2	UNALAKLEET	- (907) 624-3595 10.106.2.2	S	rinted Name a	nd Title				1

**Consignee Copy** 

	Confidential
LNG Facilities Groun	dwater Quality
Sampling and Testing Re	eport - Event 2
USAL-FG-GRZZZ-00-0020	16-004 Rev. 0
	16-Dec-16
cpeditors Inc.	#368

## Alert Expeditors Inc.

Citywide Delivery • 440-3351 8421 Flamingo Drive • Anchorage, Alaska 99502

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Collect	Prepay 🗇 Account 🗇	Advance	Char
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Shipped Signature			
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in.



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Review Criteria	Y/N (	(ves/no)		Fxc	centions N	oted be	Nolo		
	1/153	(yes/no/		exemption per	mitted if sam	nler hand	carri	es/delivers.	
Were Custody Seals intact? Note # &	location	Y		CACHIPATEN P	1F-1B	pier nam	- Curr	cs/ acc.	
COC accompanied s	amples?	Y							
Y **exemption permi	itted if chille	ed & collec	ted <8	hrs ago or chlling n	ot required (i	i.e., waste	e, oil)		
		N Coo	ler ID:	8	@	12.6	°C	Therm ID:	D3
	Ē	Y Coo	ler ID:	4	@	1.9	°C	Therm ID:	D3
Temperature blank compliant* (i.e., 0-6 °C a	fter CF)?	Y Coo	ler ID:	3	@	3.6	°C	Therm ID:	D3
		Y Coo	ler ID:		@		°C	Therm ID:	
		Y Coo	ler ID:		@		°C	Therm ID:	
*If >6°C, were samples collected <8 hou	rs ago?	Y							
If <0°C, were sample containers i	ce free?	Y							
If samples received <u>without</u> a temperature blank, the "cooler temperate	ure" will								
be documented in lieu of the temperature blank & "COOLER TEMP" will	l be								l
noted to the right. In cases where neither a temp blank nor cooler temp obtained note "ambient" or "chilled".	p can be								
	- 6								
Note: Identity containers received at non-compliant temperature . Use FS-0029 if more space is needed.	e form								l
		Note:	Refer	to form E-083 "Sam	unle Guide" fo	or hold tir	nes		
Were samples received within ho	old time?	Y	Nerei		ipic duide		nes.		
	<u> </u>								
Do samples match COC** (i.e.,sample IDs,dates/times co	llected)?	Y							
**Note: If times differ <1hr, record details & login	per COC.								
Were analyses requested unamb	biguous?	Y							
				***Exemption	permitted for	r metals (	e.g,20	0.8/6020A).	
Were proper containers (type/mass/volume/preservative**	**)used?	Y					<u></u>		
IF APPLICABLE									
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with s	amples?	Y							
Were all VOA vials free of headspace (i.e., bubbles :	<mark>≤ 6mm)?</mark>	Y							
Were all soil VOAs field extracted with MeC	OH+BFB?	γ							
Note to Client: Any "no" answer above indicates	non-comp	liance with	standa	ard procedures and	may impact	data qua	lity.		
	ional not	es (if ann	licah	ام)					
			licub	ie).					



## **Sample Containers and Preservatives**

Container Id	<u>Preservative</u>	<u>Container</u> Condition	<u>Container Id</u>	<u>Preservative</u>	<u>Container</u> Condition
1165550001-A	HCL to $pH < 2$	OK	1165550009-H	No Preservative Required	ОК
1165550002-A	HCL to $pH < 2$	OK	1165550009-I	No Preservative Required	ОК
1165550003-A	HCL to $pH < 2$	OK	1165550009-J	No Preservative Required	OK
1165550004-A	HCL to $pH < 2$	OK	1165550010-A	HCL to $pH < 2$	OK
1165550005-A	HCL to $pH < 2$	OK	1165550010-B	HNO3 to $pH < 2$	OK
1165550006-A	HCL to $pH < 2$	ОК	1165550011-A	HCL to $pH < 2$	ОК
1165550006-В	HNO3 to pH < 2	ОК	1165550011-B	HNO3 to $pH < 2$	ОК
1165550006-C	HCL to $pH < 2$	ОК	1165550012-A	HCL to $pH < 2$	ОК
1165550006-D	HCL to pH < 2	ОК	1165550012-B	HCL to $pH < 2$	ОК
1165550006-E	HCL to $pH < 2$	ОК	1165550012-C	HCL to $pH < 2$	ОК
1165550006-F	HCL to pH < 2	ОК	1165550013-A	HCL to $pH < 2$	ОК
1165550006-G	HCL to $pH < 2$	ОК	1165550013-B	HCL to $pH < 2$	ОК
1165550006-H	No Preservative Required	ОК	1165550013-C	HCL to $pH < 2$	ОК
1165550006-I	No Preservative Required	ОК	1165550014-A	HCL to $pH < 2$	ОК
1165550006-J	No Preservative Required	ОК	1165550015-A	HCL to $pH < 2$	ОК
1165550007-A	HCL to $pH < 2$	ОК	1165550016-A	HCL to $pH < 2$	ОК
1165550007-В	HNO3 to pH < 2	ОК	1165550017-A	HCL to $pH < 2$	ОК
1165550007-C	HCL to pH < 2	ОК	1165550018-A	HCL to $pH < 2$	ОК
1165550007-D	HCL to pH < 2	ОК	1165550019-A	HCL to $pH < 2$	ОК
1165550007-E	HCL to pH < 2	OK	1165550019-B	HNO3 to pH < 2 $$	OK
1165550007-F	HCL to pH < 2	OK	1165550020-A	HCL to $pH < 2$	ОК
1165550007-G	HCL to $pH < 2$	OK	1165550020-B	HNO3 to pH < 2 $$	ОК
1165550007-H	No Preservative Required	OK	1165550021-A	HCL to $pH < 2$	ОК
1165550007-I	No Preservative Required	OK	1165550021-B	HNO3 to $pH < 2$	OK
1165550007-J	No Preservative Required	OK	1165550022-A	HCL to $pH < 2$	OK
1165550008-A	HCL to $pH < 2$	OK	1165550022-B	HNO3 to $pH < 2$	OK
1165550008-B	HNO3 to pH < 2	OK			
1165550008-C	HCL to $pH < 2$	OK			
1165550008-D	HCL to $pH < 2$	OK			
1165550008-E	HCL to $pH < 2$	OK			
1165550008-F	HCL to $pH < 2$	OK			
1165550008-G	HCL to $pH < 2$	OK			
1165550008-H	No Preservative Required	OK			
1165550008-I	No Preservative Required	OK			
1165550008-J	No Preservative Required	OK			
1165550009-A	HCL to $pH < 2$	OK			
1165550009-В	HNO3 to pH < 2	OK			
1165550009-C	HCL to $pH < 2$	OK			
1165550009-D	HCL to $pH < 2$	OK			
1165550009-E	HCL to $pH < 2$	OK			
1165550009-F	HCL to $pH < 2$	OK			
1165550009-G	HCL to pH < 2	ОК			

9/19/2016

Container Id

Preservative

<u>Container</u> <u>Condition</u> <u>Container Id</u>

Confidential <u>Preservati</u> کے Facilities Groundwate<u> Antaitiver</u> Sampling and Testing Report کے Facilities USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

## Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

- OK The container was received at an acceptable pH for the analysis requested.
- BU The container was received with headspace greater than 6mm.
- DM- The container was received damaged.
- FR- The container was received frozen and not usable for Bacteria or BOD analyses.
- PA The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
- PH The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

9/19/2016



## Laboratory Report of Analysis

To: SLR Alaska-Anchorage 2700 Gambell St Suite 200 Anchorage, AK 99503 (907)222-1112

Report Number: 1165574

Corrected Report - Revision 1 - This report has been reissued to make corrections to the case narrative. No data has changed.

Client Project: 105.00148.16001 KW Event 2

Dear Jason Gray,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely, SGS North America Inc.

Justin Nelson 2016.11.01 05:43:15 -08'00' SGS North America Inc Environmental Services – Alaska Division Project Manager

Justin Nelson Project Manager Justin.Nelson@sgs.com

Date

Print Date: 11/01/2016 5:38:15AM

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## **Case Narrative**

## SGS Client: SLR Alaska-Anchorage SGS Project: 1165574 Project Name/Site: 105.00148.16001 KW Event 2 Project Contact: Jason Gray

Refer to sample receipt form for information on sample condition.

## 1165574001(1353306BND) (1353309) BND

200.8LL - Metals BND recoveries for silicon (133%) and sodium (131%) do not meet QC criteria. The sample concentration is 4 times greater than the spike level.

## 1165574001(1353306MS) (1353307) MS

200.8LL - Metals MS recovery for aluminum (211%) does not meet QC criteria. Post digestion spike was successful. 200.8LL - Metals MS recoveries for silicon (155%) and sodium (151%) do not meet QC criteria. The sample concentration is 4 times greater than the spike level.

## 1165589004MS (1354396) MS

4500NO3-F - Nitrate/Nitrite - MS recovery is outside of QC criteria. Refer to LCS for accuracy requirements.

## 1165574002(1353306MSD) (1353308) MSD

200.8LL - Metals MSD recovery for aluminum (199%) does not meet QC criteria. Post digestion spike was successful.

## 1165589004MSD (1354397) MSD

4500NO3-F - Nitrate/Nitrite - MSD recovery is outside of QC criteria. Refer to LCS for accuracy requirements.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

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## Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <a href="http://www.sgs.com/en/Terms-and-Conditions.aspx">http://www.sgs.com/en/Terms-and-Conditions.aspx</a>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*  ! B CCV/CVA/CVB CCCV/CVC/CVCA/CVCB CL D D D F D L E F GT IB ICV J LCS(D) LOD LOQ LT M MB MS(D) ND Q R R PD	The analyte has exceeded allowable regulatory or control limits. Surrogate out of control limits. Indicates the analyte is found in a blank associated with the sample. Continuing Calibration Verification Closing Continuing Calibration Verification Control Limit The analyte concentration is the result of a dilution. Dilution Factor Detection Limit (i.e., maximum method detection limit) The analyte result is above the calibrated range. Indicates value that is greater than or equal to the DL Greater Than Instrument Blank Initial Calibration Verification The quantitation is an estimation. The quantitation is an estimation. The analyte was positively identified, but the quantitation is a low estimation. Laboratory Control Spike (Duplicate) Limit of Detection (i.e., 1/2 of the LOQ) Limit of Quantitation (i.e., reporting or practical quantitation limit) Less Than A matrix effect was present. Method Blank Matrix Spike (Duplicate) Indicates the analyte is not detected. QC parameter out of acceptance range. Rejected Relative Percent Difference
Q R	QC parameter out of acceptance range. Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.
Sample summaries which in All DRO/RRO analyses are	nclude a result for "Total Solids" have already been adjusted for moisture content. integrated per SOP.

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Note



	\$	Sample Summary		
Client Sample ID	Lab Sample ID	Collected	Received	Matrix
MW-39A-0916	1165574001	09/19/2016	09/20/2016	Water (Surface, Eff., Ground)
MW-39B-0916	1165574002	09/19/2016	09/20/2016	Water (Surface, Eff., Ground)
MW-62A-0916	1165574003	09/19/2016	09/20/2016	Water (Surface, Eff., Ground)
MW-39A-0916	1165574004	09/19/2016	09/20/2016	Water (Surface, Eff., Ground)
MW-39B-0916	1165574005	09/19/2016	09/20/2016	Water (Surface, Eff., Ground)
MW-62A-0916	1165574006	09/19/2016	09/20/2016	Water (Surface, Eff., Ground)
<u>Method</u>	Method Des	<u>cription</u>		
SM21 2320B	Alkalinity as	CaCO3 QC		
SM21 2340B	Dissolved H	ardness as CaCO	3 ICP-MS-LowLv	
AK102	DRO/RRO L	ow Volume Wate	r	
AK103	DRO/RRO L	ow Volume Wate	r	
SM21 4500NO3-F	Flow Injection	on Analysis		
EPA 300.0	Ion Chroma	tographic Analysis	; (W)	
200.8 Low Level	Metals in Wa	ater by 200.8 ICP-	MS LL	
200.8 Low Level	Metals in Wa	ater by 200.8 ICP-	MS LL DIS	
SM21 4500-H B	pH Analysis			
SM21 2540C	Total Dissol	ved Solids SM18 2	2540C	
SM21 2540D	Total Suspe	nded Solids SM20	) 2540D	
SM21 2130B	Turbidity An	alysis		

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## **Detectable Results Summary**

Client Sample ID: MW-39A-0916			
Lab Sample ID: 1165574001	Parameter	Result	Units
Metals by ICP/MS	Aluminum	88.0	ug/L
-	Antimony	0.0640	ug/L
	Arsenic	26.9	ug/L
	Barium	10.4	ug/L
	Boron	140	ug/L
	Calcium	9860	ug/L
	Chromium	2.21	ug/L
	Cobalt	0.137	ug/L
	Copper	2.38	ug/L
	Iron	179	ug/L
	Lead	0.336	ug/L
	Magnesium	3660	ug/L
	Manganese	61.9	ug/L
	Molybdenum	1.23	ug/L
	Nickel	1.57	ug/L
	Potassium	5000	ug/L
	Sodium	23900	ug/L
	Tin	0.0718J	ug/L
	Vanadium	0.888J	ug/L
	Zinc	5.41	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.383J	mg/L
Waters Department	Alkalinity	87.3	mg/L
	Chloride	4.55	mg/L
	Fluoride	0.220	mg/L
	рН	8.40	pH units
	Sulfate	1.90	mg/L
	Total Dissolved Solids	129	mg/L
	Total Suspended Solids	2.34	mg/L
	Turbidity	1.80	NTU

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## **Detectable Results Summary**

Client Sample ID: MW-39B-0916			
_ab Sample ID: 1165574002	<u>Parameter</u>	Result	<u>Units</u>
Metals by ICP/MS	Aluminum	113	ug/L
	Antimony	0.0647	ug/L
	Arsenic	1.66	ug/L
	Barium	65.2	ug/L
	Boron	6.10	ug/L
	Cadmium	0.0367J	ug/L
	Calcium	34200	ug/L
	Chromium	9.30	ug/L
	Cobalt	14.9	ug/L
	Copper	1.01	ug/L
	Iron	11700	ug/L
	Lead	0.0859J	ug/L
	Magnesium	14000	ug/L
	Manganese	1270	ug/L
	Molybdenum	0.550	ug/L
	Nickel	27.7	ug/L
	Potassium	3210	ug/L
	Selenium	0.682J	ug/L
	Sodium	22400	ug/L
	Thallium	0.00780J	ug/L
	Vanadium	1.65	ug/L
	Zinc	22.8	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.361J	mg/L
Vaters Department	Alkalinity	51.7	mg/L
·	Chloride	115	mg/L
	Fluoride	0.112J	mg/L
	рН	6.20	pH units
	Sulfate	9.90	mg/L
	Total Dissolved Solids	365	mg/L
	Total Suspended Solids	4.00	mg/L
	Turbidity	4.60	NTU

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## **Detectable Results Summary**

ab Sample ID: 1165574003	Parameter	Result	Units
Metals by ICP/MS	Aluminum	802	ug/L
	Antimony	0.0767	ug/L
	Arsenic	16.7	ug/L
	Barium	24.2	ug/L
	Boron	36.3	ug/L
	Cadmium	0.0163J	ug/L
	Calcium	16400	ug/L
	Chromium	48.0	ug/L
	Cobalt	0.950	ug/L
	Copper	3.30	ug/L
	Iron	1590	ug/L
	Lead	0.424	ug/L
	Magnesium	9820	ug/L
	Manganese	181	ug/L
	Molybdenum	1.70	ug/L
	Nickel	22.9	ug/L
	Potassium	7800	ug/L
	Sodium	5980	ug/L
	Tin	0.123J	ug/L
	Vanadium	1.75	ug/L
	Zinc	15.7	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.437J	mg/L
Waters Department	Alkalinity	90.5	mg/L
	Chloride	5.74	mg/L
	Fluoride	0.134J	mg/L
	рН	8.20	pH units
	Sulfate	4.18	mg/L
	Total Dissolved Solids	124	mg/L
	Total Suspended Solids	110	mg/L
	Turbidity	15.0	NTU

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0.686J

4.61

ug/L

ug/L

# **Detectable Results Summary**

Client Sample ID: MW-39A-0916			
Lab Sample ID: 1165574004	Parameter	Result	Units
Dissolved Metals by ICP/MS	Aluminum	10.5	ug/L
-	Antimony	0.0406J	ug/L
	Arsenic	30.5	ug/L
	Barium	8.76	ug/L
	Boron	166	ug/L
	Calcium	9680	ug/L
	Chromium	0.299J	ug/L
	Cobalt	0.0534	ug/L
	Copper	0.339J	ug/L
	Hardness as CaCO3	39.4	mg/L
	Iron	47.7	ug/L
	Lead	0.0423J	ug/L
	Magnesium	3710	ug/L
	Manganese	62.3	ug/L
	Molybdenum	1.37	ug/L
	Nickel	0.589J	ug/L
	Potassium	5220	ug/L
	Silicon	14300	ug/L
	Sodium	30000	ug/L

Vanadium

Zinc

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## **Detectable Results Summary**

Client Sample ID: MW-39B-0916			
Lab Sample ID: 1165574005	Parameter	Result	<u>Units</u>
Dissolved Metals by ICP/MS	Aluminum	12.0	ug/L
-	Antimony	0.0487J	ug/L
	Arsenic	1.01	ug/L
	Barium	63.3	ug/L
	Boron	6.25	ug/L
	Cadmium	0.0381J	ug/L
	Calcium	33100	ug/L
	Chromium	0.441J	ug/L
	Cobalt	15.6	ug/L
	Copper	0.484J	ua/L
	Hardness as CaCO3	138	ma/L
	Iron	11700	ua/L
	Magnesium	13300	ua/L
	Manganese	1190	ug/l
	Molybdenum	0 252	ug/l
	Nickel	22.5	ug/l
	Potassium	3070	ug/L
	Selenium	0.611.1	ug/L
	Silicon	14400	ug/L
	Sodium	21000	ug/L
	Vanadium	0 557 1	ug/L
	Zinc	24.3	ug/L
		24.0	ug/L
Client Sample ID: MW-62A-0916			
Lab Sample ID: 1165574006	Parameter	Result	<u>Units</u>
Dissolved Metals by ICP/MS	Aluminum	9.81	ug/L
	Antimony	0.0385J	ug/L
	Arsenic	15.6	ug/L
	Barium	16.7	ug/L
	Boron	35.3	ug/L
	Calcium	16100	ug/L
	Chromium	0.195J	ug/L
	Cobalt	0.102	ug/L
	Copper	0.251J	ug/L
	Hardness as CaCO3	79.3	mg/L
	Iron	26.4	ug/L
	Magnesium	9500	ug/L
	Manganese	145	ug/L
	Molybdenum	0.503	ug/L
	Nickel	1.68	ug/L
	Potassium	7600	ug/L
	Silicon	15300	ug/L
	Sodium	5800	ug/L
	Sodium Zinc	5800 5.40	ug/L ug/L

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# Results of MW-39A-0916

Client Sample ID: **MW-39A-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165574001 Lab Project ID: 1165574 Collection Date: 09/19/16 10:31 Received Date: 09/20/16 11:23 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	88.0	2.00	0.620	ug/L	2.5		09/22/16 13:50
Antimony	0.0640	0.0500	0.0150	ug/L	2.5		09/22/16 13:50
Arsenic	26.9	0.800	0.200	ug/L	2.5		09/22/16 13:50
Barium	10.4	0.250	0.0400	ug/L	2.5		09/22/16 13:50
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 13:50
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:50
Boron	140	5.00	1.50	ug/L	2.5		09/22/16 13:50
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 13:50
Calcium	9860	50.0	15.0	ug/L	2.5		09/22/16 13:50
Chromium	2.21	0.500	0.150	ug/L	2.5		09/22/16 13:50
Cobalt	0.137	0.0200	0.0100	ug/L	2.5		09/22/16 13:50
Copper	2.38	0.500	0.200	ug/L	2.5		09/22/16 13:50
Iron	179	20.0	6.20	ug/L	2.5		09/22/16 13:50
Lead	0.336	0.100	0.0310	ug/L	2.5		09/22/16 13:50
Magnesium	3660	20.0	6.20	ug/L	2.5		09/22/16 13:50
Manganese	61.9	0.100	0.0310	ug/L	2.5		09/22/16 13:50
Molybdenum	1.23	0.0500	0.0150	ug/L	2.5		09/22/16 13:50
Nickel	1.57	0.620	0.0620	ug/L	2.5		09/22/16 13:50
Potassium	5000	50.0	15.0	ug/L	2.5		09/22/16 13:50
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 13:50
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:50
Sodium	23900	400	124	ug/L	10		09/22/16 14:48
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 13:50
Tin	0.0718 J	0.200	0.0620	ug/L	2.5		09/22/16 13:50
Vanadium	0.888 J	1.00	0.310	ug/L	2.5		09/22/16 13:50
Zinc	5.41	3.10	0.400	ug/L	2.5		09/22/16 13:50

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Results of MW-39A-0916

Client Sample ID: **MW-39A-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165574001 Lab Project ID: 1165574 Collection Date: 09/19/16 10:31 Received Date: 09/20/16 11:23 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Metals by ICP/MS

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 13:50 Container ID: 1165574001-A

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 14:48 Container ID: 1165574001-A Prep Batch: MXX30213 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Prep Batch: MXX30213 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 11/01/2016 5:38:21AM

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Results of <b>MW-39A-0916</b> Client Sample ID: <b>MW-39A-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165574001 Lab Project ID: 1165574	W Event 2	C F M S L	Collection Da Received Da Matrix: Wate Solids (%): ocation:	ate: 09/19/ te: 09/20/ r (Surface,	(16 10:31 16 11:23 Eff., Gro	Facilities Groundwater Quality and Testing Report, Event 2 inv222-00-002016-004 Rev. 0 16-Dec-16         1 sound)       Date Analyzed 10/01/16 01:47         Allowable Limits       Date Analyzed 10/01/16 01:47         Allowable Limits       Date Analyzed 10/01/16 01:47         10/01/16 01:47         10/01/16 01:47         10/01/16 01:47	
Results by Semivolatile Organic Fue Parameter Diesel Range Organics	Image: Construction of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the second of the	Date Analyzed 10/01/16 01:47					
Surrogates 5a Androstane (surr)	109	50-150		%	1		10/01/16 01:47
Batch Information Analytical Batch: XFC12899 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 10/01/16 01:47 Container ID: 1165574001-B			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36403 : SW35200 me: 09/28/ [,] /t./Vol.: 250 Vol: 1 mL	C 16 08:46 ) mL		
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.250 U	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 10/01/16 01:47
Surrogates n-Triacontane-d62 (surr)	109	50-150		%	1		10/01/16 01:47
Batch Information Analytical Batch: XFC12899 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 10/01/16 01:47 Container ID: 1165574001-B			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36403 : SW35200 me: 09/28/ /t./Vol.: 250 Vol: 1 mL	C 16 08:46 ) mL		

Print Date: 11/01/2016 5:38:21AM

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Results of MW-39A-0916							
Client Sample ID: MW-39A-0916 Client Project ID: 105.00148.16001 KW Lab Sample ID: 1165574001 Lab Project ID: 1165574	V Event 2	C R M Si La					
Results by waters Department						Allowable	
Parameter Chloride Fluoride Sulfate	<u>Result Qual</u> 4.55 0.220 1.90	LOQ/CL 0.200 0.200 0.200	<u>DL</u> 0.0620 0.0620 0.0620	<u>Units</u> mg/L mg/L mg/L	<u>DF</u> 1 1 1	Limits	Date Analyzed 09/24/16 22:39 09/24/16 22:39 09/24/16 22:39
Batch Information							
Analytical Batch: WIC5566 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/24/16 22:39 Container ID: 1165574001-E		F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11634 : METHOD ne: 09/23/ 't./Vol.: 10 n Vol: 10 mL	16 16:58 mL		
<u>Parameter</u> Turbidity	<u>Result Qual</u> 1.80	LOQ/CL 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/20/16 17:00
Batch Information Analytical Batch: WAT10742 Analytical Method: SM21 2130B Analyst: KBE Analytical Date/Time: 09/20/16 17:00 Container ID: 1165574001-F							
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 87.3	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/23/16 17:29
Batch Information Analytical Batch: WTI4518 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/23/16 17:29 Container ID: 1165574001-F							
<u>Parameter</u> Total Dissolved Solids	<u>Result</u> Qual 129	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 09/23/16 13:54
Print Date: 11/01/2016 5:38:21AM	00 West Potter Dr	ive Anchorage	, AK 95518			J flaggin	g is activated
	907.562.2343 f 90	1.561.5301 W	ww.us.sgs.co	om		Membe	er of SGS Group

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Results of MW-39A-0916							
Client Sample ID: <b>MW-39A-0916</b> Client Project ID: <b>105.00148.16001 KW</b> Lab Sample ID: 1165574001 Lab Project ID: 1165574	V Event 2	C R M S	ollection Da eceived Dat latrix: Water olids (%): ocation:	tte: 09/19/1 te: 09/20/10 - (Surface, E	6 10:31 6 11:23 Eff., Grc	bund)	
Results by Waters Department							
Batch Information Analytical Batch: STS5216 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/23/16 13:54 Container ID: 1165574001-F							
Parameter Total Suspended Solids	<u>Result Qual</u> 2.34	<u>LOQ/CL</u> 1.06	<u>DL</u> 0.330	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/22/16 17:39
Analytical Batch: STS5217 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/22/16 17:39 Container ID: 1165574001-D							
<u>Parameter</u> pH	<u>Result Qual</u> 8.40	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 17:29
Batch Information Analytical Batch: WTI4513 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 17:29 Container ID: 1165574001-F							
<u>Parameter</u> Nitrate-N Nitrite-N	<u>Result Qual</u> 0.0500 U 0.0500 U	<u>LOQ/CL</u> 0.100 0.100	<u>DL</u> 0.0300 0.0300	<u>Units</u> mg/L mg/L	<u>DF</u> 2 2	<u>Allowable</u> Limits	Date Analyzed 09/20/16 18:31 09/20/16 18:31
Batch Information Analytical Batch: WFI2504 Analytical Method: SM21 4500NO3-F Analyst: KBE Analytical Date/Time: 09/20/16 18:31 Container ID: 1165574001-E							
Print Date: 11/01/2016 5:38:21AM						J flaggin	g is activated

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# Results of MW-39B-0916

Client Sample ID: **MW-39B-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165574002 Lab Project ID: 1165574 Collection Date: 09/19/16 12:42 Received Date: 09/20/16 11:23 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	113	2.00	0.620	ug/L	2.5		09/22/16 14:25
Antimony	0.0647	0.0500	0.0150	ug/L	2.5		09/22/16 14:25
Arsenic	1.66	0.800	0.200	ug/L	2.5		09/22/16 14:25
Barium	65.2	0.250	0.0400	ug/L	2.5		09/22/16 14:25
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 14:25
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 14:25
Boron	6.10	5.00	1.50	ug/L	2.5		09/22/16 14:25
Cadmium	0.0367 J	0.0500	0.0150	ug/L	2.5		09/22/16 14:25
Calcium	34200	50.0	15.0	ug/L	2.5		09/22/16 14:25
Chromium	9.30	0.500	0.150	ug/L	2.5		09/22/16 14:25
Cobalt	14.9	0.0200	0.0100	ug/L	2.5		09/22/16 14:25
Copper	1.01	0.500	0.200	ug/L	2.5		09/22/16 14:25
Iron	11700	20.0	6.20	ug/L	2.5		09/22/16 14:25
Lead	0.0859 J	0.100	0.0310	ug/L	2.5		09/22/16 14:25
Magnesium	14000	20.0	6.20	ug/L	2.5		09/22/16 14:25
Manganese	1270	0.400	0.124	ug/L	10		09/22/16 15:32
Molybdenum	0.550	0.0500	0.0150	ug/L	2.5		09/22/16 14:25
Nickel	27.7	0.620	0.0620	ug/L	2.5		09/22/16 14:25
Potassium	3210	50.0	15.0	ug/L	2.5		09/22/16 14:25
Selenium	0.682 J	1.00	0.310	ug/L	2.5		09/22/16 14:25
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 14:25
Sodium	22400	100	31.0	ug/L	2.5		09/22/16 14:25
Thallium	0.00780 J	0.0200	0.00620	ug/L	2.5		09/22/16 14:25
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 14:25
Vanadium	1.65	1.00	0.310	ug/L	2.5		09/22/16 14:25
Zinc	22.8	3.10	0.400	ug/L	2.5		09/22/16 14:25

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Results of MW-39B-0916

Client Sample ID: **MW-39B-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165574002 Lab Project ID: 1165574 Collection Date: 09/19/16 12:42 Received Date: 09/20/16 11:23 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Metals by ICP/MS

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 14:25 Container ID: 1165574002-A

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 15:32 Container ID: 1165574002-A Prep Batch: MXX30213 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Prep Batch: MXX30213 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 11/01/2016 5:38:21AM

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Results of <b>MW-39B-0916</b> Client Sample ID: <b>MW-39B-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165574002 Lab Project ID: 1165574	W Event 2		Collection Da Received Da Matrix: Wate Solids (%): Location:	ate: 09/19/ ate: 09/20/ er (Surface,	/16 12:42 16 11:23 Eff., Gro	und)	Date Analyzed         10/01/16 01:56         10/01/16 01:56         10/01/16 01:56         10/01/16 01:56         10/01/16 01:56         10/01/16 01:56         10/01/16 01:56
Results by Semivolatile Organic Fuel Parameter Diesel Range Organics	l <b>s</b> <u>Result Qual</u> 0.361 J	<u>LOQ/CL</u> 0.588	<u>DL</u> 0.176	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/01/16 01:56
Surrogates 5a Androstane (surr)	103	50-150		%	1		10/01/16 01:56
Batch Information Analytical Batch: XFC12899 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 10/01/16 01:56 Container ID: 1165574002-B			Prep Batch: Prep Methoc Prep Date/Ti Prep Initial V Prep Extract	XXX36403 I: SW35200 ime: 09/28/ Vt./Vol.: 255 Vol: 1 mL	C 16 08:46 5 mL		
Parameter Residual Range Organics	<u>Result Qual</u> 0.245 U	<u>LOQ/CL</u> 0.490	<u>DL</u> 0.147	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 10/01/16 01:56
Surrogates n-Triacontane-d62 (surr)	99.5	50-150		%	1		10/01/16 01:56
Batch Information Analytical Batch: XFC12899 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 10/01/16 01:56 Container ID: 1165574002-B			Prep Batch: Prep Methoc Prep Date/Ti Prep Initial V Prep Extract	XXX36403 I: SW3520C ime: 09/28/ [,] Vt./Vol.: 255 Vol: 1 mL	C 16 08:46 5 mL		

Print Date: 11/01/2016 5:38:21AM

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			US	AL-FG-GR	222-68-66201	6-004 Rev. 0 16-Dec-16
/ Event 2	Ci Ri M Si Lo	ollection Da eceived Da atrix: Water olids (%): ocation:	ate: 09/19/ te: 09/20/ [/] r (Surface,	16 12:42 16 11:23 Eff., Grou	und)	
					Allowable	
<u>Result Qual</u> 115 0.112 J 9.90	LOQ/CL 2.00 0.200 0.200	<u>DL</u> 0.620 0.0620	<u>Units</u> mg/L mg/L	<u>DF</u> 10 1	Limits	Date Analyzed 10/07/16 00:21 09/24/16 23:01
0.00	0.200	0.0020	ing/L	·		00/2 // 10 20:01
	F F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11648 : METHOD me: 10/06/1 /t./Vol.: 10 n Vol: 10 mL	16 16:32 mL		
	F F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11634 : METHOD me: 09/23/1 /t./Vol.: 10 n Vol: 10 mL	16 16:58 mL		
<u>Result Qual</u> 4.60	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/20/16 17:00
<u>Result Qual</u> 51.7	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/23/16 17:38
Result Qual	LOQ/CL	<u>DL</u>	<u>Units</u>	DF	Allowable Limits	Date Analyzed
					J flagging	g is activated
	Event 2          Result Qual         115         0.112 J         9.90         Result Qual         4.60         Result Qual         4.60         Result Qual         51.7         Quest Potter Dri	Event 2       R         Result Qual 115       LOQ/CL 2.00         0.112 J       0.200         9.90       0.200         Result Qual 4.60       LOQ/CL 0.200         Result Qual 4.60       LOQ/CL 0.200         Result Qual 51.7       LOQ/CL 10.0         Result Qual 51.7       LOQ/CL 10.0         Nest Potter Drive Anchorage	'Event 2       Collection Date Received Date Matrix: Water Solids (%): Location:         Result Qual 115       LOQ/CL DL 0.620         0.112 J       0.200       0.620         9.90       0.200       0.0620         9.90       0.200       0.0620         Prep Batch: Prep Method Prep Date/Tin Prep Initial W Prep Extract       Prep Batch: Prep Method Prep Date/Tin Prep Initial W Prep Extract         Result Qual 4.60       LOQ/CL 0.100       DL 0.100         Result Qual 51.7       LOQ/CL 0.100       DL 0.100         Result Qual 51.7       LOQ/CL 0.100       DL 0.100         Result Qual 51.7       LOQ/CL 0.100       DL 0.100         West Potter Drive Anchorage, AK 95518       D	* Event 2       Collection Date: 09/19/ Received Date: 09/20/ Matrix: Water (Surface, Solids (%): Location:         Result Qual 115       LOQ/CL 2.00       DL 0.620       Units mg/L         0.112 J 9.90       0.200       0.620       mg/L         Prep Batch:       WXX11648 Prep Method:       METHOD Prep Date/Time: 10/06/ Prep Initial WL/Vol.: 10 IL Prep Batch:       WXX11634 Prep Method:         Result Qual 4.60       LOQ/CL       DL Prep Date/Time: 09/23/ Prep Initial WL/Vol.: 10 IL Prep Date/Time: 09/23/ Prep Initial WL/Vol.: 10 IL Prep Extract Vol: 10 mL         Result Qual 5.1.7       LOQ/CL       DL NTU       Units METHOD         Result Qual 5.1.7       LOQ/CL       DL NTU       Units METHOD         Result Qual       LOQ/CL       DL NTU       Units METHOD         Result Qual       LOQ/CL       DL NTU       Units METHOD         Result Qual       LOQ/CL       DL NTU       Units         Result Qual       LOQ/CL       DL NTU       Units         Result Qual       LOQ/CL       DL       Units         NO       NTU       NTU       NTU         Result Qual       LOQ/CL       DL       Units         NO       NTU       NTU       NTU	Event 2       Collection Date: 09/19/16 12:42 Received Date: 09/20/16 11:23 Matrix: Water (Surface, Eff., Grou Solids (%): Location:         Result Qual 115       LOQ/CL 0.200       DL 0.620       Units mg/L       DE 10         0.112 J       0.200       0.620       mg/L       10         0.112 J       0.200       0.0620       mg/L       1         Prep Batch:       WXX11648 Prep Method: METHOD Prep Date/Time: 10/06/16 16:32 Prep Initial WL/Vol:: 10 mL Prep Extract Vol:: 10 mL Prep Extract Vol:: 10 mL         Result Qual 4.60       LOQ/CL 0.200       DL 0.100       Units NTU       DE 1         Result Qual 51.7       LOQ/CL 10.0       DL 0.100       Units NTU       DE 1         Result Qual 51.7       LOQ/CL 0.200       DL 0.100       Units Mg/L       DE 1         Result Qual 51.7       LOQ/CL 0.100       DL Mg/L       Units Mg/L       DE 1         Result Qual 51.7       LOQ/CL 0.100       DL Mg/L       DE         West Potter Drive Anchorage, AK 95518       DL       Units       DE	Event 2       Collection Date: 09/19/16 12:42 Received Date: 09/20/16 11:23 Matrix: Water (Surface, Eff., Ground). Solids (%): Location:         Result Qual 115       LOQ/CL 2.00       DL 0.620       Units 0.620       DE 10       Allowable Limits         9.90       0.200       0.620       mg/L       1       Allowable Limits         Prep Batch: WXX11648 Prep Method: METHOD Prep DateTHOD Prep DateTHOD Prep Batch: WXX11648 Prep Method: METHOD Prep DateTHOD Prep Prep Prep Prep Prep Prep Prep Prep

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Results of MW-39B-0916							
Client Sample ID: <b>MW-39B-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165574002 Lab Project ID: 1165574	V Event 2	C R M Si Lo	ollection Da eceived Da latrix: Water olids (%): ocation:	nte: 09/19/1 te: 09/20/10 · (Surface, E	6 12:42 6 11:23 Eff., Gro	2 bund)	
Results by Waters Department			_				
Parameter Total Dissolved Solids	<u>Result Qual</u> 365	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyze 09/23/16 13:5
Batch Information							
Analytical Batch: STS5216 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/23/16 13:54 Container ID: 1165574002-F							
Parameter Total Suspended Solids	<u>Result Qual</u> 4.00	<u>LOQ/CL</u> 1.03	<u>DL</u> 0.318	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyze 09/22/16 17:3
Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/22/16 17:39 Container ID: 1165574002-D							
Parameter pH	<u>Result Qual</u> 6.20	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyze</u> 09/23/16 17::
Satch Information Analytical Batch: WTI4513 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 17:38 Container ID: 1165574002-F							
Parameter Vitrate-N	<u>Result Qual</u> 0.0500 U	LOQ/CL 0.100	<u>DL</u> 0.0300	<u>Units</u> mg/L	<u>DF</u> 2	<u>Allowable</u> Limits	Date Analyze
nunc-14	0.0000	0.100	0.0300	ing/L	2		00/20/10 10.
nt Date: 11/01/2016 5:38:21AM						J flaggin	g is activated

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# Results of MW-39B-0916

Client Sample ID: **MW-39B-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165574002 Lab Project ID: 1165574 Collection Date: 09/19/16 12:42 Received Date: 09/20/16 11:23 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Waters Department

# **Batch Information**

Analytical Batch: WFI2504 Analytical Method: SM21 4500NO3-F Analyst: KBE Analytical Date/Time: 09/20/16 18:33 Container ID: 1165574002-E

Print Date: 11/01/2016 5:38:21AM

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# Results of MW-62A-0916

Client Sample ID: **MW-62A-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165574003 Lab Project ID: 1165574 Collection Date: 09/19/16 15:03 Received Date: 09/20/16 11:23 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	802	8.00	2.48	ug/L	10		09/22/16 15:35
Antimony	0.0767	0.0500	0.0150	ug/L	2.5		09/22/16 14:28
Arsenic	16.7	0.800	0.200	ug/L	2.5		09/22/16 14:28
Barium	24.2	0.250	0.0400	ug/L	2.5		09/22/16 14:28
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 14:28
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 14:28
Boron	36.3	5.00	1.50	ug/L	2.5		09/22/16 14:28
Cadmium	0.0163 J	0.0500	0.0150	ug/L	2.5		09/22/16 14:28
Calcium	16400	50.0	15.0	ug/L	2.5		09/22/16 14:28
Chromium	48.0	0.500	0.150	ug/L	2.5		09/22/16 14:28
Cobalt	0.950	0.0200	0.0100	ug/L	2.5		09/22/16 14:28
Copper	3.30	0.500	0.200	ug/L	2.5		09/22/16 14:28
Iron	1590	20.0	6.20	ug/L	2.5		09/22/16 14:28
Lead	0.424	0.100	0.0310	ug/L	2.5		09/22/16 14:28
Magnesium	9820	20.0	6.20	ug/L	2.5		09/22/16 14:28
Manganese	181	0.100	0.0310	ug/L	2.5		09/22/16 14:28
Molybdenum	1.70	0.0500	0.0150	ug/L	2.5		09/22/16 14:28
Nickel	22.9	0.620	0.0620	ug/L	2.5		09/22/16 14:28
Potassium	7800	50.0	15.0	ug/L	2.5		09/22/16 14:28
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 14:28
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 14:28
Sodium	5980	100	31.0	ug/L	2.5		09/22/16 14:28
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 14:28
Tin	0.123 J	0.200	0.0620	ug/L	2.5		09/22/16 14:28
Vanadium	1.75	1.00	0.310	ug/L	2.5		09/22/16 14:28
Zinc	15.7	3.10	0.400	ug/L	2.5		09/22/16 14:28

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# Results of MW-62A-0916

Client Sample ID: **MW-62A-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165574003 Lab Project ID: 1165574 Collection Date: 09/19/16 15:03 Received Date: 09/20/16 11:23 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Metals by ICP/MS

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 14:28 Container ID: 1165574003-A

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 15:35 Container ID: 1165574003-A Prep Batch: MXX30213 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Prep Batch: MXX30213 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

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Results of <b>MW-62A-0916</b> Client Sample ID: <b>MW-62A-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165574003 Lab Project ID: 1165574	W Event 2	C F M S L	Collection Da Received Da Iatrix: Wate Solids (%): ocation:	ate: 09/19/ te: 09/20/ [,] r (Surface,	/16 15:03 16 11:23 Eff., Gro	und)	
Results by Semivolatile Organic Fue Parameter Diesel Range Organics	<b>Is</b> <u>Result Qual</u> 0.437 J	<u>LOQ/CL</u> 0.615	<u>DL</u> 0.184	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/01/16 02:35
Surrogates 5a Androstane (surr)	113	50-150		%	1		10/01/16 02:35
Batch Information Analytical Batch: XFC12899 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 10/01/16 02:35 Container ID: 1165574003-B			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36403 : SW3520C me: 09/28/ /t./Vol.: 244 Vol: 1 mL	C 16 08:46 ⊧mL		
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.256 U	<u>LOQ/CL</u> 0.512	<u>DL</u> 0.154	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 10/01/16 02:35
Surrogates n-Triacontane-d62 (surr)	108	50-150		%	1		10/01/16 02:35
Batch Information Analytical Batch: XFC12899 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 10/01/16 02:35 Container ID: 1165574003-B		Prep Batch: XXX36403 Prep Method: SW3520C Prep Date/Time: 09/28/16 08:46 Prep Initial Wt./Vol.: 244 mL Prep Extract Vol: 1 mL					

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SGS				S US	LNG Fa Sampling a AL-FG-GR	cilities Ground nd Testing Re Drected Repoi 222-00-0020	Confidential water Quality port - Event 2 6-004 Rev. 0 16-Dec-16
Results of MW-62A-0916							
Client Sample ID: <b>MW-62A-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165574003 Lab Project ID: 1165574	V Event 2	C R M S L	collection Da teceived Dat latrix: Water olids (%): ocation:	tte: 09/19/ te: 09/20/ ⁻ (Surface,	16 15:03 16 11:23 Eff., Gro	und)	
Results by waters Department							
<u>Parameter</u> Chloride Fluoride Sulfate	<u>Result Qual</u> 5.74 0.134 J 4.18	LOQ/CL 0.200 0.200 0.200	<u>DL</u> 0.0620 0.0620 0.0620	<u>Units</u> mg/L mg/L mg/L	<u>DF</u> 1 1 1	<u>Allowable</u> Limits	Date Analyzed 09/24/16 23:46 09/24/16 23:46 09/24/16 23:46
Batch Information							
Analytical Batch: WIC5566 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 09/24/16 23:46 Container ID: 1165574003-E			Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11634 : METHOD ne: 09/23/1 (t./Vol.: 10 n Vol: 10 mL	16 16:58 mL		
<u>Parameter</u> Turbidity	<u>Result Qual</u> 15.0	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/20/16 17:00
Batch Information Analytical Batch: WAT10742 Analytical Method: SM21 2130B Analyst: KBE Analytical Date/Time: 09/20/16 17:00 Container ID: 1165574003-F							
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 90.5	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/23/16 17:47
Batch Information Analytical Batch: WTI4518 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/23/16 17:47 Container ID: 1165574003-F							
<u>Parameter</u> Total Dissolved Solids	<u>Result Qual</u> 124	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 09/23/16 13:54
Print Date: 11/01/2016 5:38:21AM SGS North America Inc.	00 West Potter Dri 007.562.2343 <b>f</b> 90	ve Anchorage 7.561.5301 w	e, AK 95518 /ww.us.sas.ca	om		J flaggin	g is activated
+						Membe	er of SGS Group

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Results of MW-62A-0916							
Client Sample ID: <b>MW-62A-0916</b> Client Project ID: <b>105.00148.16001 KW</b> Lab Sample ID: 1165574003 Lab Project ID: 1165574	V Event 2	C R M S L	ollection Da eceived Dat latrix: Water olids (%): ocation:	ite: 09/19/1 te: 09/20/10 ·(Surface, E	6 15:03 6 11:23 Eff., Grc	) pund)	
Results by Waters Department							
Batch Information							
Analytical Batch: STS5216 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/23/16 13:54 Container ID: 1165574003-F							
Deremeter	Deput Qual			Lipito	DE	Allowable	Data Analyzad
Total Suspended Solids	110	2.41	<u>DL</u> 0.747	mg/L	<u>DF</u> 1	LIIIIIIS	09/22/16 19:37
Batch Information							
Analytical Batch: STS5218 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/22/16 19:37 Container ID: 1165574003-D							
<u>Parameter</u> pH	<u>Result Qual</u> 8.20	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 17:47
Batch Information							
Analytical Batch: WTI4514 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 17:47 Container ID: 1165574003-F							
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Allowable</u> <u>Limits</u>	Date Analyzed
Nitrate-N	0.0500 U	0.100	0.0300	mg/L	2		09/20/16 18:34
Nitrite-N	0.0500 U	0.100	0.0300	mg/L	2		09/20/16 18:34
Batch Information							
Analytical Batch: WFI2504 Analytical Method: SM21 4500NO3-F Analyst: KBE Analytical Date/Time: 09/20/16 18:34 Container ID: 1165574003-E							
rint Date: 11/01/2016 5:38:21AM						J flaggin	g is activated

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# Results of MW-39A-0916

Client Sample ID: **MW-39A-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165574004 Lab Project ID: 1165574 Collection Date: 09/19/16 10:31 Received Date: 09/20/16 11:23 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Dissolved Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	10.5	2.00	0.620	ug/L	2.5		09/22/16 14:31
Antimony	0.0406 J	0.0500	0.0150	ug/L	2.5		09/22/16 14:31
Arsenic	30.5	0.800	0.200	ug/L	2.5		09/22/16 14:31
Barium	8.76	0.250	0.0400	ug/L	2.5		09/22/16 14:31
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 14:31
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 14:31
Boron	166	5.00	1.50	ug/L	2.5		09/22/16 14:31
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 14:31
Calcium	9680	50.0	15.0	ug/L	2.5		09/22/16 14:31
Chromium	0.299 J	0.500	0.150	ug/L	2.5		09/22/16 14:31
Cobalt	0.0534	0.0200	0.0100	ug/L	2.5		09/22/16 14:31
Copper	0.339 J	0.500	0.200	ug/L	2.5		09/22/16 14:31
Iron	47.7	20.0	6.20	ug/L	2.5		09/22/16 14:31
Lead	0.0423 J	0.100	0.0310	ug/L	2.5		09/22/16 14:31
Magnesium	3710	20.0	6.20	ug/L	2.5		09/22/16 14:31
Manganese	62.3	0.100	0.0310	ug/L	2.5		09/22/16 14:31
Molybdenum	1.37	0.0500	0.0150	ug/L	2.5		09/22/16 14:31
Nickel	0.589 J	0.620	0.0620	ug/L	2.5		09/22/16 14:31
Potassium	5220	50.0	15.0	ug/L	2.5		09/22/16 14:31
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 14:31
Silicon	14300	100	31.0	ug/L	2.5		09/22/16 14:31
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 14:31
Sodium	30000	400	124	ug/L	10		09/22/16 15:23
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 14:31
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 14:31
Vanadium	0.686 J	1.00	0.310	ug/L	2.5		09/22/16 14:31
Zinc	4.61	3.10	0.400	ug/L	2.5		09/22/16 14:31

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Results of MW-39A-0916							
Client Sample ID: <b>MW-39A-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165574004 Lab Project ID: 1165574	V Event 2		Collection D Received Da Matrix: Wate Solids (%): Location:	ate: 09/19/ [;] ate: 09/20/1 er (Surface,	16 10:31  6 11:23 Eff., Grou	und)	
Results by <b>Dissolved Metals by ICP/M</b>	S						
Batch Information							
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 14:31 Container ID: 1165574004-A			Prep Batch: Prep Method Prep Date/T Prep Initial V Prep Extract	MXX30213 d: E200.2 ime: 09/21/1 Vt./Vol.: 50 n t Vol: 10 mL	6 07:23 nL		
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 15:23 Container ID: 1165574004-A			Prep Batch: Prep Methoo Prep Date/T Prep Initial V Prep Extract	MXX30213 d: E200.2 ime: 09/21/1 Vt./Vol.: 50 n t Vol: 10 mL	6 07:23 nL		
<u>Parameter</u> Hardness as CaCO3	<u>Result Qual</u> 39.4	<u>LOQ/CL</u> 1.00	<u>DL</u> 1.00	<u>Units</u> mg/L	<u>DF</u> 2.5	<u>Allowable</u> Limits	Date Analyzed 09/22/16 14:31
Batch Information							
Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 14:31 Container ID: 1165574004-A			Prep Batch: Prep Method Prep Date/T Prep Initial V Prep Extract	MXX30213 d: E200.2 ime: 09/21/1 Vt./Vol.: 50 n t Vol: 10 mL	6 07:23 nL		

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# Results of MW-39B-0916

Client Sample ID: **MW-39B-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165574005 Lab Project ID: 1165574 Collection Date: 09/19/16 12:42 Received Date: 09/20/16 11:23 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	12.0	2.00	0.620	ug/L	2.5		09/22/16 14:34
Antimony	0.0487 J	0.0500	0.0150	ug/L	2.5		09/22/16 14:34
Arsenic	1.01	0.800	0.200	ug/L	2.5		09/22/16 14:34
Barium	63.3	0.250	0.0400	ug/L	2.5		09/22/16 14:34
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 14:34
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 14:34
Boron	6.25	5.00	1.50	ug/L	2.5		09/22/16 14:34
Cadmium	0.0381 J	0.0500	0.0150	ug/L	2.5		09/22/16 14:34
Calcium	33100	50.0	15.0	ug/L	2.5		09/22/16 14:34
Chromium	0.441 J	0.500	0.150	ug/L	2.5		09/22/16 14:34
Cobalt	15.6	0.0200	0.0100	ug/L	2.5		09/22/16 14:34
Copper	0.484 J	0.500	0.200	ug/L	2.5		09/22/16 14:34
Iron	11700	20.0	6.20	ug/L	2.5		09/22/16 14:34
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		09/22/16 14:34
Magnesium	13300	20.0	6.20	ug/L	2.5		09/22/16 14:34
Manganese	1190	0.400	0.124	ug/L	10		09/22/16 15:26
Molybdenum	0.252	0.0500	0.0150	ug/L	2.5		09/22/16 14:34
Nickel	22.5	0.620	0.0620	ug/L	2.5		09/22/16 14:34
Potassium	3070	50.0	15.0	ug/L	2.5		09/22/16 14:34
Selenium	0.611 J	1.00	0.310	ug/L	2.5		09/22/16 14:34
Silicon	14400	100	31.0	ug/L	2.5		09/22/16 14:34
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 14:34
Sodium	21000	100	31.0	ug/L	2.5		09/22/16 14:34
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 14:34
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 14:34
Vanadium	0.557 J	1.00	0.310	ug/L	2.5		09/22/16 14:34
Zinc	24.3	3.10	0.400	ug/L	2.5		09/22/16 14:34

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Results of MW-39B-0916							
Client Sample ID: <b>MW-39B-0916</b> Client Project ID: <b>105.00148.16001 KW</b> Lab Sample ID: 1165574005 Lab Project ID: 1165574	/ Event 2		Collection D Received Da Matrix: Wate Solids (%): Location:	und)			
Results by <b>Dissolved Metals by ICP/M</b>	S		_				
Batch Information							
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 14:34 Container ID: 1165574005-A			Prep Batch: Prep Method Prep Date/T Prep Initial V Prep Extract	MXX30213 d: E200.2 ime: 09/21/1 Nt./Vol.: 50 n t Vol: 10 mL	6 07:23 nL		
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 15:26 Container ID: 1165574005-A			Prep Batch: Prep Method Prep Date/T Prep Initial V Prep Extract	MXX30213 d: E200.2 ime: 09/21/1 Vt./Vol.: 50 n t Vol: 10 mL	6 07:23 nL		
<u>Parameter</u> Hardness as CaCO3	<u>Result Qual</u> 138	<u>LOQ/CL</u> 1.00	<u>DL</u> 1.00	<u>Units</u> mg/L	<u>DF</u> 2.5	<u>Allowable</u> Limits	<u>Date Analyzed</u> 09/22/16 14:34
Batch Information							
Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 14:34 Container ID: 1165574005-A			Prep Batch: Prep Method Prep Date/T Prep Initial V Prep Extract	MXX30213 d: E200.2 ime: 09/21/1 Nt./Vol.: 50 n t Vol: 10 mL	6 07:23 nL		

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# Results of MW-62A-0916

Client Sample ID: MW-62A-0916 Client Project ID: 105.00148.16001 KW Event 2 Lab Sample ID: 1165574006 Lab Project ID: 1165574

Collection Date: 09/19/16 15:03 Received Date: 09/20/16 11:23 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Dissolved Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	9.81	2.00	0.620	ug/L	2.5		09/22/16 14:37
Antimony	0.0385 J	0.0500	0.0150	ug/L	2.5		09/22/16 14:37
Arsenic	15.6	0.800	0.200	ug/L	2.5		09/22/16 14:37
Barium	16.7	0.250	0.0400	ug/L	2.5		09/22/16 14:37
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		09/22/16 14:37
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 14:37
Boron	35.3	5.00	1.50	ug/L	2.5		09/22/16 14:37
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		09/22/16 14:37
Calcium	16100	50.0	15.0	ug/L	2.5		09/22/16 14:37
Chromium	0.195 J	0.500	0.150	ug/L	2.5		09/22/16 14:37
Cobalt	0.102	0.0200	0.0100	ug/L	2.5		09/22/16 14:37
Copper	0.251 J	0.500	0.200	ug/L	2.5		09/22/16 14:37
Iron	26.4	20.0	6.20	ug/L	2.5		09/22/16 14:37
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		09/22/16 14:37
Magnesium	9500	20.0	6.20	ug/L	2.5		09/22/16 14:37
Manganese	145	0.100	0.0310	ug/L	2.5		09/22/16 14:37
Molybdenum	0.503	0.0500	0.0150	ug/L	2.5		09/22/16 14:37
Nickel	1.68	0.620	0.0620	ug/L	2.5		09/22/16 14:37
Potassium	7600	50.0	15.0	ug/L	2.5		09/22/16 14:37
Selenium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 14:37
Silicon	15300	100	31.0	ug/L	2.5		09/22/16 14:37
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 14:37
Sodium	5800	100	31.0	ug/L	2.5		09/22/16 14:37
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		09/22/16 14:37
Tin	0.100 U	0.200	0.0620	ug/L	2.5		09/22/16 14:37
Vanadium	0.500 U	1.00	0.310	ug/L	2.5		09/22/16 14:37
Zinc	5.40	3.10	0.400	ug/L	2.5		09/22/16 14:37
Batch Information							
Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 09/22/16 14:37 Container ID: 1165574006-A		F F F F	Prep Batch: M Prep Method: Prep Date/Tim Prep Initial Wt Prep Extract V	IXX30213 E200.2 e: 09/21/1 /Vol.: 50 n fol: 10 mL	6 07:23 nL		
						Allowable	

<u>Parameter</u> Hardness as CaCO3	<u>Result Qual</u> 79.3	<u>LOQ/CL</u> 1.00	<u>DL</u> 1.00	<u>Units</u> mg/L	<u>DF</u> 2.5	<u>Allowable</u> Limits	Date Analyzed 09/22/16 14:37
Print Date: 11/01/2016 5:38:21AM						J flaggir	ng is activated
SGS North America Inc.	200 West Potter Dri	ve Anchorage	, AK 95518	om			

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# Results of MW-62A-0916

Client Sample ID: **MW-62A-0916** Client Project ID: **105.00148.16001 KW Event 2** Lab Sample ID: 1165574006 Lab Project ID: 1165574 Collection Date: 09/19/16 15:03 Received Date: 09/20/16 11:23 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

# Results by Dissolved Metals by ICP/MS

# **Batch Information**

Analytical Batch: MMS9544 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 09/22/16 14:37 Container ID: 1165574006-A Prep Batch: MXX30213 Prep Method: E200.2 Prep Date/Time: 09/21/16 07:23 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 11/01/2016 5:38:21AM

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Member of SGS Group



# Method Blank

Blank ID: MB for HBN 1743426 [MXX/30213] Blank Lab ID: 1353303 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165574001, 1165574002, 1165574003, 1165574004, 1165574005, 1165574006

Results by 200.8 Low	Level			
<u>Parameter</u>	Results	LOQ/CL	DL	Units
Aluminum	1.00U	2.00	0.620	ug/L
Antimony	0.0250U	0.0500	0.0150	ug/L
Arsenic	0.400U	0.800	0.200	ug/L
Barium	0.125U	0.250	0.0400	ug/L
Beryllium	0.0250U	0.0500	0.0250	ug/L
Bismuth	0.0250U	0.0500	0.0150	ug/L
Boron	2.50U	5.00	1.50	ug/L
Cadmium	0.0250U	0.0500	0.0150	ug/L
Calcium	25.0U	50.0	15.0	ug/L
Chromium	0.250U	0.500	0.150	ug/L
Cobalt	0.0100U	0.0200	0.0100	ug/L
Copper	0.250U	0.500	0.200	ug/L
Iron	10.0U	20.0	6.20	ug/L
Lead	0.0500U	0.100	0.0310	ug/L
Magnesium	10.0U	20.0	6.20	ug/L
Manganese	0.0500U	0.100	0.0310	ug/L
Molybdenum	0.0250U	0.0500	0.0150	ug/L
Nickel	0.310U	0.620	0.0620	ug/L
Potassium	25.0U	50.0	15.0	ug/L
Selenium	0.500U	1.00	0.310	ug/L
Silicon	37.4J	100	31.0	ug/L
Silver	0.0100U	0.0200	0.00620	ug/L
Sodium	50.0U	100	31.0	ug/L
Thallium	0.0100U	0.0200	0.00620	ug/L
Tin	0.100U	0.200	0.0620	ug/L
Vanadium	0.500U	1.00	0.310	ug/L
Zinc	0.942J	3.10	0.400	ug/L

Print Date: 11/01/2016 5:38:57AM

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ank ID: MB for HBN	1743426 [MXX/30213]	Matrix	Water (Surface,	Eff., Ground)	
ank Lab ID: 135330	3				
C for Samples: 65574001, 116557400	02, 1165574003, 1165574004, 116	5574005, 1165574006			
esults by 200.8 Low	Level				
arameter	Results	LOQ/CL	DL	<u>Units</u>	
ch Information					
Analytical Batch: MM Analytical Method: 2 Instrument: Perkin E Analyst: VDL Analytical Date/Time	//S9544 00.8 Low Level Ilmer NexIon P5 : 9/22/2016 1:44:36PM	Prep Bato Prep Met Prep Dato Prep Initia Prep Extr	ch: MXX30213 hod: E200.2 e/Time: 9/21/2016 al Wt./Vol.: 50 mL ract Vol: 10 mL	7:23:01AM	
Analytical Batch: MN Analytical Method: 2 Instrument: Perkin E Analyst: VDL Analytical Date/Time	/IS9550 00.8 Low Level Imer Nexlon P5 : 9/27/2016 7:50:21AM	Prep Bate Prep Met Prep Date Prep Initia Prep Extr	ch: MXX30213 hod: E200.2 e/Time: 9/21/2016 al Wt./Vol.: 50 mL ract Vol: 10 mL	7:23:01AM	

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# Blank Spike Summary

Blank Spike ID: LCS for HBN 1165574 [MXX30213] Blank Spike Lab ID: 1353304 Date Analyzed: 09/22/2016 13:47

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165574001, 1165574002, 1165574003, 1165574004, 1165574005, 1165574006

# Results by 200.8 Low Level

	E	Blank Spike	e (ug/L)	
Parameter	Spike	Result	<u>Rec (%)</u>	<u>CL</u>
Aluminum	50	50.9	102	(85-115)
Antimony	5	5.49	110	(85-115)
Arsenic	25	25.4	102	(85-115)
Barium	25	25.3	101	(85-115)
Beryllium	12.5	13.2	106	(85-115)
Bismuth	12.5	12.9	103	(85-115)
Boron	50	49.3	99	(85-115)
Cadmium	12.5	13.3	106	(85-115)
Calcium	5000	4760	95	(85-115)
Chromium	12.5	12.8	102	(85-115)
Cobalt	12.5	12.6	101	(85-115)
Copper	25	24.7	99	(85-115)
Iron	500	510	102	(85-115)
Lead	5	5.21	104	(85-115)
Magnesium	5000	5120	102	(85-115)
Manganese	50	50.1	100	(85-115)
Molybdenum	12.5	13.2	105	(85-115)
Nickel	12.5	13.1	105	(85-115)
Potassium	5000	4920	98	(85-115)
Selenium	25	25.2	101	(85-115)
Silicon	2500	2720	109	(85-115)
Silver	5	4.85	97	(85-115)
Sodium	5000	5250	105	(85-115)
Thallium	2.5	2.60	104	(85-115)
Tin	12.5	12.9	103	(85-115)
Vanadium	25	25.1	100	(85-115)
Zinc	50	56.5	113	(85-115)

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Prep Batch: MXX30213 Prep Method: E200.2 Prep Date/Time: 09/21/2016 07:23 Spike Init Wt./Vol.: 50 ug/L Extract Vol: 10 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/01/2016 5:38:58AM

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Matrix Spike Summary

Original Sample ID: 1353306 MS Sample ID: 1353307 MS MSD Sample ID: 1353308 MSD Analysis Date: 09/22/2016 13:50 Analysis Date: 09/22/2016 13:53 Analysis Date: 09/22/2016 13:56 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165574001, 1165574002, 1165574003, 1165574004, 1165574005, 1165574006

Results by 200.8 Low Level										
		Ма	trix Spike (	ug/L)	Spik	e Duplicate	e (ug/L)			
<u>Parameter</u> Aluminum	<u>Sample</u> 88.0	<u>Spike</u> 50.0	<u>Result</u> 193	<u>Rec (%)</u> 211 *	<u>Spike</u> 50.0	<u>Result</u> 187	<u>Rec (%)</u> 199 *	<u>CL</u> 70-130	<u>RPD (%)</u> 3.10	<u>RPD CL</u> (< 20 )
Antimony	0.0640	5.00	5.61	111	5.00	5.43	107	70-130	3.20	(< 20)
Arsenic	26.9	25.0	54.1	109	25.0	50.8	96	70-130	6.20	(< 20)
Barium	10.4	25.0	37.9	110	25.0	37.0	106	70-130	2.20	(< 20)
Beryllium	0.0250U	12.5	13	104	12.5	12.6	100	70-130	3.30	(< 20)
Bismuth	0.0250U	12.5	12.5	100	12.5	12.1	97	70-130	3.30	(< 20)
Boron	140	50.0	196	111	50.0	183	87	70-130	6.60	(< 20)
Cadmium	0.0250U	12.5	12.9	103	12.5	12.7	102	70-130	1.50	(< 20)
Calcium	9860	5000	15100	104	5000	14600	95	70-130	3.10	(< 20)
Chromium	2.21	12.5	15.2	104	12.5	14.4	97	70-130	5.40	(< 20)
Cobalt	0.137	12.5	12.8	102	12.5	12.4	98	70-130	3.60	(< 20)
Copper	2.38	25.0	26.9	98	25.0	26.1	95	70-130	2.90	(< 20)
Iron	179	500	704	105	500	677	100	70-130	3.90	(< 20)
Lead	0.336	5.00	5.57	105	5.00	5.36	101	70-130	3.70	(< 20)
Magnesium	3660	5000	9190	111	5000	8950	106	70-130	2.70	(< 20)
Manganese	61.9	50.0	117	111	50.0	110	96	70-130	6.50	(< 20)
Molybdenum	1.23	12.5	15	110	12.5	14.4	105	70-130	4.30	(< 20)
Nickel	1.57	12.5	14.5	103	12.5	13.3	93	70-130	8.70	(< 20)
Potassium	5000	5000	10400	108	5000	10100	101	70-130	3.40	(< 20)
Selenium	0.500U	25.0	23.8	95	25.0	22.6	91	70-130	5.10	(< 20)
Silver	0.0100U	5.00	4.76	95	5.00	4.64	93	70-130	2.70	(< 20)
Sodium	23900	5000	31500	151 *	5000	30100	123	70-130	4.60	(< 20)
Thallium	0.0100U	2.50	2.6	104	2.50	2.49	100	70-130	4.50	(< 20)
Tin	0.0718J	12.5	12.8	102	12.5	12.4	99	70-130	3.10	(< 20)
Vanadium	0.888J	25.0	26	100	25.0	25.7	99	70-130	1.10	(< 20)
Zinc	5.41	50.0	54	97	50.0	53.0	95	70-130	1.90	(< 20)

#### **Batch Information**

Analytical Batch: MMS9544 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer Nexlon P5 Analyst: VDL Analytical Date/Time: 9/22/2016 1:53:17PM Prep Batch: MXX30213 Prep Method: LL Digest for Metals on ICP-MS Prep Date/Time: 9/21/2016 7:23:01AM Prep Initial Wt./Vol.: 50.00mL Prep Extract Vol: 10.00mL

Print Date: 11/01/2016 5:39:00AM

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#### **Bench Spike Summary**

Original Sample ID: 1353306 MS Sample ID: 1353309 BND MSD Sample ID: Analysis Date: 09/22/2016 13:50 Analysis Date: 09/22/2016 13:59 Analysis Date: Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165574001, 1165574002, 1165574003, 1165574004, 1165574005, 1165574006

Results by 200.8 Low L	evel		_							
-		Ma	ıtrix Spike (	(ug/L)	Spik	e Duplicat	e (ug/L)			
<u>Parameter</u> Aluminum	<u>Sample</u> 88.0	<u>Spike</u> 50.0	<u>Result</u> 132	<u>Rec (%)</u> 89	<u>Spike</u>	<u>Result</u>	<u>Rec (%)</u>	<u>CL</u> 70-130	<u>RPD (%)</u>	RPD CL
Sodium	23900	5000	30500	131 *				70-130		
Zinc	5.41	50.0	53.1	95				70-130		
Analytical Batch: MMS Analytical Method: 200 Instrument: Perkin Elm Analyst: VDL Analytical Date/Time: S	9544 0.8 Low Level ler Nexlon P5 9/22/2016 1:59:05	PΜ		Pre Pre Pre Pre	p Batch: I p Method: p Date/Tin p Initial W p Extract V	WXX30213 LL Diges ne: 9/21/2 t./Vol.: 50 Vol: 10.00	3 t for Metals 2016 7:23:0 .00mL mL	on ICP-MS )1AM	3	

Print Date: 11/01/2016 5:39:00AM

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GS	Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16							
Method Blank		<u> </u>						
Blank ID: MB for HBN 1743669 [STS/5216] Blank Lab ID: 1353854 QC for Samples: 1165574001, 1165574002, 1165574003		Matrix: Water (Surface, Eff., Ground)						
Results by SM21 2540C								
Parameter Total Dissolved Solids	<u>Results</u> 5.00U	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L				
Analytical Batch: STS52 Analytical Method: SM2 Instrument: Analyst: KBE Analytical Date/Time: 9//	16 1 2540C 23/2016 1:54:35PM							

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Blank Spike Summary									
Blank Spike ID: LCS for HBN Blank Spike Lab ID: 135385 Date Analyzed: 09/23/2016	N 1165574 [S 5 13:54	STS5216]		Spi [ST Spi Ma	ke Duplica S5216] ke Duplica trix: Water	te ID: LCS te Lab ID: [.] (Surface, I	D for HBN 1 1353856 Eff., Ground	)	
QC for Samples: 1165574	001, 1165574	1002, 1165	574003						
Results by SM21 2540C									
	В	lank Spike	(ma/L)	ç	Spike Duplic	ate (mɑ/l.)			
Parameter	Spike	Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Total Dissolved Solids	330	319	97	330	319	97	(75-125)	0.00	(< 5)
Batch Information									
Analytical Batch: <b>STS5216</b> Analytical Method: <b>SM21 254</b> Instrument: Analyst: <b>KBE</b>	0C								
Print Date: 11/01/2016 5:39:06AM									

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Method Blank Blank ID: MB for HBN 1743679 Blank Lab ID: 1353857 QC for Samples: 116557499101165574992 ) es( I,s bRSM21 2540D Qarame,er To,al S( spenœGSoltœ atch Information vnalRtual Ba,ug: STS5217 vnalRtual Me,goG SM21 2549I Ins,r( men,: vnalRtual Da,e/Ttme: A/22/2910	9 [STS/5217] ) <u>es(I,s</u> 9Б99у 9D 16 5:3A:57OM	Ma LUQ/CL 1E99	,rti:x a,er ₩3(rfa <u>DL</u> 9⊞19	aue0c fftÐ. ro( nGd <u>y nts</u> mP/L	
Blank ID: MB for HBN 1743679 Blank Lab ID: 1353857 QC for Samples: 116557499101165574992 ) es(1,s bR <b>SM21 2540D</b> <u>Qarame,er</u> To,al S( spenœGSoltŒs <b>atch Information</b> vnalRtual Ba,ug: STS5217 vnalRtual Me,goG SM21 2549 Ins,r(men,: vnalRtual Da,e/Ttme: A/22/2910 vnalRtual Da,e/Ttme: A/22/2910	9 [STS/5217] ) <u>es(I.s</u> 9Б99у 9D 16 5:3A:57OM	Ma <u>LUQ/CL</u> 1B9	,rti∶x a,erW3(rfa <u>DL</u> 9⊞19	aue0c fftÐ. ro( nGd <u>v nt,s</u> mP/L	
) es(I,s bRSM21 2540D <u>Qarame,er</u> To,al S( spenœGSoltŒ atch Information vnalRtual Ba,ug: STS5217 vnalRtual Me,goG SM21 25491 Ins,r(men,: vnalRs,: LLO vnalRtual Da,e/Ttme: A/22/2910	) <u>es(I,s</u> 9 <b>1</b> 599y 9D 16 5:3A:57OM	LUQ/CL 1139	<u>DL</u> 9⊞19	<u>y nt,s</u> mP/L	
Qarame,er To,al S( spenQeGSoltQs atch Information vnalRtual Ba,ug: STS5217 vnalRtual Me,goG SM21 2549 Ins,r( men,: vnalRs,: LLO vnalRtual Da,e/Ttme: A/22/291	) <u>es(I,s</u> 95599y 9D 16 5:3A:57OM	<u>LUQ/CL</u> 1199	<u>DL</u> 9巴19	<u>y nt,s</u> mP/L	
atch Information vnalRtual Ba,ug: STS5217 vnalRtual Me,goG SM21 2549 Ins,r(men,: vnalRs,: LLO vnalRtual Da,e/Ttme: A/22/291	9D 16 5:3A:57OM				

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)1	_								
Original Sample ID: 1165576001 Duplicate Sample ID: 1353919			Analysis Date: 09/22/2016 17:39 Matrix: Water (Surface, Eff., Ground)						
QC for Samples:									
<u>Original</u>	<u>Duplicate</u>	Units	<u>RPD (%)</u>	RPD CL					
57.0	58.0	mg/L	1.70	(< 5)					
	Original 57.0	OriginalDuplicate57.058.0	OriginalDuplicateUnits57.058.0mg/L	Original         Duplicate         Units         RPD (%)           57.0         58.0         mg/L         1.70					

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SGS



Print Date: 11/01/2016 5:39:08AM

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	Blank Spike Summary								
	Blank Spike ID: LCS for HBN Blank Spike Lab ID: 1353858 Date Analyzed: 09/22/2016	1165574 [STS5217 17:39	] Spike Duplicate ID: LCSD for HBN 1165574 [STS5217] Spike Duplicate Lab ID: 1353859 Matrix: Water (Surface, Eff., Ground)						
	QC for Samples: 11655740	001, 1165574002							
	Results by SM21 2540D								
		Blank Spik	e (ma/L)		Spike Duplic	ate (mg/L)			
	Parameter	Spike Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
	Total Suspended Solids	50 49.9	100	50	50.1	100	(75v125)	0.40	(- 5)
~	Batch Information								
	Analytical Batc<: <b>STS5217</b> Analytical Met <od: <b="">SM21 2540 Instrument: Analyst: <b>LLP</b></od:>	D							
F	Print Date: 11/01/2016 5:39:09AM								

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GS		LNG Facilities Groundwater Qua Sampling and Testing Report - Even USAL-FG-GRZZZ-00-002016-004 Re 16-Dec					
Method Blank		]					
Blank ID: MB for HBN 174 Blank Lab ID: 1353264	43679 [STS/5912]	Ma0,	t∶ia0prxSW/fa	(pucff⊞.roWn/Gd			
8 Q for SaC mpe: 1165574ss3							
) peW0e bR <b>SM21 2540D</b>		) ——					
<u>OaraCp0pr</u> To0al SWempnOpGSol,Oe	<u>)peW0e</u> sE5ssy	<u>LU8/QL</u> 1Ess	<u>DL</u> sB1s	<u>y n,0e</u> C P/L			
atch Information							
v nalR0( al Ba0(g: STS59 v nalR0( al Mp0goG SM91 lne0WC pn0 v nalRe0 LLO v nalR0( al Da0p/T,Cp: A/S	12 954sD 99/9s16 7:37:9AOM						

S. S Nor@ v Cpr,(a In(E t As7E69B343 f As7E61E3s1 wwwEVeEPeEtoC



Duplicate Sample Summary									
Original Sample ID: 1165576 Duplicate Sample ID: 135373	001 39		Analysis Date: 07/22/2016 17:3M x atriW ( ater fSur,aceE. ,,Œo rdun) R						
CP ,dr Samples:									
11655M9003									
b esults Q/ SM21 2540D									
	Original		L nits	b %D fN R	b %D P4				
Tdtal Suspen) e) Sdli) s	MBC	Ma	<u></u>	9(3)	f< 5 P				
Tutal Suspentier Sullis	NO G		mg/4	300	15 510				
Batch Information									
Analytical Batch: STS5218									
Analytical x ethd): Sx 21 2590	)D								
Analyst: 44%									
%rint Date: 11/01/2016 5:37:12Ax									

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200 ( est %dtter Drive AnchdrageEAK 75518 t 70M562@393 f 70M561@301 www@s@gs@dm

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Blank Spike Summary									
Blank Spike ID: LCS for HBN Blank Spike La3 ID: 1858] 65 Date Analyzed: 09/22/2016	1165574   19:87	[STS521] b	Spike Duplicate ID: LCSD for HBN 1165574 [STS521] b Spike Duplicate La3 ID: 1858] 66 Matrix: Water (Surface Eff. Ground)						
QC for Samples: 11655740	008								
Results 3y SM21 2540D									
		Blank Spike	(mg/L)		Spike Duplic	ate (mg/L)			
Parameter	Spike	Result	Rec (%)	<u>Spike</u>	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Total Suspended Solids	50	50.0	100	50	49.]	100	(75v125)	0.40	(- 5)
Batch Information									
Analytical Batc<: STS5218 Analytical Met <od: 2540<br="" sm21="">Instrument: Analyst: LLP</od:>	D								
Print Date: 11/01/2016 5:89:17AM									
Bater i nonzoro otosti Aw									

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Method Bla	ink							
Blank ID: M Blank Lab II	B for HBN 1743464 9[ ST/15742] D: 1363431	Matrix: [ ater W2( rfaue, c ffE, . ro( nGd						
8 Q for Camp 1106674551	oles: , 1106674552, 1106674553							
) es( Its bR	SM21 2130B							
<u>Oarameter</u> T( rbiGtR	<u>) es( lts</u> 5⊡ 55y	<u>LU8 /QL</u> 51255	<u>DL</u> 5₫55	<u>y nits</u> NTy				
SnalRiual Instr( mer SnalRst: SnalRiual	BatuP: [ ST15742 MetPoG CM21 2135B ht: T(rbiGmeter vBc Date/Time: g/25/2510 6:55:55OM							

Orint Date: 11/51/2510 6:3g:1ASM

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Duplicate Sample Summ	hary								
Original Sample ID: 116 Dcplit a3e Sample ID: 19	5570uu1 59090		Analysis Da3e: u/ 2Mu2Mu16 17:uu x a3riW (a3er fScr,at eE.,,0Eco rdcn) R						
CP ,dr Samples:									
1165570uu1E1165570uu	ME1165570uu9								
b escl3s Qy SM21 2130B									
<u>UAx .</u>	Original	Dcplit a3e	<u>L ni3s</u>	<u>b %D fN R</u>	<u>b%DP4</u>				
TcrQ) i3y	1 <b>ଓ</b> u	1 <b>&amp;</b> u	UTL	uœu	f< Mu R				
Batch Information									
Analy3t al Ba3 h: ( AT1u7 Analy3t al x e3rd) : Sx Mt Ins3cmen3 TcrQ) ime3er Analys3 vB.	'0M M19uB								
%rin3Da3e: 112u12Mu16 5:9/:18A	X								

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Blank Spike Summary				
Blank Spike ID: LCS for H Blank Spike Lab ID: 13534 Date Analyzed: 09/20/20	BN 1165574 132 16 17:00	[WAT1074	12]	
,				Matrix: Water (Surface, Eff., Ground)
QC for Samples: 11655	74001, 116557	74002, 116	5574003	
Posults by SM21 2130B			_	
Results by SWIZT ZTSUB		Blank Snik		
Parameter	Spike	Result	Rec (%)	CL
Turbidity	10	10.0	100	( 90-110 )
Batch Information				
Analytical Batch: WAT1074 Analytical Method: SM21 2 Instrument: Turbidimeter Analyst: KBE	ι2 130Β			
int Date: 11/01/2016 5:39:20AM				
SGS North Americ	ca Inc.	) West Pott	er Drive Anchora	age, AK 95518
	1.90	51.502.234	51 507.001.000	Member of SGS Group

E-755

SGS				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
Blank Spike ID: LCS for HE Blank Spike Lab ID: 13534 Date Analyzed: 09/20/20/	3N 1165574   35 16_17:00	[WAT1074	2]	
Dato / Maly200. 00/20/20	10 11.00			Matrix: Water (Surface, Eff., Ground)
QC for Samples: 11655	74001, 116557	4002, 116	5574003	
Results by SM21 2130B				
		Blank Spike	e (NTU)	
Parameter	Spike	Result	Rec (%)	CL
Turbidity	10	10.0	100	(90-110)
Batch Information				
Analytical Batch: WAT1074 Analytical Method: SM21 2 Instrument: Turbidimeter Analyst: KBE	2 130B			
nt Date: 11/01/2016 5:39:20AM				
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E-756



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## Method Blank

Blank ID: MB for HBN 1744040 (WFI/2504) Blank Lab ID: 1354405 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165574001, 1165574002, 1165574003

_	Results by SM21 4500NO3-F				
	Parameter	Results	LOQ/CL	DL	<u>Units</u>
	Nitrate-N	0.0500U	0.100	0.0300	mg/L
	Nitrite-N	0.0500U	0.100	0.0300	mg/L
	Total Nitrate/Nitrite-N	0.0500U	0.100	0.0300	mg/L

# **Batch Information**

Analytical Batch: WFI2504 Analytical Method: SM21 4500NO3-F Instrument: Astoria segmented flow Analyst: KBE Analytical Date/Time: 9/20/2016 6:26:08PM

Print Date: 11/01/2016 5:39:21AM

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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1165574 [WFI2504] Blank Spike Lab ID: 1354403 Date Analyzed: 09/20/2016 18:24

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165574001, 1165574002, 1165574003

## Results by SM21 4500NO3-F

	E	Blank Spike	(mg/L)
Parameter	Spike	<u>Result</u>	Rec (%)
Nitrate-N	2.5	2.51	100
Nitrite-N	2.5	2.55	102
Total Nitrate/Nitrite-N	5	5.05	101

## **Batch Information**

Analytical Batch: WFI2504 Analytical Method: SM21 4500NO3-F Instrument: Astoria segmented flow Analyst: KBE

Print Date: 11/01/2016 5:39:22AM

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- Matrix Spike Summar	У									
Original Sample ID: 11 MS Sample ID: 13543 MSD Sample ID: 1354 QC for Samples: 1165	65589004 96 MS 4397 MSD 5574001, 116557400	02, 116557	4003		Analysis Analysis Analysis Matrix:	Date: 09 Date: 09 Date: 09 Water (Si	9/20/2016 9/20/2016 9/20/2016 9/20/2016 urface, Eff.	18:41 18:43 18:45 , Ground)	)	
Results by SM21 4500	NO3-F									
		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
<u>'arameter</u> Jitrate-N	<u>Sample</u> 0.661	<u>Spike</u> 2.50	<u>Result</u> 4.3	<u>Rec (%)</u> 146 *	<u>Spike</u> 2.50	<u>Result</u> 4.18	<u>Rec (%)</u> 141 *	<u>CL</u> 70-130	<u>RPD (%)</u> 2.80	<u>RPD CL</u> (< 25 )
Print Date: 11/01/2016 5:39:2	24AM									

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Duplicate Sample S	ummary							
Original Sample ID: Duplicate Sample ID: QC for Samples: 1165574001, 116557	1165487001 1354421 4002	Analysis Date: 09/23/2016 13:07 Matrix: Drinking Water						
Results by SM21 4500-H B								
NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL			
рН	7.40	7.40	pH units	0.00	(< 5)			
	20744							

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Duplicate Sample Summ	nary					
Original Sample ID: 1165 Duplicate Sample ID: 13 QC for Samples: 1165574001, 116557400	5488001 54422 2		Analysis Date: 0 Matrix: Drinking	9/23/2016 17:21 Water		
Results by SM21 4500-H	В					
NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL	
рН	7.20	7.10	pH units	1.40	(< 5)	
Anaiytical Method: SM21 Instrument: Titration Analyst: KBE	4500-H B					

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Blank Spike Summary				
Blank Spike ID: LCS for I Blank Spike Lab ID: 1354 Date Analyzed: 09/23/2	HBN 1165574 [ 4418 016 11:30	[WTI4513]		Matrix: Water (Surface, Eff., Ground)
action samples. The	5574001, 110557	4002		
Doculto by SM21 4500 H	D			
Results by <b>SMZ I 4500-H</b>	DI	ank Sniko (	(nH unite)	
Parameter	Spike	Result	Rec (%)	CL
ъΗ	7	7.03	100	( 99-101 )
3atch Information				
Analyst: KBE				
Analyst: <b>KBE</b>				
Analyst: <b>KBE</b>				
Analyst: <b>KBE</b>				
Analyst: KBE				

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Duplicate Sample Sumr	mary				
Original Sample ID: 116 Duplicate Sample ID: 13	5651001 354465		Analysis Date: 09 Matrix: Water (Si	9/23/2016 22:43 urface, Eff., Groui	nd)
QC for Samples:					
1165574003					
Results by SM21 A500 H	IR				
- Results by SIVI2 1 4500-F					
NAME	<u>Original</u>	Duplicate	<u>Units</u>	<u>RPD (%)</u>	<u>RPD CL</u>
рН	8.40	8.40	pH units	0.00	(< 5)
Potch Information					
Analytical Batch: WTI451 Analytical Method: SM21 Instrument: Titration Analyst: KBE	4 1 4500-Н В				
	esuits by SM21 4500-H B AME Original Duplicate Units RPD (%) RPD CL H 840 8.40 pH units 0.00 (< 5) atch Information Analytical Batch: WT14514 Analytical Method: SM21 4500-H B Instrument: Tritation Analyst: KBE				
Results by SM21 4500-H B           NAME         Original         Duplicate         Units           pH         8.40         8.40         pH ur           Batch Information         Analytical Batch: WTH4514         Analytical Method: SM21 4500-H B         Instrument: Titration           Analytic: KBE         SM21 4500-H B         Instrument: Titration         PH ur					
Drint Date: 44/04/0040 5:00.00	0. h.d.				
mint Date: 11/01/2016 5:39:30/	AIVI				

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SGS				LNG Facilities Groundwater Qualit Sampling and Testing Report - Event USAL-FG-GRZZZ-00-002016-004 Rev 16-Dec-10
Blank Spike Summarv			_	
Blank Spike ID: LCS for HB Blank Spike La] ID: 1b5446 Date Analyzed: 09/8b/801	N 1165574   58 6 12:05	WTI45143	3	Matrix: Water (Surface, Eff., Ground)
QC for Samples: 116557	400b			
Results ] y SM21 4500-H B				
	BI	ank Spike	(pH units)	
Parameter	Spike	<u>Result</u>	<u>Rec (%)</u>	<u>CL</u>
pН	7	7.0b	100	(99-101)
Batch Information				
Analytical Batch: <b>WTI4514</b> Analytical Method: <b>SM21 45</b> Instrument: <b>Titration</b> Analyst: <b>KBE</b>	00-Н В			
rint Date: 11/01/8016 5:b9:b0AM				
SGS North America	a Inc. <b>t</b> 90	West Pott 7.568.8b4	er Drive Anchora b <b>f</b> 907.561.5b01	age, AK 95512 www.us.sgs.com
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Method Blank					
Blank ID: MB for HE Blank ] aL ID: 1b/ 4	BN 1744364 9[ SIT4/152 /b8	Mair	xW[aisr(mur	facs, Eff., Ground)	
QC for map els0: 116/ / 74331, 116/ / 7	433t , 116/ / 7433b				
Rs0uli0 Ly <b>SM21 2</b> 3	320B				
Parap sisr v lkalxixy	<u>Rs0uli0</u> / .33U	<u>  OQTC]</u> 13.3	<u>D]</u> b.13	<u>Unxi0</u> pg∏	
Batch Information v nalyixal BaicA: v nalyixal MsiAod: In0irup sni: Sxraix v naly0i: hBE v nalyixal DaisTSx	SI4/ 15 mMt 1 t bt 3B on o s: 8Tt bTt 316 6:t 5:/ 5PM				

Prxni Dais: 11TB1TE316 / :b8:bt v M

mGm NoriA v p srxca Inc.

t 33 [ s0i Poiisr DrxKs v ncAorags, v h 8/ / 15 t 837./ 6t.t b4b f 837./ 61./ b31 www.u0.0g0.cop

Msp Lsr of mGm Groue



Print Date: 11/01/2016 5:39:32AM

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Blank Spike Summary				
Blank Spike ID: LCS for HE Blank Spike Lab ID: 18545 DaAe y nalzde0: t 9/28/2t 1	3N 1165574 4t 6 13:87	[WTI4513]		
				MaAix: WaAer (Surface, Eff., Groun0)
C for Samples: 116557	74t t 1, 116557	74t t 2, 1165	574t t 8	
ResulAs bz SM21 2320B			_	
Paramo (br	Spiko	Blank Spike	(mQL)	CL
r kalini <i>k</i> r	25t	<u>ResulA</u> 242	<u>97</u>	(35/115)
				(00
atch Information				
y nalzAcal BaAv: WTI4518 y nalzAcal MeAro0: SM21 23 InsAumenA. Titration y nalzsA. KBE	320B			
nADaAe: 11/t 1/2t 16 5:89:88yM				
COO ManAssanta In	2t t	WesAPoA	er Drige y novora	aQe, y K 95513
SGS NorAv ymeric	a Inc. t 9t	17.562.2848	<b>f</b> 9t 7.561.58t ′	1 www.us.sQs.com



Analytical Batch: WIC5566 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Analytical Date/Time: 9/24/2016 4:43:12PM

Prep Method: METHOD Prep Date/Time: 9/23/2016 4:58:00PM Prep Initial Wt./Vol.: 10 mL Prep Extract Vol: 10 mL

Print Date: 11/01/2016 5:39:34AM

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## Blank Spike Summary

Blank Spike ID: LCS for HBN 1165574 [WXX11634] Blank Spike Lab ID: 1354291 Date Analyzed: 09/24/2016 17:05

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165574001, 1165574002, 1165574003

## Results by EPA 300.0

	E	Blank Spike	(mg/L)
Parameter	Spike	<u>Result</u>	<u>Rec (%)</u>
Chloride	5	5.04	101
Fluoride	5	5.19	104
Sulfate	5	5.16	103

## **Batch Information**

Analytical Batch: WIC5566 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Prep Batch: WXX11634 Prep Method: METHOD Prep Date/Time: 09/23/2016 16:58 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 11/01/2016 5:39:35AM

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## Matrix Spike Summary

Original Sample ID: 1354292 MS Sample ID: 1354293 MS MSD Sample ID: 1354294 MSD

QC for Samples: 1165574001, 1165574002, 1165574003

Analysis Date: 09/25/2016 0:08 Analysis Date: 09/25/2016 0:30 Analysis Date: 09/25/2016 1:37 Matrix: Water (Surface, Eff., Ground)

Results by EPA 300.0										
		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
<u>Parameter</u>	Sample	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Chloride	6.57	5.00	11.6	101	5.00	11.7	103	90-110	0.95	(< 15)
Fluoride	0.126J	5.00	4.92	96	5.00	5.06	99	90-110	2.80	(< 15)
Sulfate	0.100U	5.00	5.16	103	5.00	5.29	106	90-110	2.40	(< 15)

## Batch Information

Analytical Batch: WIC5566 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Analytical Date/Time: 9/25/2016 12:30:59AM Prep Batch: WXX11634 Prep Method: EPA 300.0 Extraction Waters/Liquids Prep Date/Time: 9/23/2016 4:58:00PM Prep Initial Wt./Vol.: 10.00mL Prep Extract Vol: 10.00mL

Print Date: 11/01/2016 5:39:36AM

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Method Blank		)					
Blank ID: MB for HBN 1745088 [WXX/11648] Blank Lab ID: 1357605 QC for Samples: 1165574002		Matrix:	Water (Surface,	Eff., Ground)			
Results by EPA 300.	.0						
Parameter Chloride	<u>Results</u> 0.101J	LOQ/CL 0.200	<u>DL</u> 0.0620	<u>Units</u> mg/L			
atch Information	]						
Analytical Batch: W Analytical Method: Instrument: Metrohi Analyst: ACF Analytical Date/Time	VIC5570 EPA 300.0 im 733 DX2 e: 10/6/2016 7:32:03PM	Prep Batc Prep Meth Prep Date Prep Initia Prep Extra	h: WXX11648 nod: METHOD c/Time: 10/6/2016 Il Wt./Vol.: 10 mL act Vol: 10 mL	4:32:00PM			

GS				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
lank Spike Summary				
lank Spike ID: LCS for HBN 1 lank Spike Lab ID: 1357606 bate Analyzed: 10/06/2016 2	165574   1:45	[WXX1164	8]	Matrix: Water (Surface Eff. Ground)
C for Samples: 116557400	2			
Results by <b>EPA 300.0</b>				
, ,		Blank Spike	e (mg/L)	
<u>'arameter</u>	Spike	Result	Rec (%)	CL
hloride	5	5.02	100	(90-110)
atch Information				
Analytical Batch: WIC5570				Prep Batch: WXX11648
Analytical Method: EPA 300.0				Prep Method: METHOD
Instrument: Metrohm 733 DX2				Prep Date/Time: <b>10/06/2016 16:32</b> Spike Init Wt //ol : 5 mg/l = Extract Vol: 10 ml
Analyst. AVE				Dupe Init Wt./Vol.: Extract Vol.
1t Date: 11/01/2016 5:39:39AM				
SGS North America Inc	200 t 90	) West Potte )7.562.2343	er Drive Anchoi <b>f</b> 907.561.530	rage, AK 95518 1 www.us.sgs.com

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Matrix Spike Summary	/		<u> </u>							
Original Sample ID: 133 MS Sample ID: 135760 MSD Sample ID: 1357 QC for Samples: 1165	riginal Sample ID: 1357607 S Sample ID: 1357608 MS SD Sample ID: 1357609 MSD C for Samples: 1165574002 esults by <b>EPA 300.0</b> Mameter Sample Spike ride 12.9 250				Analysis Analysis Analysis Matrix:	s Date: 10 s Date: 10 s Date: 10 Water (St	0/06/2016 0/06/2016 0/06/2016 0/06/2016 urface, Eff.	20:38 21:01 21:23 , Ground)	)	
Results by EPA 300.0										
	0	Ma	trix Spike (	mg/L)	Spik	e Duplicate	e (mg/L)	01		
<u>arameter</u> hloride	<u>Sample</u> 12.9	<u>Spike</u> 250	<u>Result</u> 264	<u>Rec (%)</u> 100	<u>Spike</u> 250	<u>Result</u> 269	<u>Rec (%)</u> 102	<u>CL</u> 90-110	<u>RPD (%)</u> 1.80	<u>RPD C</u> (< 15 )
Batch Information										
Analytical Batch: WICS Analytical Method: EP, Instrument: Metrohm 7 Analyst: ACF Analytical Date/Time:	5570 A 300.0 '33 DX2 10/6/2016 9:01:09	9PM		Prej Prej Prej Prej	D Batch: \ D Method: D Date/Tin D Initial W D Extract \	WXX11648 EPA 300. ne: 10/6/2 t./Vol.: 10. Vol: 10.00	0 Extraction 016 4:32:0 00mL mL	n Waters/L )0PM	iquids	
rint Date: 11/01/2016 5:39:4	1AM									

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Method Blank							
Blank ID: MB for HBN 1744 Blank Lab ID: 1354959	4161 [XXX/36403]	Matrix	x: Water (Surfa	ce, Eff., Ground)			
QC for Samples: 1165574001, 1165574002, 1 ⁻	165574003						
Results by AK102							
Parameter	Results	LOQ/CL	DL	Units			
Diesel Range Organics	0.380J	0.600	0.180	mg/L			
f <b>urrogates</b> 5a Androstane (surr)	104	60-120		%			
Analytical Batch: XFC128 Analytical Method: AK102 Instrument: Agilent 7890E Analyst: NRO Analytical Date/Time: 10/	99 2 3 R 1/2016 12:39:00AM	Prep Ba Prep Me Prep Da Prep Ini Prep Ex	atch: XXX36403 ethod: SW35200 ate/Time: 9/28/20 tial Wt./Vol.: 250 tract Vol: 1 mL	2 016 8:46:51AM 0 mL			

Print Date: 11/01/2016 5:39:42AM

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1165574 [XXX36403] Blank Spike Lab ID: 1354960 Date Analyzed: 10/01/2016 00:48

QC for Samples: 1165574001, 1165574002, 1165574003

Spike Duplicate ID: LCSD for HBN 1165574 [XXX36403] Spike Duplicate Lab ID: 1354961 Matrix: Water (Surface, Eff., Ground)

Results by AK102

		Blank Spike	e (mg/L)	5	Spike Dupli	cate (mg/L)			
Parameter	Spike	Result	<u>Rec (%)</u>	Spike	<u>Result</u>	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Diesel Range Organics	20	20.8	104	20	20.6	103	(75-125)	0.64	(< 20)
Surrogates									
5a Androstane (surr)	0.4	114	114	0.4	115	115	(60-120)	1.00	
Batch Information									
Analytical Batch: XFC12899				Pre	p Batch: X	XX36403			
Analytical Method: AK102				Pre	p Method:	SW3520C			
Instrument: Agilent 7890B R				Pre	p Date/Tim	e: 09/28/201	6 08:46		
Analyst: NRO				Spi	ke Init Wt./\	/ol.: 20 mg/	L Extract Vo	ol: 1 mL	

Print Date: 11/01/2016 5:39:43AM

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GS	Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GR2222-00-002016-004 Rev. 0 16-Dec-16
Method Blank Blank ID: MB for HBN 1744161 [XXX/36403] Blank Lab ID: 1354959 QC for Samples: 1165574001 1165574002 1165574003	Matrix: Water (Surface, Eff., Ground)
Results by <b>AK103</b>	
Parameter         Results           Residual Range Organics         0.250U	<u>LOQ/CL</u> <u>DL</u> <u>Units</u> 0.50000.150mg/L
Surrogates n-Triacontane-d62 (surr) 102	60-120 %
Analytical Batch: XFC12899 Analytical Method: AK103 Instrument: Agilent 7890B R Analyst: NRO Analytical Date/Time: 10/1/2016 12:39:00AM	Prep Batch: XXX36403 Prep Method: SW3520C Prep Date/Time: 9/28/2016 8:46:51AM Prep Initial Wt./Vol.: 250 mL Prep Extract Vol: 1 mL

Print Date: 11/01/2016 5:39:50AM

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

## Blank Spike Summary

Blank Spike ID: LCS for HBN 1165574 [XXX36403] Blank Spike Lab ID: 1354960 Date Analyzed: 10/01/2016 00:48

QC for Samples: 1165574001, 1165574002, 1165574003

Spike Duplicate ID: LCSD for HBN 1165574 [XXX36403] Spike Duplicate Lab ID: 1354961 Matrix: Water (Surface, Eff., Ground)

Results by AK102

		Blank Spike	e (mg/L)	5	Spike Duplic	cate (mg/L)			
<u>Parameter</u>	Spike	<u>Result</u>	<u>Rec (%)</u>	Spike	Result	Rec (%)	CL	<u>RPD (%)</u>	RPD CL
Residual Range Organics	20	20.0	100	20	20.1	100	(60-120)	0.24	(< 20 )
Surrogates									
n-hriacontane-d62 (surr)	0.4	101	101	0.4	102	102	(60-120)	1.00	
Batch Information Analytical BatcT: XFC18977 Analytical MetTod: AK102 Instrument: Agilent R970B N Analyst: ON3				Pre Pre Pre Spil Dup	p BatcT: X p MetTod: p Date/him ke Init Wt./\ be Init Wt./\	<b>XX26402</b> <b>SW2580C</b> e: <b>07/89/801</b> /ol.: 20 mg/l /ol.: 20 mg/L	6 09:46 L Extract Vo	ol: 1 mL : 1 mL	

Print Date: 11/01/2016 5:39:52AM

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# CHAIN OF CUSTODY RECORD



			SGS Enviro	nmenta	I Ser	vices	s Inc	.:											
E-7																			
CLIENT:	SLR Consulting				SGS Ret	ference #	#							L	anar	Ţ	5		Г
CONTACT	I: Jason Gray, SLR PHC	DNE NO: (off.	iice) 264-6965											0	200L	ERIC	10 5 0		
PROJECT: Name	Kenai Wells, Event 2		PROJECT 105.00 No.	148.16001	-	Preserv Used	34	CON.	CONNE	03	100	ener en	euor	$\square$	$\mathbb{N}$	$\left \right\rangle$			T
REPORTS	TO: Jason Gray, SLR email jgr	ay@slrconsult	ing.com		* vo	AMPLE TYPE	Metals	бні	SIE	окво		ete, Nitrite	, Viir		}	$\vdash$			
INVOICE .	TO: Bret Berglund, SLR 2700 Gambell Street Ancho	QUOTE #:	332060 19503		_ z⊢∢-z	COM-16VBI H	(t bevlozei neH - 8048	әләі-мој -	Total Meta	K103 - DK	SST - 0044	I, FI,SO4	, SGT 504 802 910 910 910 910 910 910 910 910 910 910						
LAB NO.	SAMPLE IDENTIFICATION	DATE	TIME	MATRIX	: m a: o	GRAB GRAB GRAB	(dissolved E200.8 - SM21 2:	E1631E (total)	E200.8	AK102/A	gs ISM2	E300.0 - C	2W2149 2W5130						
949	MW-39A-0916	09/19/16	10:31	GW	7		×		-	×	×	××		0	X	-			T
24	MW-39B-0916	09/19/16	12:42	GW	7		×		-	×	×	××		Č	X	-			Т
(2) A-F	MW-62A-0916	09/19/16	15:03	GW	7		×		-	×	×	××		6	4				
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Collected/K	allinguished by (44)	Date D J J J I I	Time Adv. DD	Received By:				Shipp	ing Cal	rier:				0	Samples	Received	1 Cold?	YES NO	
	Man Inal	1 with	NOIN					Shipp	ing Tic	ket No:				-	Tempera	ature °C	3	91	USA
Kelinquisher	d By: (2)	Date	Time	Received By:				Speci EDD:	al Deliv	rerable	Req:	Level II			Chain of	1000	y Seal:	(Circle)	L-FG-0
Relinquishe	d By: (3)	Date	Time	Received By:				Requ	ested T	urnaro	IT pun	me and-	or Special	I Instru	nction	S:		DOEN	<b>SRZZ</b>
Relinquisher	d By: (4)	Date	Time    :23	Received For	Laborato	ry By:		Total a As, Ba,	nd Diss Be, Ca,	Cd, Cr, (	tals: Do, Cu,	Fe, Pb, M	g, Mn, Mo, N	Va, Ni, S	sp' Se'.	П, V, Zr	-		2-68-662016-0
200 W. P 3180 Peg 24 Jo L 2 200 Busi	otter Drive Anchorage, AK 99518 Tel: (90 ier Road Fairbanks, AK 99701 Tel: (907) 4 iness Drive Willmington, NC 28405 Tel: (91	7) 562-2343 Fax: 174-8656 Fax: (9( 10) 350-1903 Fax	: (907) 561-5301 07) 474-9685 :: (910) 350-1557	10														16-Dec-16	504 Rev. 0

documents\forms\approved\F016_SGS_COC_electronic.xls rev.01 01/13/2006

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2

AIRPORT OF	00/00/00		Confidential LNG Facilities Groundwater Quality
SHIPPER'S NAME ADDRESS & P	09/20/16 08:4		808 / 1433ampling and Lesting Report- EvenFush
SLR JASON GRAY	TIONE	H7752	AIR WAYBILL (AIR CONSIGNMENT NOTE)
KENAI CONSIGNEE'S NAME, ADDRESS	AK 99611 & PHONE	9072238578 CONSIGNEE'S ACCOUNT NUMBE	It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carriage SUBJECT TO THE CONDITIONS OF CONTRACT AS LISTED IN THE COMPANIES TARIFFS. THE SHIPPER'S ATTENTION IS DRAWN TO THE NOTICE CONCERNING CARRIERS' LIMITATION OF LIABILITY. Shipper may increase such limitation of liability by declaring a higher value for carriage and paying a supplemental charce if required
SGS LABS			
200 WEST POTTER R ANCHORAGE	RD AK 99518	9075622343	Received in Good Condition Place Dete TO EXPEDITE MOVEMENT, SHIPMENT MAY BE DIVERTED TO MOTOR OR OTHER CARRIER AS PER TARIFF RULE FUN FERS SHIPPER GIVES OTHER INSTRUCTION HERECON
ISSUING CARRIER'S AGENT NAM	E, CITY & PHONE		ALSO NOTIFY NAME & ADDRESS
AGENT'S IATA CODE	ACCOUNT	NO.	ACCOUNTING INFORMATION 7147795
AIRPORT OF DEPARTURE Kenai	Declared Va \$0.0	lue Insured Amount 00 \$ 0.00	Acc#: H7752 SLR INTERNATIONAL CORP.
TO BY FIRST	TO TO	BY BY	сомментs Rush depts 829 arvs 9:57am ро 105.00148.16001
AIRPORT OF DESTINATION Anchorage	505 14¥261418504⊡ 14¥261418504⊡ 24¥25		10:25 0-20-46
No. Of Pleces Weight Ib C	ommodity Chargeabl	e Weight Rate/Charge	Total Nature and Quantity of Goods
1 30			\$54.59
\$54.59	COLLECT	AMOUNT	CHARGES AND DESCRIPTION
\$0.00			
\$3.41			IIII II XX-DAA CIDA-MEDAA MANT IKKA, IFAA-III III
\$0.00	ARGES DUE AGENT		HAZMAT No
\$0.00	RGES DUE CARRIER	Shipper certifies that t COMPANIES TARIFF	he particulars on the face hereof are correct, agrees to the CONDITIONS AS LISTED IN THE S, accepts that carrier's liability is limited as stated in the companies to the contemport
\$58.00	TOTAL COLLEC	unless a higher value part of the consignmen by air according to app	for carriage is declared on the face hereof subject to an additional charge and that insofar as any nt contains restricted articles, such part is described by name and is in proper condition for carriage plicable national governmental regulations, and for international shipments the current international plicable national governmental regulations, and for international shipments the current international shipments.
ATION NUMBERS CHORAGE - (907) 243-2761 IIAK - (907) 757-5472 RROW - (907) 852-5300 THEL - (907) 553-3825 ADHORSE - (907) 559-5222	FAIRBANKS - (907) 450-725 GALENA - (907) 656-1875 KOTZEBUE - (907) 442-302 NOME - (907) 443-7595 ST. MARYS - (907) 4438-224 UNALAKLEET - (907) 624-33	Air Transport Associat	ion's Restricted Articles Regulations.
mileo at 08:44:53 on 9/20/2016	at ENA-FRTMGR 10.10	06.2.15 Signature	

Consignee Copy

	LNG Facilities Sampling and Te USAL-FG-GRZZZ-0	Confidenti s Groundwater Quali sting Report - Event 00-002016-004 Rev. 16-Dec-1
Ale City 8421 Flamingo	rt Expeditors Inc. Corrected Re wide Delivery • 440-3351 Drive • Anchorage, Alast	eport - Revision 1 ca 99502
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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0

16-Dec-16

		1:	1655	74		1 1 6	5 5 5	7 4	
Review Criteria	Y/N	(yes/nc	)	Ex	ceptions N	oted be	low		
Were Custody Seals intact? Note # & COC accompanied s	location	Y		exemption per	mitted if sam 1F-1B	<mark>pler hand</mark>	carri	es/delivers.	
**exemption perm	itted if chi	lled & co	ollected <8	hrs ago or chlling n	ot required (i	.e., waste	, oil)		
	Ī	Y	Cooler ID:	1	@	3.9	°C	Therm ID:	D20
	ĺ	Y	Cooler ID:		@		°C	Therm ID:	
Temperature blank compliant* (i.e., 0-6 °C a	after CF)?	Υ	Cooler ID:		@		°C	Therm ID:	
		Y	Cooler ID:		@		°C	Therm ID:	
		Y	Cooler ID:		@		°C	Therm ID:	
*If >6°C, were samples collected <8 hou	irs ago?	Y							
If <0°C, were sample containers	ice free?	Y							
If samples received <u>without</u> a temperature blank, the "cooler temperat be documented in lieu of the temperature blank & " <b>COOLER TEMP</b> " wil noted to the right. In cases where neither a temp blank nor cooler tem obtained, note "ambient" or "chilled".	ure" will ll be ip can be								
Note: Identify containers received at non-compliant temperature . Use FS-0029 if more space is needed.	e form								
	F	N	ote: Refer t	to form F-083 "Sam	nple Guide" fo	or hold tin	nes.		
Were samples received within ho	old time?	Y							
Do samples <b>match COC</b> ** (i.e.,sample IDs,dates/times co	Y								
**Note: If times differ <1hr, record details & login per COC.									
Were analyses requested unam	biguous?	Y							
				***Exemption	permitted fo	r metals (e	e.g,20	0.8/6020A).	
Were proper containers (type/mass/volume/preservative*	**)used?	Y							
IF APPLICABLE									
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with	samples?	Y							
Were all VOA vials free of headspace (i.e., bubbles	≤ 6mm)?	Y							
Were all soil VOAs field extracted with Mee	OH+BFB?	Y							
Note to Client: Any "no" answer above indicates	s non-com	pliance v	with standa	ard procedures and	l may impact	data qual	ity.		
Addit	ional no	tes (if	applicabl	le):					



Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

## Laboratory Report of Analysis

To: SLR Alaska-Anchorage 2700 Gambell St Suite 200 Anchorage, AK 99503 (907)222-1112

## Report Number: 1165595

Client Project: 105.00148.16001 KW Event 2

Dear Jason Gray,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Justin Nelson

16:21:14 -08'00'

2016.09.26

Sincerely, SGS North America Inc.

> SGS North America Inc. Environmental Services – Alaska Divis Project Manager

Justin Nelson Project Manager Justin.Nelson@sgs.com Date

Print Date: 09/26/2016 2:58:19PM

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Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

**Case Narrative** 

SGS Client: **SLR Alaska-Anchorage** SGS Project: **1165595** Project Name/Site: **105.00148.16001 KW Event 2** Project Contact: **Jason Gray** 

Refer to sample receipt form for information on sample condition.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

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## Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <<u>http://www.sgs.com/en/Terms-and-Conditions.aspx></u>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

	*	The analyte has exceeded allowable regulatory or control limits.
	!	Surrogate out of control limits.
	В	Indicates the analyte is found in a blank associated with the sample.
	CCV/CVA/CVB	Continuing Calibration Verification
	CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
	CL	Control Limit
	D	The analyte concentration is the result of a dilution.
	DF	Dilution Factor
	DL	Detection Limit (i.e., maximum method detection limit)
	E	The analyte result is above the calibrated range.
	F	Indicates value that is greater than or equal to the DL
	GT	Greater Than
	IB	Instrument Blank
	ICV	Initial Calibration Verification
	J	The quantitation is an estimation.
	JL	The analyte was positively identified, but the quantitation is a low estimation.
	LCS(D)	Laboratory Control Spike (Duplicate)
	LOD	Limit of Detection (i.e., 1/2 of the LOQ)
	LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
	LT	Less Than
	Μ	A matrix effect was present.
	MB	Method Blank
	MS(D)	Matrix Spike (Duplicate)
	ND	Indicates the analyte is not detected.
	Q	QC parameter out of acceptance range.
	R	Rejected
	RPD	Relative Percent Difference
	U	Indicates the analyte was analyzed for but not detected.
Note:	Sample summaries which i All DRO/RRO analyses are	nclude a result for "Total Solids" have already been adjusted for moisture content. e integrated per SOP.

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	5	Sample Summary		
<u>Client Sample ID</u> APT-1-0916 APT-3-0916 APT-9-0916	<u>Lab Sample ID</u> 1165595001 1165595002 1165595003	<u>Collected</u> 09/20/2016 09/20/2016 09/20/2016	Received 09/20/2016 09/20/2016 09/20/2016	<u>Matrix</u> Water (Surface, Eff., Ground) Water (Surface, Eff., Ground) Water (Surface, Eff., Ground)
<u>Method</u> SM21 9222D	<u>Method Des</u> Fecal Colifo	<u>cription</u> rm (MF)		

Print Date: 09/26/2016 2:58:23PM

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SGS				Sa USA	LNG Fa ampling a L-FG-GR	ncilities Ground Ind Testing Re RZZZ-00-00201	Confidential water Quality port - Event 2 l6-004 Rev. 0 16-Dec-16
Client Sample ID: APT-1-0916 Client Project ID: 105.00148.16001	KW Event 2	C	ollection D eceived Da	ate: 09/20/1 ate: 09/20/1	6 13:00 6 16:58		
Lab Sample ID: 1165595001 Lab Project ID: 1165595		M S Lo	atrix: Wate olids (%): ocation:	er (Surface, E	Eff., Gro	und)	
Results by Microbiology Laborator	у		_				
<u>Parameter</u> Fecal Coliform	<u>Result Qual</u> 1.64 U	<u>LOQ/CL</u> 1.64	<u>DL</u> 1.64	<u>Units</u> col/100m	<u>DF</u> IL 1	<u>Allowable</u> Limits	Date Analyzed 09/20/16 18:14
Batch Information Analytical Batch: BTF15118 Analytical Method: SM21 9222D Analyst: K.W Analytical Date/Time: 09/20/16 18:14 Container ID: 1165595001-A							

Print Date: 09/26/2016 2:58:25PM

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<b>SGS</b>				LNG Fa Sampling a USAL-FG-GR	cilities Ground nd Testing Re ZZZ-00-00201	Confidential water Quality port - Event 2 I6-004 Rev. 0 16-Dec-16
Client Sample ID: <b>APT-3-0916</b> Client Project ID: <b>105.00148.16001 K</b> Lab Sample ID: 1165595002 Lab Project ID: 1165595	W Event 2	Ca Ri M Sa Lo	ollection D eceived Da atrix: Wate olids (%): ocation:	ate: 09/20/16 13:00 ate: 09/20/16 16:58 er (Surface, Eff., Gro	und)	
Parameter Fecal Coliform	<u>Result Qual</u> 1.64 U	<u>LOQ/CL</u> 1.64	<u>DL</u> 1.64	<u>Units</u> DF col/100mL 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 09/20/16 18:14
Analytical Batch: BTF15118 Analytical Method: SM21 9222D Analyst: K.W Analytical Date/Time: 09/20/16 18:14 Container ID: 1165595002-A						

Print Date: 09/26/2016 2:58:25PM

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SGS				LNG I Sampling USAL-FG-0	Facilities Ground and Testing Re GRZZZ-00-0020	Confidential dwater Quality port - Event 2 16-004 Rev. 0 16-Dec-16
Results of APT-9-0916						
Client Sample ID: <b>APT-9-0916</b> Client Project ID: <b>105.00148.16001 KV</b> Lab Sample ID: 1165595003 Lab Project ID: 1165595	V Event 2	C R M Si La	ollection D eceived Da atrix: Wate olids (%): ocation:	ate: 09/20/16 13:0 ate: 09/20/16 16:5 er (Surface, Eff., Gr	i0 8 round)	
Results by Microbiology Laboratory			_			
Parameter Fecal Coliform	<u>Result Qual</u> 1.64 U	<u>LOQ/CL</u> 1.64	<u>DL</u> 1.64	<u>Units</u> DF col/100mL 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/20/16 18:14
Analytical Batch: BTF15118 Analytical Method: SM21 9222D Analyst: K.W Analytical Date/Time: 09/20/16 18:14 Container ID: 1165595003-A						

Print Date: 09/26/2016 2:58:25PM

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SGS		L	Sa USA	Confidential LNG Facilities Groundwater Quality ampling and Testing Report - Event 2 L-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Method Blank				
Blank ID: MB for HBN Blank Lab ID: 135371 QC for Samples: 1165595001, 11655950	1743548 [BTF/15118] 1 02, 1165595003	Matri	x: Water (Surfa	ace, Eff., Ground)
Results by SM21 9222	2D			
Parameter Fecal Coliform	<u>Results</u> 1.00U	<u>LOQ/CL</u> 1.00	<u>DL</u> 1.00	<u>Units</u> col/100mL
Batch Information				
Analytical Batch: BT Analytical Method: S Instrument: Analyst: K.W Analytical Date/Time	F15118 M21 9222D : 9/20/2016 6:14:00PM			

Print Date: 09/26/2016 2:58:27PM

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## CHAIN OF CUSTODY RECORD

# SGS Environmental Services Inc.



SCLIENT:	SLR Consulting				SGS Referer	1ce #:				╞	0000	7		F
CONTACT	F: Jason Gray, SLR PH	ONE NO: (of	fice) 264-6965								COOI FR	 5  ⊆	ï	
PROJECT: Name	Kenai Wells, Event 2		PROJECT 105.00 No.	)148.16001	Preser	of sterv				$\left  \right\rangle$			K	
REPORTS	TO: Jason Gray, SLR email jg	Iray@slrconsu	lting.com		# SAMPL TYPE c	Щ	$\vdash$	-		-	╞	$\vdash$		_
INVOICE	TO: Bret Berglund, SLR	QUOTE #:	332060		A + N COMF	D - Fecal								
	2700 Gambell Street Anch	In Development	99503		- z w	ottu 1					· · · · · · · · · · · · · · · · · · ·			
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13180 Peg	otter Drive Anchorage, AK 99518 Tel: (90 ter Road Fairbanks, AK 99701 Tel: (907) ²	07) 562-2343 Fax: 474-8656 Fax: (90	(907) 561-5301 17) 474-9685										Rev. 0 Dec-16	dentia Quality
5500 Bue	viness Drive Wilmington, NC 28405 Tel: (9	10) 350-1903 Fax	: (910) 350-1557										5	 /

documents\forms\approved\F016_SGS_COC_electronic.xls rev.01 01/13/2006

AIRPORT OF DEPARTURE ENA 09/20/16 13:58 09	5166	Confidential LNG Facilities Groundwater Quality 808 7143895 bing and Testing Peport Event Fret
SHIPPER'S NAME, ADDRESS & PHONE SHIPPER	S ACCOUNT NUMBER H7752	NOT AIR WAYBILL USAL-FG-G ZZZ-00-002016-004 Rev. 0 4700 Old International Argent Road Anchorage Alaska 98502
KENAI         AK         99611         90           CONSIGNEE'S NAME, ADDRESS & PHONE         CONSIGNE	072238578 E'S ACCOUNT NUMBER	(AIR CONSIGNMENT NOTE) A L A S X A Provide the second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second second seco
SGS LABS 200 WEST POTTER RD ANCHORAGE AK 99518 90	75615301	Received in Good Condition Place
ISSUING CARRIER'S AGENT NAME, CITY & PHONE		ALSO NOTIFY NAME & ADDRESS
AGENT'S IATA CODE ACCOUNT NO.	Insured Amount	ACCOUNTING INFORMATION 7148041 ACC#: H7752 SLR INTERNATIONAL CORP.
ROUTING AND DESTINATION     \$ 0.00       ROUTING AND DESTINATION     EXT       TO     BY FIRST       AIRPORT OF DESTINATION	\$ 0.00	COMMENTS
Anchorage	PUGHT/DATE	
Rcp Weight Ib & Commodity & Chargeable Weight B	Rate/Charge	Total Nature and Quantity of Goods
		\$38.59
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TOTAL OTHER CHARGES DUE CARRIER \$0.00 ITOTAL PREPAID \$41.00 TATION NUMBERS	Shipper certifies that the COMPANIES TARIFFS, unless a higher value for part of the consignment by air according to applic Air Transport Association	particulars on the face hereof are correct, agrees to the CONDITIONS AS LISTED IN THE accepts that carrier's liability is limited as stated in the companies tariffs and accepts such value carriage is declared on the face hereof subject to an additional charge and that insofar as any contains restricted articles, such part is described by name and is in proper condition for carriage able national governmental regulations, and for international shipments, the current International r's Restricted Articles Regulations.
IA HON NUMBERS         FAIRBANKS - (907) 450-7250           NICHORAGE - (907) 243-7261         GALENA - (907) 554-572           NIAK - (907) 675-4572         KOTZEBUE - (907) 443-3020           ARROW - (907) 852-5300         NOME - (907) 453-595           ETHEL - (907) 543-3825         ST. MARYS - (907) 438-2247           EADHORSE - (907) 659-9222         UNALAKLEET - (907) 624-3595	Paid By Shipper Printed Name and Title	
Printed at 14:02:26 on 9/20/2016 at ENA-FRT1 10.106.2.2	Signature	

Consignee Copy

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Ale	rt Expeditors Inc.	#36880
Cityv 8421 Flamingo	vide Delivery • 440-3351 Drive • Anchorage, Alask	a 99502
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Shipped Signature

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Review Criteria	Y/N (yes	(no)	Ex	centions N	loted be	Now		
	1111111		exemption per	mitted if sam	pler hand	carrie	es/delivers.	
Were Custody Seals intact? Note # {	& location Y	<mark>ا ل</mark>		1-F, 1-B	3			
COC accompanied	samples? Y	il –						
Y **exemption perm	nitted if chilled 8	collected <	<8hrs ago or chlling n	ot required (	i.e., waste	, oil)		
	Y	Cooler IC	<mark>):</mark> 1	@	5.1	°C	Therm ID:	D10
		Cooler I	<mark>):</mark>	@		°C	Therm ID:	
Temperature blank compliant* (i.e., 0-6 °C	after CF)?	Cooler IC	<mark>):</mark>	@		°C	Therm ID:	
		Cooler IC	<mark>):</mark>	@		°C	Therm ID:	
		Cooler IC	<mark>):</mark>	@		°C	Therm ID:	
*If >6°C, were samples collected <8 ho	urs ago?	j — — —				-		
		[						
If <0°C, were sample containers	ice free?	ļ						
If samples received <u>without</u> a temperature blank, the "cooler temperat be documented in lieu of the temperature blank & " <b>COOLER TEMP</b> " wi noted to the right. In cases where neither a temp blank nor cooler ten obtained, note "ambient" or "chilled".	ture" will ill be np can be							
Note: Identify containers received at non-compliant temperature . Us FS-0029 if more space is needed.	e form							
		Note: Refe	r to form F-083 "Sam	nple Guide" f	<mark>or hold tin</mark>	nes.		
Were samples received within h	old time?							
Do samples match COC** (i.e.,sample IDs,dates/times or	ollected)? Y							
**Note: If times differ <1hr, record details & login	per COC.	ľ						
Were analyses requested unam	ibiguous? Y							
			***Exemption	permitted fo	o <mark>r metals (</mark> e	e.g,20	0.8/6020A).	
Were proper containers (type/mass/volume/preservative*	***)used? Y							
IF APPLICABLE	P	i i						
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with	samples?	Î						
Were all VOA vials free of headspace (i.e., bubbles	, <mark>≤ 6mm)?</mark>							
Were all soil VOAs field extracted with Me	OH+BFB?							
Note to Client: Any "no" answer above indicate	s non-complian	c <mark>e with stan</mark>	idard procedures and	d may impact	data quali	ity.		
Addi	tional notes (	if applica	ble):					



### **Sample Containers and Preservatives**

<u>Container Id</u>	<u>Preservative</u>	<u>Container</u> Condition	<u>Container Id</u>	<u>Preservative</u>	<u>Container</u> Condition
1165595001-A	Na2S2O3 for Chlorine Redu	ОК			
1165595002-A	Na2S2O3 for Chlorine Redu	ОК			
1165595003-A	Na2S2O3 for Chlorine Redu	ОК			

### Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

- OK The container was received at an acceptable pH for the analysis requested.
- BU The container was received with headspace greater than 6mm.
- DM- The container was received damaged.
- FR- The container was received frozen and not usable for Bacteria or BOD analyses.
- PA The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.
- PH The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

9/20/2016



### Laboratory Report of Analysis

To: SLR Alaska-Anchorage 2700 Gambell St Suite 200 Anchorage, AK 99503 (907)222-1112

### Report Number: 1165622

Client Project: Kenai Wells Event 2

Dear Jason Gray,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely, SGS North America Inc	SGS North America Inc. Environmental Services - Alaska Division Project Manager	Justin Nelson 2016.10.14 17:36:49 -08'00'	
Justin Nelson	Date		
Justin Nelson Project Manager Justin.Nelson@sgs.com	Date		

Print Date: 10/14/2016 5:14:57PM

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518 t 907.562.2343 f 907.561.5301 www.us.sgs.com



**Case Narrative** 

SGS Client: SLR Alaska-Anchorage SGS Project: 1165622 Project Name/Site: Kenai Wells Event 2 Project Contact: Jason Gray

Refer to sample receipt form for information on sample condition.

### APT-1-0916 (1165622001) PS

Chlorophyll a was analyzed by ALS of Kelso, WA.

8270D SIM - Pesticide LCS/LCSD recovery for endosulfan I (50.2%, 56.2%) does not meet QC criteria. Sample was re-extracted outside of hold time with the LCS/LCSD within QC criteria. Sample results are comparable. 8270D SIM - Pesticide surrogate recovery for 2-fluorobiphenyl (51.7%) does not meet QC criteria. Sample was re-extracted outside of hold time with 2-fluorobiphenyl within QC criteria. Sample results are comparable.

### APT-9-0916 (1165622004) PS

8270D SIM - Pesticide LCS/LCSD recovery for endosulfan I (50.2%, 56.2%) does not meet QC criteria. Sample was re-extracted outside of hold time with the LCS/LCSD within QC criteria. Sample results are comparable.

### APT-3-0916 (1165622005) PS

8270D SIM - Pesticide LCS/LCSD recovery for endosulfan I (50.2%, 56.2%) does not meet QC criteria. Sample was re-extracted outside of hold time with the LCS/LCSD within QC criteria. Sample results are comparable. 8270D SIM - Pesticide surrogate recovery for terphenyl-d14 (20.2%) and 2-fluorobiphenyl (47.3%) does not meet QC criteria. Sample was re-extracted outside of hold time with terphenyl-d14 and 2-fluorobiphenyl within QC criteria. Sample results are comparable.

### APT-1-0916 MS (1165622002) BMS

8270D SIM - Pesticide LCS/LCSD recovery for endosulfan I (50.2%, 56.2%) does not meet QC criteria. Sample was re-extracted outside of hold time with the LCS/LCSD within QC criteria. Sample results are comparable. 300.0 - Anions - BMS recovery for chloride is outside of QC criteria (83%). Refer to LCS for accuracy requirements. 200.8LL - Metals BMS recoveries for aluminum (419%), calcium (68.1%), and zinc (49.3%) do not meet QC criteria. The sample concentration is 4 times greater than the spike level.

### APT-1-0916 MS (1165622011) BMS

200.8LL - Metals BMS recovery for calcium (57.2%) does not meet QC criteria. The sample concentration is 4 times greater than the spike level.

200.8LL - Metals BMS recovery for aluminum (136%) does not meet QC criteria. Post digestion spike was successful. APT-1-0916 MSD (1165622003) BMSD

8270D SIM - Pesticide LCS/LCSD recovery for endosulfan I (50.2%, 56.2%) does not meet QC criteria. Sample was re-extracted outside of hold time with the LCS/LCSD within QC criteria. Sample results are comparable. 8270D SIM - Pesticide surrogate recovery for 2-fluorobiphenyl (52%) does not meet QC criteria. Sample was re-extracted outside of hold time with 2-fluorobiphenyl within QC criteria. Sample results are comparable. 8270D SIM - Pesticide MSD recovery for endosulfan I (57%) does not meet QC criteria. Refer to the LCS for accuracy requirements.

300.0 - Anions - BMSD recovery for chloride is outside of QC criteria (82%). Refer to LCS for accuracy requirements. 200.8LL - Metals MSD recoveries for aluminum (316%), calcium (39.5%), and zinc (48.1%) do not meet QC criteria. The sample concentration is 4 times greater than the spike level.

### LCS for HBN 1744043 [XXX/36385 (1354416) LCS

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### **Case Narrative**

SGS Client: SLR Alaska-Anchorage SGS Project: 1165622 Project Name/Site: Kenai Wells Event 2 Project Contact: Jason Gray

8270D SIM - Pesticide LCS recovery for endosulfan I (50.2%) does not meet QC criteria.

### LCS for HBN 1744487 [XXX/36436 (1355984) LCS

AK102 - Surrogate (5a-Androstane) recovery (122%) does not meet QC criteria, however samples surrogate recovery meet criteria.

### LCSD for HBN 1744043 [XXX/3638 (1354417) LCSD

8270D SIM - Pesticide LCSD recovery for endosulfan I (56.2%) does not meet QC criteria.

### LCSD for HBN 1744487 [XXX/3643 (1355985) LCSD

AK102 - Surrogate (5a-Androstane) recovery (122%) does not meet QC criteria, however samples surrogate recovery meet criteria.

### 1165611001MS (1354427) MS

4500NO3-F - Nitrate - MS recovery is outside of QC criteria. Refer to LCS for accuracy requirements.

### 1165622001(1355996MS) (1355997) MS

200.8LL - Metals MS recoveries for aluminum (419%), calcium (68.1%), and zinc (49.3%) do not meet QC criteria. The sample concentration is 4 times greater than the spike level.

### 1165622010(1356000MS) (1356001) MS

200.8LL - Metals MS recovery for calcium (57.2%) does not meet QC criteria. The sample concentration is 4 times greater than the spike level.

200.8LL - Metals MS recovery for aluminum (136%) does not meet QC criteria. Post digestion spike was successful.

### 1165622001(1357613MS) (1357614) MS

300.0 - Anions - MS recovery for chloride is outside of QC criteria (83%). Refer to LCS for accuracy requirements.

### 1165611001MSD (1354428) MSD

4500NO3-F - Nitrite - MSD recovery is outside of QC criteria. Refer to LCS for accuracy requirements.

### 1165628005MSD (1354806) MSD

4500NO3-F - Nitrite - MSD recovery is outside of QC criteria. Refer to LCS for accuracy requirements.

### 1165622001(1355996MSD) (1355998) MSD

200.8LL - Metals MSD recoveries for aluminum (316%), calcium (39.5%), and zinc (48.1%) do not meet QC criteria. The sample concentration is 4 times greater than the spike level.

### 1165622001(1357613MSD) (1357615) MSD

300.0 - Anions - MSD recovery for chloride is outside of QC criteria (82%). Refer to LCS for accuracy requirements.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

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	Report	of Manual Integratio	ns	
Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason
EPA 300.0				
1165622001	APT-1-0916	WIC5570	Chloride	PNF
1165622005	APT-3-0916	WIC5570	Chloride	PNF
1357610	MB for HBN 1745089 [WXX/11649]	WIC5570	Chloride	PNF
1357611	LCS for HBN 1745089 [WXX/11649	WIC5570	Chloride	PNF
1357613	LABREFQC	WIC5570	Chloride	PNF
1357656	ICB for HBN 1745098 (WIC/5570)	WIC5570	Fluoride	PNF
1357661	CCV for HBN 1745098 (WIC/5570)	WIC5570	Chloride	PNF
1357662	CB for HBN 1745098 (WIC/5570)	WIC5570	Chloride	PNF
Manu	ual Integration Reason Code Descriptions	;		

- Code Description 0 Original Chromatogram Μ Modified Chromatogram SS Skimmed surrogate BLG Closed baseline gap RP Reassign peak name PIR Pattern integration required IT Included tail SP Split peak RSP Removed split peak FPS Forced peak start/stop
- BLC Baseline correction
- PNF Peak not found by software

All DRO/RRO analysis are integrated per SOP.

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### Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <<u>http://www.sgs.com/en/Terms-and-Conditions.aspx></u>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

! B CCV/CVA/CVB CCCV/CVC/CVCA/CVCB CL D DF DL E F GT IB ICV J JL LCS(D) LOD LOQ LT M	Surrogate out of control limits. Indicates the analyte is found in a blank associated with the sample. Continuing Calibration Verification Closing Continuing Calibration Verification Control Limit The analyte concentration is the result of a dilution. Dilution Factor Detection Limit (i.e., maximum method detection limit) The analyte result is above the calibrated range. Indicates value that is greater than or equal to the DL Greater Than Instrument Blank Initial Calibration Verification The quantitation is an estimation. The analyte was positively identified, but the quantitation is a low estimation. Laboratory Control Spike (Duplicate) Limit of Detection (i.e., 1/2 of the LOQ) Limit of Quantitation (i.e., reporting or practical quantitation limit) Less Than A matrix effect was present.
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
M	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
	Indicates the analyte is not detected.
	QC parameter out of acceptance range.
	Relative Percent Difference
	Indicates the analyte was analyzed for but not detected

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Note



	ŝ	Sample Summary	,	
Client Sample ID	Lab Sample ID	Collected	Received	Matrix
APT-1-0916	1165622001	09/20/2016	09/21/2016	Water (Surface, Eff., Ground)
APT-1-0916 MS	1165622002	09/20/2016	09/21/2016	Water (Surface, Eff., Ground)
APT-1-0916 MSD	1165622003	09/20/2016	09/21/2016	Water (Surface, Eff., Ground)
APT-9-0916	1165622004	09/20/2016	09/21/2016	Water (Surface, Eff., Ground)
APT-3-0916	1165622005	09/20/2016	09/21/2016	Water (Surface, Eff., Ground)
MW-39A-0916	1165622006	09/19/2016	09/21/2016	Water (Surface, Eff., Ground)
MW-39B-0916	1165622007	09/19/2016	09/21/2016	Water (Surface, Eff., Ground)
MW-62A-0916	1165622008	09/19/2016	09/21/2016	Water (Surface, Eff., Ground)
TB-08-0916	1165622009	09/19/2016	09/21/2016	Water (Surface, Eff., Ground)
APT-1-0916	1165622010	09/20/2016	09/21/2016	Water (Surface, Eff., Ground)
APT-1-0916 MS	1165622011	09/20/2016	09/21/2016	Water (Surface, Eff., Ground)
APT-1-0916 MSD	1165622012	09/20/2016	09/21/2016	Water (Surface, Eff., Ground)
APT-9-0916	1165622013	09/20/2016	09/21/2016	Water (Surface, Eff., Ground)
APT-3-0916	1165622014	09/20/2016	09/21/2016	Water (Surface, Eff., Ground)
APT-1-0916 (DUP)	1165622015	09/20/2016	09/21/2016	Water (Surface, Eff., Ground)

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Sample Summary							
Client Sample ID	Lab Sample ID Collected Received Matrix						
Method	Method Description						
SM21 2320B	Alkalinity as CaCO3 QC						
SM21 4500-NH3 G	Ammonia-N (W) SM21 4500-NH3 G						
EPA 410.4	Chemical Oxygen Demand						
SM21 2340B	Dissolved Hardness as CaCO3 ICP-MS-LowLv						
SM 5310B	Dissolved Organic Carbon						
AK102	DRO/RRO Low Volume Water						
AK103	DRO/RRO Low Volume Water						
SM21 4500NO3-F	Flow Injection Analysis						
AK101	Gasoline Range Organics (W)						
EPA 300.0	Ion Chromatographic Analysis (W)						
200.8 Low Level	Metals in Water by 200.8 ICP-MS LL						
200.8 Low Level	Metals in Water by 200.8 ICP-MS LL DIS						
SM21 4500P-B,E	Ortho Phosphorus SM4500P B,E (W)						
8270D SIM (PEST)	Pesticides 8270D SIM GC/MS						
SM21 4500-H B	pH Analysis						
SW8082A	SW8082 PCB's						
SM21 4500-N D	TKN by Phenate (W)						
SM21 2540C	Total Dissolved Solids SM18 2540C						
SM 5310B	Total Organic Carbon						
SM21 4500P-B,E	Total Phosphorus (W)						
SM21 2540B	Total Residue						
SM21 2540D	Total Suspended Solids SM20 2540D						
SM21 2130B	Turbidity Analysis						

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b Sample ID: 1165622001	Parameter	Result	<u>Units</u>
etals by ICP/MS	Aluminum	242	ug/L
	Antimony	0.978	ug/L
	Arsenic	19.7	ug/L
	Barium	25.3	ug/L
	Boron	26.9	ug/L
	Calcium	24300	ug/L
	Cobalt	0.167	ug/L
	Copper	0.682	ug/L
	Iron	2710	ug/L
	Lead	0.204	ug/L
	Magnesium	8630	ug/L
	Manganese	118	ug/L
	Molybdenum	1.16	ug/L
	Nickel	1.28	ug/L
	Potassium	6390	ug/L
	Sodium	8160	ug/L
	Vanadium	4.12	ug/L
	Zinc	277	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.486J	mg/L
/olatile Fuels	Gasoline Range Organics	0.0497J	mg/L
Vaters Department	Alkalinity	95.2	mg/L
·	Ammonia-N	0.0893J	mg/L
	Chloride	19.7	mg/L
	Fluoride	0.137J	mg/L
	Ortho Phosphate-P	0.0507	mg/L
	рН	8.30	pH units
	Sulfate	1.73	mg/L
	Total Dissolved Solids	151	mg/L
	Total Organic Carbon	1.82	mg/L
	Total Phosphorus	0.114	mg/L
	Total Solids	172	mg/L
	Total Suspended Solids	14.0	mg/L
	Turbidity	16.0	NTU

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ab Sample ID: 1165622004	Parameter	<u>Result</u>	<u>Units</u>
letals by ICP/MS	Aluminum	185	ug/L
	Antimony	0.987	ug/L
	Arsenic	20.0	ug/L
	Barium	26.6	ug/L
	Boron	26.0	ug/L
	Calcium	24100	ug/L
	Cobalt	0.175	ug/L
	Copper	0.800	ug/L
	Iron	2970	ug/L
	Lead	0.355	ug/L
	Magnesium	8240	ug/L
	Manganese	123	ug/L
	Molybdenum	1.17	ug/L
	Nickel	1.34	ug/L
	Potassium	6530	ug/L
	Sodium	7910	ug/L
	Vanadium	4.04	ug/L
	Zinc	287	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.427J	mg/L
/olatile Fuels	Gasoline Range Organics	0.0445J	mg/L
Naters Department	Alkalinity	94.3	mg/L
	Ammonia-N	0.113	mg/L
	Chemical Oxygen Demand	13.6J	mg/L
	Chloride	19.7	mg/L
	Fluoride	0.139J	mg/L
	Ortho Phosphate-P	0.0488	mg/L
	рН	8.20	pH units
	Sulfate	1.70	mg/L
	Total Dissolved Solids	141	mg/L
	Total Organic Carbon	1.63	mg/L
	Total Phosphorus	0.0905	mg/L
	Total Solids	184	mg/L
	Total Suspended Solids	16.2	mg/L
	Turbidity	16.0	NTU

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Client Sample ID: APT-3-0916			
Lab Sample ID: 1165622005	Parameter	Result	<u>Units</u>
Metals by ICP/MS	Aluminum	12700	ug/L
	Antimony	1.54	ug/L
	Arsenic	79.8	ug/L
	Barium	88.8	ug/L
	Beryllium	0.228	ug/L
	Bismuth	0.300	ug/L
	Boron	1080	ug/L
	Cadmium	0.125	ug/L
	Calcium	5190	ug/L
	Chromium	28.3	ug/L
	Cobalt	6.44	ug/L
	Copper	99.2	ug/L
	Iron	20700	ug/L
	Lead	8.50	ug/L
	Magnesium	5470	ug/L
	Manganese	335	ug/L
	Molybdenum	43.8	ug/L
	Nickel	23.5	ug/L
	Potassium	8320	ug/L
	Silver	0.162	ug/L
	Sodium	195000	ug/L
	Thallium	0.0563	ug/L
	Tin	0.263	ug/L
	Vanadium	41.5	ug/L
	Zinc	2940	ug/L
Semivolatile Organic Fuels	Diesel Range Organics	0.518J	mg/L
	Residual Range Organics	0.165J	mg/L
Waters Department	Alkalinity	509	mg/L
	Ammonia-N	0.309	mg/L
	Chemical Oxygen Demand	102	mg/L
	Chloride	41.6	mg/L
	Fluoride	3.03	mg/L
	Ortho Phosphate-P	4.49	mg/L
	рН	9.00	pH units
	Sulfate	3.88	mg/L
	Total Dissolved Solids	709	mg/L
	Total Kjeldahl Nitrogen	0.891J	mg/L
	Total Organic Carbon	22.2	mg/L
	Total Phosphorus	4.88	mg/L
	Total Solids	732	mg/L
	Total Suspended Solids	80.7	mg/L
	Turbidity	210	NTU

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Client Sample ID: APT-1-0916			
Lab Sample ID: 1165622010	<u>Parameter</u>	Result	Units
Dissolved Metals by ICP/MS	Aluminum	18.8	ug/L
-	Antimony	0.913	ug/L
	Arsenic	14.2	ug/L
	Barium	20.7	ug/L
	Boron	26.6	ug/L
	Calcium	23400	ug/L
	Cobalt	0.0803	ua/L
	Copper	0 202.1	ug/l
	Hardness as CaCO3	91.2	ma/l
	Iron	647	ua/l
	Lead	0.0695.1	ug/L
	Magnesium	7980	ug/L
	Magnesian	102	ug/L
	Mahyanese	103	ug/L
	Niekel	1.20	ug/L
		0.823	ug/L
	Potassium	6260	ug/L
	Silicon	11900	ug/L
	Sodium	7860	ug/L
	Vanadium	1.19	ug/L
	Zinc	36.6	ug/L
Waters Department	Total Organic Carbon, Dissolved	1.70	mg/L
Client Sample ID: APT-9-0916			
Lab Sample ID: 1165622013	Parameter	Result	Units
Dissolved Metals by ICP/MS	Aluminum	21.7	ua/L
	Antimony	0.926	ua/L
	Arsenic	14.2	ua/L
	Barium	20.4	ug/l
	Boron	27.6	ug/l
	Calcium	24000	ug/l
	Cobalt	0.0776	ug/l
	Copper	0.216.1	ug/L
	Hardness as CaCO3	02.2	mg/L
		92.2 631	ing/L
	Magnosium	7940	ug/L
	Magnesian	1040	ug/L
	Mahadanum	103	ug/L
	Niekel	1.21	ug/L
		0.806	ug/L
	Potassium	0100	ug/L
	Silicon	71400	ug/L
	Soaium	/600	ug/L
	Vanadium	1.27	ug/L
	Zinc	34.0	ug/L
Waters Department	Total Organic Carbon, Dissolved	1.45	mg/L

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Client Sample ID: APT-3-0916			
Lab Sample ID: 1165622014	Parameter	Result	<u>Units</u>
Dissolved Metals by ICP/MS	Aluminum	380	ug/L
-	Antimony	1.90	ug/L
	Arsenic	57.5	ug/L
	Barium	12.3	ug/L
	Beryllium	0.0339J	ug/L
	Bismuth	0.0368J	ug/L
	Boron	980	ug/L
	Cadmium	0.0341J	ug/L
	Calcium	2570	ug/L
	Chromium	4.26	ug/L
	Cobalt	0.597	ug/L
	Copper	7.36	ug/L
	Hardness as CaCO3	15.2	mg/L
	Iron	937	ug/L
	Lead	0.861	ug/L
	Magnesium	2130	ug/L
	Manganese	35.3	ug/L
	Molybdenum	43.1	ug/L
	Nickel	3.71	ug/L
	Potassium	6990	ug/L
	Silicon	5850	ug/L
	Silver	0.0129J	ug/L
	Sodium	184000	ug/L
	Vanadium	12.5	ug/L
	Zinc	114	ug/L
Waters Department	Total Organic Carbon, Dissolved	14.9	mg/L

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### Results of APT-1-0916

Client Sample ID: **APT-1-0916** Client Project ID: **Kenai Wells Event 2** Lab Sample ID: 1165622001 Lab Project ID: 1165622 Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	242	2.00	0.620	ug/L	2.5		10/08/16 13:55
Antimony	0.978	0.0500	0.0150	ug/L	2.5		10/08/16 13:55
Arsenic	19.7	0.800	0.200	ug/L	2.5		10/08/16 13:55
Barium	25.3	0.250	0.0400	ug/L	2.5		10/08/16 13:55
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		10/08/16 13:55
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		10/08/16 13:55
Boron	26.9	5.00	1.50	ug/L	2.5		10/08/16 13:55
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		10/08/16 13:55
Calcium	24300	50.0	15.0	ug/L	2.5		10/08/16 13:55
Chromium	0.250 U	0.500	0.150	ug/L	2.5		10/08/16 13:55
Cobalt	0.167	0.0200	0.0100	ug/L	2.5		10/08/16 13:55
Copper	0.682	0.500	0.200	ug/L	2.5		10/08/16 13:55
Iron	2710	20.0	6.20	ug/L	2.5		10/08/16 13:55
Lead	0.204	0.100	0.0310	ug/L	2.5		10/08/16 13:55
Magnesium	8630	20.0	6.20	ug/L	2.5		10/08/16 13:55
Manganese	118	0.100	0.0310	ug/L	2.5		10/08/16 13:55
Molybdenum	1.16	0.0500	0.0150	ug/L	2.5		10/08/16 13:55
Nickel	1.28	0.620	0.0620	ug/L	2.5		10/08/16 13:55
Potassium	6390	50.0	15.0	ug/L	2.5		10/08/16 13:55
Selenium	0.500 U	1.00	0.310	ug/L	2.5		10/08/16 13:55
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		10/08/16 13:55
Sodium	8160	100	31.0	ug/L	2.5		10/08/16 13:55
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		10/08/16 13:55
Tin	0.100 U	0.200	0.0620	ug/L	2.5		10/08/16 13:55
Vanadium	4.12	1.00	0.310	ug/L	2.5		10/08/16 13:55
Zinc	277	3.10	0.400	ug/L	2.5		10/08/16 13:55

### **Batch Information**

Analytical Batch: MMS9568 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 10/08/16 13:55 Container ID: 1165622001-O Prep Batch: MXX30245 Prep Method: E200.2 Prep Date/Time: 10/03/16 07:43 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

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Results of APT-1-0916

Client Sample ID: **APT-1-0916** Client Project ID: **Kenai Wells Event 2** Lab Sample ID: 1165622001 Lab Project ID: 1165622 Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Organochlorinated Pesticides by GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
4,4'-DDD	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
4,4'-DDE	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
4,4'-DDT	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
Aldrin	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
alpha-BHC	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
alpha-Chlordane	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
beta-BHC	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
delta-BHC	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
Dieldrin	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
Endosulfan I	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
Endosulfan II	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
Endosulfan sulfate	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
Endrin	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
Endrin aldehyde	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
Endrin ketone	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
gamma-BHC (Lindane)	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
gamma-Chlordane	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
Heptachlor	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
Heptachlor epoxide	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
Methoxychlor	0.0155 U	0.0309	0.00969	ug/L	1		09/28/16 15:28
Toxaphene	1.03 U	2.06	0.639	ug/L	1		09/28/16 15:28
Surrogates							
2-Fluorobiphenyl (surr)	51.7 *	53-106		%	1		09/28/16 15:28
Terphenyl-d14 (surr)	77.2	58-132		%	1		09/28/16 15:28

### Batch Information

Analytical Batch: XMS9648 Analytical Method: 8270D SIM (PEST) Analyst: DSH Analytical Date/Time: 09/28/16 15:28 Container ID: 1165622001-C Prep Batch: XXX36385 Prep Method: SW3520C Prep Date/Time: 09/26/16 09:01 Prep Initial Wt./Vol.: 970 mL Prep Extract Vol: 1 mL

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### Results of APT-1-0916

Client Sample ID: APT-1-0916
Client Project ID: Kenai Wells Event 2
Lab Sample ID: 1165622001
Lab Project ID: 1165622

Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Polychlorinated Biphenyls

						Allowable	
Parameter	<u>Result</u> Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aroclor-1016	0.204 U	0.408	0.122	ug/L	1		10/06/16 23:51
Aroclor-1221	0.510 U	1.02	0.316	ug/L	1		10/06/16 23:51
Aroclor-1232	0.0510 U	0.102	0.0316	ug/L	1		10/06/16 23:51
Aroclor-1242	0.0510 U	0.102	0.0316	ug/L	1		10/06/16 23:51
Aroclor-1248	0.0510 U	0.102	0.0316	ug/L	1		10/06/16 23:51
Aroclor-1254	0.0510 U	0.102	0.0316	ug/L	1		10/06/16 23:51
Aroclor-1260	0.0510 U	0.102	0.0316	ug/L	1		10/06/16 23:51
Surrogates							
Decachlorobiphenyl (surr)	94	40-135		%	1		10/06/16 23:51

### Batch Information

Analytical Batch: XGC9551 Analytical Method: SW8082A Analyst: S.G Analytical Date/Time: 10/06/16 23:51 Container ID: 1165622001-A Prep Batch: XXX36469 Prep Method: SW3520C Prep Date/Time: 10/06/16 09:52 Prep Initial Wt./Vol.: 980 mL Prep Extract Vol: 1 mL

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Results of APT-1-0916							
Client Sample ID: APT-1-0916 Client Project ID: Kenai Wells Event 2 Lab Sample ID: 1165622001 Lab Project ID: 1165622		C F M S L	Collection Da Received Da Matrix: Wate Solids (%): .ocation:	ate: 09/20/ lte: 09/21/ [,] r (Surface,	16 10:32 16 13:45 Eff., Grou	und)	
Results by Senivolatile Organic Puels			_				
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.486 J	<u>LOQ/CL</u> 0.566	<u>DL</u> 0.170	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 10/01/16 02:06
Surrogates							
5a Androstane (surr)	93.5	50-150		%	1		10/01/16 02:06
Batch Information							
Analytical Batch: XFC12899 Analytical Method: AK102 Analyst: NRO Analytical Date/Time: 10/01/16 02:06 Container ID: 1165622001-Q			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36403 I: SW3520C me: 09/28/1 /t./Vol.: 265 Vol: 1 mL	; 16 08:46 5 mL		
Parameter Residual Range Organics	<u>Result Qual</u> 0.236 U	<u>LOQ/CL</u> 0.472	<u>DL</u> 0.142	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/01/16 02:06
Surrogates							
n-Triacontane-d62 (surr)	97.2	50-150		%	1		10/01/16 02:06
Batch Information							
Analytical Batch: XFC12899 Analytical Method: AK103 Analyst: NRO Analytical Date/Time: 10/01/16 02:06 Container ID: 1165622001-Q			Prep Batch: Prep Method Prep Date/Ti Prep Initial W Prep Extract	XXX36403 I: SW3520C me: 09/28/1 /t./Vol.: 265 Vol: 1 mL	; 16 08:46 5 mL		

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Client Sample ID: APT-1-0916 Client Project ID: Kenai Wells Event 2 Lab Sample ID: 1165622001 Lab Project ID: 1165622					Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
<u>Result Qual</u> 0.0497 J	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/28/16 03:03						
83.6	50-150		%	1		09/28/16 03:03						
		Prep Batch: Prep Method Prep Date/Tir Prep Initial W Prep Extract	VXX29646 : SW5030E me: 09/27/ /t./Vol.: 5 m Vol: 5 mL	3 16 06:00 IL								
	2 <u>Result Qual</u> 0.0497 J 83.6	2 Result Qual 0.0497 J 0.100 83.6 50-150	2 Collection Da Received Da Matrix: Water Solids (%): Location:	2 Collection Date: 09/20/ Received Date: 09/21/ Matrix: Water (Surface, Solids (%): Location:	Collection Date:         09/20/16         10:32           Received Date:         09/21/16         13:45           Matrix:         Water (Surface, Eff., Grossolids (%): Location:           Result Qual         LOQ/CL         DL         Units         DF           0.0497 J         0.100         0.0310         mg/L         1           83.6         50-150         %         1           Prep Batch:         VXX29646         Prep Date/Time:         09/27/16         06:00           Prep Initial WL/Vol.:         5 mL         Prep Extract Vol:         5 mL	2       Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:         Result Qual 0.0497 J       LOQ/CL 0.100       DL 0.0310       Units mg/L       DF 1         83.6       50-150       %       1         Prep Batch: VXX29646 Prep Method: SW5030B Prep Date/Time: 09/27/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL						

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Results of APT-1-0916							
Client Sample ID: <b>APT-1-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622001 Lab Project ID: 1165622	2	C R M S L	ollection Da eceived Da latrix: Water olids (%): ocation:	ate: 09/20/ te: 09/21/ r (Surface,	/16 10:32 16 13:45 Eff., Gro	2 bund)	
Results by waters Department			_				
<u>Parameter</u> Chloride Fluoride Sulfate	<u>Result Qual</u> 19.7 0.137 J 1.73	LOQ/CL 0.200 0.200 0.200	<u>DL</u> 0.0620 0.0620 0.0620	<u>Units</u> mg/L mg/L mg/L	<u>DF</u> 1 1 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/07/16 07:02 10/07/16 07:02 10/07/16 07:02
Batch Information Analytical Batch: WIC5570 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 10/07/16 07:02 Container ID: 1165622001-T			Prep Batch: Prep Method Prep Date/Tin Prep Initial W Prep Extract	WXX11649 : METHOD me: 10/06/ /t./Vol.: 10 Vol: 10 mL	16 16:32 mL		
Parameter Chemical Oxygen Demand	<u>Result Qual</u> 10.0 U	<u>LOQ/CL</u> 20.0	<u>DL</u> 6.20	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/07/16 14:52
Batch Information Analytical Batch: WSP5358 Analytical Method: EPA 410.4 Analyst: KBE Analytical Date/Time: 10/07/16 14:52 Container ID: 1165622001-I							
<u>Parameter</u> Total Organic Carbon	<u>Result Qual</u> 1.82	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/27/16 15:25
Batch Information Analytical Batch: WTC2634 Analytical Method: SM 5310B Analyst: VDL Analytical Date/Time: 09/27/16 15:25 Container ID: 1165622001-K							
<u>Parameter</u> Turbidity	<u>Result Qual</u> 16.0	LOQ/CL 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/22/16 08:40
Print Date: 10/14/2016 5:15:05PM	0 West Potter Dr	ive Anchorage	, AK 95518			J flaggin	g is activated
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Results of APT-1-0916	
Client Sample ID: APT-1-0916	Collect

Client Sample ID: APT-1-0916 Client Project ID: Kenai Wells Even Lab Sample ID: 1165622001	t 2	C F N	Collection Da Received Da Matrix: Wate	ate: 09/20/ ate: 09/21/ [,] er (Surface,	16 10:32 16 13:45 Eff., Gro	2 pund)	
Lab Project ID: 1165622		S	Solids (%): .ocation:				
Results by Waters Department							
Batch Information Analytical Batch: WAT10743 Analytical Method: SM21 2130B Analyst: KBE Analytical Date/Time: 09/22/16 08:40 Container ID: 1165622001-V							
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 95.2	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/23/16 19:39
Batch Information Analytical Batch: WTI4518 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/23/16 19:39 Container ID: 1165622001-V							
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Allowable</u> <u>Limits</u>	Date Analyzed
Total Solids	172	10.0	10.0	mg/L	1		09/26/16 14:26
Batch Information Analytical Batch: STS5225 Analytical Method: SM21 2540B Analyst: KBE Analytical Date/Time: 09/26/16 14:26 Container ID: 1165622001-L							
Parameter Total Dissolved Solids	<u>Result Qual</u> 151	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/23/16 13:54
Batch Information Analytical Batch: STS5216 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/23/16 13:54 Container ID: 1165622001-V							
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	Allowable Limits	Date Analyzed
Print Date: 10/14/2016 5:15:05PM	000 Mart D. H. D.					J flaggin	g is activated
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Results of <b>APT-1-0916</b> Client Sample ID: <b>APT-1-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622001 Lab Project ID: 1165622	2	Ci Ri M Si Lo	ollection Da eceived Da atrix: Water olids (%): ocation:	tte: 09/20/1 te: 09/21/10 (Surface, E	6 10:32 3 13:45 Eff., Gro	und)	
Results by Waters Department							
Parameter Total Suspended Solids	<u>Result</u> Qual 14.0	<u>LOQ/CL</u> 5.00	<u>DL</u> 1.55	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/22/16 19:37
Batch Information Analytical Batch: STS5218 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/22/16 19:37 Container ID: 1165622001-S							
<u>Parameter</u> pH	<u>Result Qual</u> 8.30	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/23/16 19:39
Batch Information Analytical Batch: WTI4514 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 19:39 Container ID: 1165622001-V							
<u>Parameter</u> Total Kjeldahl Nitrogen	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/06/16 17:06
Batch Information Analytical Batch: WDA3869 Analytical Method: SM21 4500-N D Analyst: NEG Analytical Date/Time: 10/06/16 17:06 Container ID: 1165622001-I		F F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11647 : METHOD ne: 10/05/16 't./Vol.: 25 m Vol: 25 mL	3 18:40 L		
<u>Parameter</u> Ammonia-N	<u>Result Qual</u> 0.0893 J	LOQ/CL 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/29/16 13:31
Print Date: 10/14/2016 5:15:05PM						J flaggin	g is activated

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Results of APT-1-0916							
Client Sample ID: <b>APT-1-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622001 Lab Project ID: 1165622	2	C F M S L	Collection Da Received Dat Matrix: Water Solids (%): ocation:	te: 09/20/ e: 09/21/ (Surface,	(16 10:32 16 13:45 Eff., Gro	und)	
Results by Waters Department							
Batch Information							
Analytical Batch: WDA3863 Analytical Method: SM21 4500-NH3 G Analyst: NEG Analytical Date/Time: 09/29/16 13:31 Container ID: 1165622001-I			Prep Batch: N Prep Method: Prep Date/Tin Prep Initial Wi Prep Extract N	WXX11639 METHOD ne: 09/29/ t./Vol.: 6 m /ol: 6 mL	) 16 13:00 nL		
<u>Parameter</u> Nitrate-N Nitrite-N	<u>Result Qual</u> 0.0500 U 0.0500 U	<u>LOQ/CL</u> 0.100 0.100	<u>DL</u> 0.0300 0.0300	<u>Units</u> mg/L mg/L	<u>DF</u> 2 2	<u>Allowable</u> Limits	Date Analyzed 09/21/16 16:26 09/21/16 16:26
				-			
Analyst: KBE Analyst: KBE Analytical Date/Time: 09/21/16 16:26 Container ID: 1165622001-T						٨١١٥٠٠٠٢	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Ortho Phosphate-P	0.0507	0.0100	0.00310	mg/L	1		09/21/16 17:40
Total Phosphorus	0.114	0.0100	0.00310	mg/L	1		10/12/16 17:38
Batch Information							
Analytical Batch: WDA3858 Analytical Method: SM21 4500P-B,E Analyst: NEG Analytical Date/Time: 09/21/16 17:40 Container ID: 1165622001-M			Prep Batch: N Prep Method: Prep Date/Tin Prep Initial Wi Prep Extract N	WXX11629 SM21 450 ne: 09/21/ [,] t./Vol.: 25 /ol: 25 mL	00P-B,E 16 17:00 mL		
Analytical Batch: WDA3870 Analytical Method: SM21 4500P-B,E Analyst: NEG Analytical Date/Time: 10/12/16 17:38 Container ID: 1165622001-I			Prep Batch: N Prep Method: Prep Date/Tin Prep Initial Wi Prep Extract N	WXX11653 SM21 450 ne: 10/07/ t./Vol.: 25 /ol: 25 mL	00P-B,E 16 16:15 mL		
Print Date: 10/14/2016 5:15:05PM	)() West Potter D	rive Anchorace	AK 05519			J flaggin	g is activated
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### Results of APT-9-0916

Client Sample ID: **APT-9-0916** Client Project ID: **Kenai Wells Event 2** Lab Sample ID: 1165622004 Lab Project ID: 1165622 Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Barium	26.6	0.250	0.0400	ug/L	2.5		10/08/16 14:15
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		10/08/16 14:15
Cobalt	0.175	0.0200	0.0100	ug/L	2.5		10/08/16 14:15
Copper	0.800	0.500	0.200	ug/L	2.5		10/08/16 14:15
Iron	2970	20.0	6.20	ug/L	2.5		10/08/16 14:15
Lead	0.355	0.100	0.0310	ug/L	2.5		10/08/16 14:15
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		10/08/16 14:15
Boron	26.0	5.00	1.50	ug/L	2.5		10/08/16 14:15
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		10/08/16 14:15
Arsenic	20.0	0.800	0.200	ug/L	2.5		10/08/16 14:15
Calcium	24100	50.0	15.0	ug/L	2.5		10/08/16 14:15
Chromium	0.250 U	0.500	0.150	ug/L	2.5		10/08/16 14:15
Aluminum	185	2.00	0.620	ug/L	2.5		10/08/16 14:15
Antimony	0.987	0.0500	0.0150	ug/L	2.5		10/08/16 14:15
Magnesium	8240	20.0	6.20	ug/L	2.5		10/08/16 14:15
Manganese	123	0.100	0.0310	ug/L	2.5		10/08/16 14:15
Molybdenum	1.17	0.0500	0.0150	ug/L	2.5		10/08/16 14:15
Nickel	1.34	0.620	0.0620	ug/L	2.5		10/08/16 14:15
Potassium	6530	50.0	15.0	ug/L	2.5		10/08/16 14:15
Selenium	0.500 U	1.00	0.310	ug/L	2.5		10/08/16 14:15
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		10/08/16 14:15
Sodium	7910	100	31.0	ug/L	2.5		10/08/16 14:15
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		10/08/16 14:15
Tin	0.100 U	0.200	0.0620	ug/L	2.5		10/08/16 14:15
Vanadium	4.04	1.00	0.310	ug/L	2.5		10/08/16 14:15
Zinc	287	3.10	0.400	ug/L	2.5		10/08/16 14:15

### **Batch Information**

Analytical Batch: MMS9568 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 10/08/16 14:15 Container ID: 1165622004-M Prep Batch: MXX30245 Prep Method: E200.2 Prep Date/Time: 10/03/16 07:43 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/14/2016 5:15:05PM

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Results of APT-9-0916

Client Sample ID: **APT-9-0916** Client Project ID: **Kenai Wells Event 2** Lab Sample ID: 1165622004 Lab Project ID: 1165622 Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Organochlorinated Pesticides by GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
4,4'-DDD	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
4,4'-DDE	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
4,4'-DDT	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
Aldrin	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
alpha-BHC	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
alpha-Chlordane	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
beta-BHC	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
delta-BHC	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
Dieldrin	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
Endosulfan I	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
Endosulfan II	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
Endosulfan sulfate	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
Endrin	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
Endrin aldehyde	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
Endrin ketone	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
gamma-BHC (Lindane)	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
gamma-Chlordane	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
Heptachlor	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
Heptachlor epoxide	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
Methoxychlor	0.0158 U	0.0316	0.00989	ug/L	1		09/28/16 16:17
Toxaphene	1.05 U	2.11	0.653	ug/L	1		09/28/16 16:17
Surrogates							
2-Fluorobiphenyl (surr)	57.6	53-106		%	1		09/28/16 16:17
Terphenyl-d14 (surr)	80.9	58-132		%	1		09/28/16 16:17

### Batch Information

Analytical Batch: XMS9648 Analytical Method: 8270D SIM (PEST) Analyst: DSH Analytical Date/Time: 09/28/16 16:17 Container ID: 1165622004-C Prep Batch: XXX36385 Prep Method: SW3520C Prep Date/Time: 09/26/16 09:01 Prep Initial Wt./Vol.: 950 mL Prep Extract Vol: 1 mL

Print Date: 10/14/2016 5:15:05PM

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### Results of APT-9-0916

Client Sample ID: APT-9-0916
Client Project ID: Kenai Wells Event 2
Lab Sample ID: 1165622004
Lab Project ID: 1165622

Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

### Results by Polychlorinated Biphenyls

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aroclor-1016	0.215 U	0.430	0.129	ug/L	1		10/07/16 02:15
Aroclor-1221	0.540 U	1.08	0.333	ug/L	1		10/07/16 02:15
Aroclor-1232	0.0540 U	0.108	0.0333	ug/L	1		10/07/16 02:15
Aroclor-1242	0.0540 U	0.108	0.0333	ug/L	1		10/07/16 02:15
Aroclor-1248	0.0540 U	0.108	0.0333	ug/L	1		10/07/16 02:15
Aroclor-1254	0.0540 U	0.108	0.0333	ug/L	1		10/07/16 02:15
Aroclor-1260	0.0540 U	0.108	0.0333	ug/L	1		10/07/16 02:15
Surrogates							
Decachlorobiphenyl (surr)	92	40-135		%	1		10/07/16 02:15

### Batch Information

Analytical Batch: XGC9551 Analytical Method: SW8082A Analyst: S.G Analytical Date/Time: 10/07/16 02:15 Container ID: 1165622004-A Prep Batch: XXX36469 Prep Method: SW3520C Prep Date/Time: 10/06/16 09:52 Prep Initial Wt./Vol.: 930 mL Prep Extract Vol: 1 mL

Print Date: 10/14/2016 5:15:05PM

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Results of APT-9-0916							
Client Sample ID: <b>APT-9-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622004 Lab Project ID: 1165622		C F M S L	Collection Da Received Da Matrix: Wate Solids (%): .ocation:	ate: 09/20/ ate: 09/21/ [.] r (Surface,	16 10:32 16 13:45 Eff., Gro	und)	
Results by Semivolatile Organic Fuels	)						
<u>Parameter</u> Diesel Range Organics	<u>Result Qual</u> 0.427 J	<u>LOQ/CL</u> 0.566	<u>DL</u> 0.170	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 10/03/16 18:50
Surrogates							
5a Androstane (surr)	102	50-150		%	1		10/03/16 18:50
Batch Information							
Analytical Batch: XFC12901 Analytical Method: AK102 Analyst: CRA Analytical Date/Time: 10/03/16 18:50 Container ID: 1165622004-N		Prep Batch: XXX36436 Prep Method: SW3520C Prep Date/Time: 10/03/16 08:23 Prep Initial Wt./Vol.: 265 mL Prep Extract Vol: 1 mL					
<u>Parameter</u> Residual Range Organics	<u>Result Qual</u> 0.236 U	<u>LOQ/CL</u> 0.472	<u>DL</u> 0.142	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 10/03/16 18:50
Surrogates							
n-Triacontane-d62 (surr)	102	50-150		%	1		10/03/16 18:50
Batch Information							
Analytical Batch: XFC12901 Analytical Method: AK103 Analyst: CRA Analytical Date/Time: 10/03/16 18:50 Container ID: 1165622004-N			Prep Batch: Prep Methoc Prep Date/Ti Prep Initial V Prep Extract	XXX36436 I: SW3520C me: 10/03/ [,] Vt./Vol.: 265 Vol: 1 mL	C 16 08:23 5 mL		

Print Date: 10/14/2016 5:15:05PM

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Results of APT-9-0916							
Client Sample ID: <b>APT-9-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622004 Lab Project ID: 1165622	C R M S Lu						
Results by volatile rueis							
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0445 J	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	<u>Date Analyzed</u> 09/24/16 15:47
Surrogates							
4-Bromofluorobenzene (surr)	88	50-150		%	1		09/24/16 15:47
Batch Information							
Analytical Batch: VFC13323 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/24/16 15:47 Container ID: 1165622004-F	Prep Batch: VXX29626 Prep Method: SW5030B Prep Date/Time: 09/24/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL						

Print Date: 10/14/2016 5:15:05PM

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Results of APT-9-0916									
Client Sample ID: <b>APT-9-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622004 Lab Project ID: 1165622	2	Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by waters Department						Allerineble			
<u>Parameter</u> Chloride Fluoride Sulfate	<u>Result Qual</u> 19.7 0.139 J 1.70	LOQ/CL 0.200 0.200 0.200	<u>DL</u> 0.0620 0.0620 0.0620	<u>Units</u> mg/L mg/L mg/L	<u>DF</u> 1 1 1	<u>Allowable</u> Limits	Date Analyzed 10/07/16 09:38 10/07/16 09:38 10/07/16 09:38		
Batch Information Analytical Batch: WIC5570 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 10/07/16 09:38 Container ID: 1165622004-Q			Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	WXX11649 : METHOD me: 10/06/ /t./Vol.: 10 Vol: 10 mL	16 16:32 mL				
<u>Parameter</u> Chemical Oxygen Demand	<u>Result Qual</u> 13.6 J	<u>LOQ/CL</u> 20.0	<u>DL</u> 6.20	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/07/16 14:52		
Batch Information Analytical Batch: WSP5358 Analytical Method: EPA 410.4 Analyst: KBE Analytical Date/Time: 10/07/16 14:52 Container ID: 1165622004-I									
<u>Parameter</u> Total Organic Carbon	<u>Result Qual</u> 1.63	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/27/16 19:36		
Batch Information Analytical Batch: WTC2634 Analytical Method: SM 5310B Analyst: VDL Analytical Date/Time: 09/27/16 19:36 Container ID: 1165622004-J									
<u>Parameter</u> Turbidity	<u>Result</u> Qual 16.0	LOQ/CL 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/22/16 08:40		
Print Date: 10/14/2016 5:15:05PM	10 West Potter Dr	ive Anchorage	, AK 95518			J flaggin	g is activated		
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Results of APT-9-0916	
Client Sample ID: ADT 0.0016	Colloct

Client Sample ID: <b>APT-9-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622004 Lab Project ID: 1165622	2 Collection Date: 09/20/16 10:32 2 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:								
Results by Waters Department			]						
Batch Information Analytical Batch: WAT10743 Analytical Method: SM21 2130B Analyst: KBE Analytical Date/Time: 09/22/16 08:40 Container ID: 1165622004-R									
<u>Parameter</u> Alkalinity	<u>Result Qual</u> 94.3	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/23/16 19:52		
Batch Information Analytical Batch: WTI4518 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 09/23/16 19:52 Container ID: 1165622004-R									
<u>Parameter</u> Total Solids	<u>Result Qual</u> 184	<u>LOQ/CL</u> 10.0	<u>DL</u> 10.0	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/26/16 14:26		
Batch Information Analytical Batch: STS5225 Analytical Method: SM21 2540B Analyst: KBE Analytical Date/Time: 09/26/16 14:26 Container ID: 1165622004-K									
Parameter Total Dissolved Solids	<u>Result Qual</u> 141	<u>LOQ/CL</u> 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 09/23/16 13:54		
Batch Information Analytical Batch: STS5216 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/23/16 13:54 Container ID: 1165622004-R									
Parameter	<u>Result Qual</u>	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	<u>Allowable</u> <u>Limits</u>	Date Analyzed		
Print Date: 10/14/2016 5:15:05PM  SGS North America Inc.  20	0 West Potter Dri	ve Anchorage	e, AK 95518	com		J flaggin	g is activated		
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SGS		Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16 Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results of <b>APT-9-0916</b> Client Sample ID: <b>APT-9-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622004 Lab Project ID: 1165622	2							
Results by Waters Department           Parameter           Total Suspended Solids	<u>Result Qual</u> 16.2	<u>LOQ/CL</u> 2.74	<u>DL</u> 0.849	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/22/16 19:37	
Batch Information Analytical Batch: STS5218 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/22/16 19:37 Container ID: 1165622004-P								
<u>Parameter</u> pH	<u>Result Qual</u> 8.20	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 19:52	
Batch Information Analytical Batch: WTI4514 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 19:52 Container ID: 1165622004-R								
<u>Parameter</u> Total Kjeldahl Nitrogen	<u>Result Qual</u> 0.500 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 10/06/16 17:10	
Batch Information Analytical Batch: WDA3869 Analytical Method: SM21 4500-N D Analyst: NEG Analytical Date/Time: 10/06/16 17:10 Container ID: 1165622004-I		F	Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	WXX11647 : METHOD me: 10/05/16 /t./Vol.: 25 m Vol: 25 mL	6 18:40 ⊔L			
<u>Parameter</u> Ammonia-N	<u>Result Qual</u> 0.113	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/29/16 13:39	
Print Date: 10/14/2016 5:15:05PM						J flaggin	g is activated	

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Results of APT-9-0916									
Client Sample ID: <b>APT-9-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622004 Lab Project ID: 1165622	2	Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by Waters Department									
Batch Information									
Analytical Batch: WDA3863 Analytical Method: SM21 4500-NH3 G Analyst: NEG Analytical Date/Time: 09/29/16 13:39 Container ID: 1165622004-I			Prep Batch: V Prep Method: Prep Date/Tin Prep Initial Wt Prep Extract V	WXX11639 METHOD ne: 09/29/ t./Vol.: 6 m /ol: 6 mL	) 16 13:00 hL				
<u>Parameter</u> Nitrate-N Nitrite-N	<u>Result Qual</u> 0.0500 U 0.0500 U	<u>LOQ/CL</u> 0.100 0.100	<u>DL</u> 0.0300 0.0300	<u>Units</u> mg/L mg/L	<u>DF</u> 2 2	Allowable Limits	Date Analyzed 09/21/16 16:37 09/21/16 16:37		
	0.00000	0.100	2.0000	<del>9</del> , L	-				
Analyst: KBE Analytical Date/Time: 09/21/16 16:37 Container ID: 1165622004-Q						Allowable			
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed		
Ortho Phosphate-P Total Phosphorus	0.0488 0.0905	0.0100 0.0100	0.00310 0.00310	mg/L ma/L	1 1		09/21/16 17:42 10/12/16 17:41		
	0.0000	010100	0100010		·				
Batch Information Analytical Batch: WDA3858 Analytical Method: SM21 4500P-B,E Analyst: NEG Analytical Date/Time: 09/21/16 17:42 Container ID: 1165622004-L		Prep Batch: WXX11629 Prep Method: SM21 4500P-B,E Prep Date/Time: 09/21/16 17:00 Prep Initial Wt./Vol.: 25 mL Prep Extract Vol: 25 mL							
Analytical Batch: WDA3870 Analytical Method: SM21 4500P-B,E Analyst: NEG Analytical Date/Time: 10/12/16 17:41 Container ID: 1165622004-I			Prep Batch: V Prep Method: Prep Date/Tin Prep Initial Wt Prep Extract V	WXX11653 SM21 450 ne: 10/07/ t./Vol.: 25 /ol: 25 mL	00P-B,E 16 16:15 mL				
Print Date: 10/14/2016 5:15:05PM						J flaqqin	g is activated		
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#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

## Results of APT-3-0916

Client Sample ID: **APT-3-0916** Client Project ID: **Kenai Wells Event 2** Lab Sample ID: 1165622005 Lab Project ID: 1165622 Collection Date: 09/20/16 12:10 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	12700	160	49.6	ug/L	200		10/08/16 15:39
Antimony	1.54	0.0500	0.0150	ug/L	2.5		10/08/16 14:18
Arsenic	79.8	0.800	0.200	ug/L	2.5		10/08/16 14:18
Barium	88.8	0.250	0.0400	ug/L	2.5		10/08/16 14:18
Beryllium	0.228	0.0500	0.0250	ug/L	2.5		10/08/16 14:18
Bismuth	0.300	0.0500	0.0150	ug/L	2.5		10/08/16 14:18
Boron	1080	200	60.0	ug/L	100		10/08/16 15:19
Cadmium	0.125	0.0500	0.0150	ug/L	2.5		10/08/16 14:18
Calcium	5190	50.0	15.0	ug/L	2.5		10/08/16 14:18
Chromium	28.3	0.500	0.150	ug/L	2.5		10/08/16 14:18
Cobalt	6.44	0.0200	0.0100	ug/L	2.5		10/08/16 14:18
Copper	99.2	0.500	0.200	ug/L	2.5		10/08/16 14:18
Iron	20700	20.0	6.20	ug/L	2.5		10/08/16 14:18
Lead	8.50	0.100	0.0310	ug/L	2.5		10/08/16 14:18
Magnesium	5470	20.0	6.20	ug/L	2.5		10/08/16 14:18
Manganese	335	0.100	0.0310	ug/L	2.5		10/08/16 14:18
Molybdenum	43.8	0.0500	0.0150	ug/L	2.5		10/08/16 14:18
Nickel	23.5	0.620	0.0620	ug/L	2.5		10/08/16 14:18
Potassium	8320	50.0	15.0	ug/L	2.5		10/08/16 14:18
Selenium	0.500 U	1.00	0.310	ug/L	2.5		10/08/16 14:18
Silver	0.162	0.0200	0.00620	ug/L	2.5		10/08/16 14:18
Sodium	195000	4000	1240	ug/L	100		10/08/16 15:19
Thallium	0.0563	0.0200	0.00620	ug/L	2.5		10/08/16 14:18
Tin	0.263	0.200	0.0620	ug/L	2.5		10/08/16 14:18
Vanadium	41.5	1.00	0.310	ug/L	2.5		10/08/16 14:18
Zinc	2940	124	16.0	ug/L	100		10/08/16 15:19

#### **Batch Information**

Analytical Batch: MMS9568 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 10/08/16 15:39 Container ID: 1165622005-M Prep Batch: MXX30245 Prep Method: E200.2 Prep Date/Time: 10/03/16 07:43 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/14/2016 5:15:05PM

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Results of APT-3-0916

Client Sample ID: **APT-3-0916** Client Project ID: **Kenai Wells Event 2** Lab Sample ID: 1165622005 Lab Project ID: 1165622 Collection Date: 09/20/16 12:10 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Organochlorinated Pesticides by GC/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
4,4'-DDD	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
4,4'-DDE	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
4,4'-DDT	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
Aldrin	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
alpha-BHC	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
alpha-Chlordane	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
beta-BHC	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
delta-BHC	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
Dieldrin	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
Endosulfan I	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
Endosulfan II	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
Endosulfan sulfate	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
Endrin	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
Endrin aldehyde	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
Endrin ketone	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
gamma-BHC (Lindane)	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
gamma-Chlordane	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
Heptachlor	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
Heptachlor epoxide	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
Methoxychlor	0.0153 U	0.0306	0.00959	ug/L	1		09/28/16 16:34
Toxaphene	1.02 U	2.04	0.633	ug/L	1		09/28/16 16:34
Surrogates							
2-Fluorobiphenyl (surr)	47.3 *	53-106		%	1		09/28/16 16:34
Terphenyl-d14 (surr)	20.2 *	58-132		%	1		09/28/16 16:34

#### Batch Information

Analytical Batch: XMS9648 Analytical Method: 8270D SIM (PEST) Analyst: DSH Analytical Date/Time: 09/28/16 16:34 Container ID: 1165622005-C Prep Batch: XXX36385 Prep Method: SW3520C Prep Date/Time: 09/26/16 09:01 Prep Initial Wt./Vol.: 980 mL Prep Extract Vol: 1 mL

Print Date: 10/14/2016 5:15:05PM

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Results of APT-3-0916

Client Sample ID:APT-3-0916CollectionClient Project ID:Kenai Wells Event 2ReceivedLab Sample ID:1165622005Matrix: WaLab Project ID:1165622Solids (%)Location:Discrete the project ID:Location:

Collection Date: 09/20/16 12:10 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%):

### Results by Polychlorinated Biphenyls

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aroclor-1016	0.206 U	0.412	0.124	ug/L	1		10/07/16 02:35
Aroclor-1221	0.515 U	1.03	0.320	ug/L	1		10/07/16 02:35
Aroclor-1232	0.0515 U	0.103	0.0320	ug/L	1		10/07/16 02:35
Aroclor-1242	0.0515 U	0.103	0.0320	ug/L	1		10/07/16 02:35
Aroclor-1248	0.0515 U	0.103	0.0320	ug/L	1		10/07/16 02:35
Aroclor-1254	0.0515 U	0.103	0.0320	ug/L	1		10/07/16 02:35
Aroclor-1260	0.0515 U	0.103	0.0320	ug/L	1		10/07/16 02:35
Surrogates							
Decachlorobiphenyl (surr)	93	40-135		%	1		10/07/16 02:35

#### Batch Information

Analytical Batch: XGC9551 Analytical Method: SW8082A Analyst: S.G Analytical Date/Time: 10/07/16 02:35 Container ID: 1165622005-A

Prep Batch: XXX36469 Prep Method: SW3520C Prep Date/Time: 10/06/16 09:52 Prep Initial Wt./Vol.: 970 mL Prep Extract Vol: 1 mL

Print Date: 10/14/2016 5:15:05PM

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Client Sample ID: <b>APT-3-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622005 Lab Project ID: 1165622									
Results by Semivolatile Organic Fuels									
Parameter Diesel Range Organics	<u>Result Qual</u> 0.518 J	<u>LOQ/CL</u> 0.588	<u>DL</u> 0.176	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 10/03/16 19:00		
Surrogates									
5a Androstane (surr)	99.7	50-150		%	1		10/03/16 19:00		
Batch Information									
Analytical Batch: XFC12901 Analytical Method: AK102 Analyst: CRA Analytical Date/Time: 10/03/16 19:00 Container ID: 1165622005-N			Prep Batch: Prep Method Prep Date/Ti Prep Initial V Prep Extract	XXX36436 i: SW35200 ime: 10/03/ Vt./Vol.: 255 Vol: 1 mL	C 16 08:23 5 mL				
Parameter	Result Qual	LOQ/CL	DL	Units	DF	<u>Allowable</u> Limits	Date Analyzed		
Residual Range Organics	0.165 J	0.490	0.147	mg/L	1		10/03/16 19:00		
Surrogates									
n-Triacontane-d62 (surr)	98.8	50-150		%	1		10/03/16 19:00		
Batch Information									
Analytical Batch: XFC12901 Analytical Method: AK103 Analyst: CRA Analytical Date/Time: 10/03/16 19:00 Container ID: 1165622005-N			Prep Batch: Prep Method Prep Date/Ti Prep Initial V Prep Extract	rep Batch: XXX36436 rep Method: SW3520C rep Date/Time: 10/03/16 08:23 rep Initial Wt./Vol.: 255 mL rep Extract Vol: 1 mL					

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Client Sample ID: <b>APT-3-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622005 Lab Project ID: 1165622				Collection Date: 09/20/16 12:10 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 09/24/16 16:06					
84.7	50-150		%	1		09/24/16 16:06					
Analytical Batch: VFC13323 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/24/16 16:06 Container ID: 1165622005-F				Prep Batch: VXX29626 Prep Method: SW5030B Prep Date/Time: 09/24/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL							
	t 2 <u>Result Qual</u> 0.0500 U 84.7	t 2 R Result Qual 0.0500 U 0.100 84.7 50-150	t 2 Collection Da Received Da Matrix: Water Solids (%): Location: <u>Result Qual</u> 0.0500 U 0.100 <u>DL</u> 0.0310 84.7 50-150 Prep Batch: Prep Method Prep Date/Tin Prep Initial W Prep Extract	t 2       Collection Date: 09/20/ Received Date: 09/21/ Matrix: Water (Surface, Solids (%): Location:         Result Qual 0.0500 U       LOQ/CL 0.100       DL 0.0310       Units mg/L         84.7       50-150       %         Prep Batch: VXX296260 Prep Method: SW5030E Prep Date/Time: 09/24// Prep Initial Wt./vol.: 5 m Prep Extract Vol: 5 mL	t 2       Collection Date: 09/20/16 12:10 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Gro Solids (%): Location:         Result Qual 0.0500 U       LOQ/CL 0.100       DL 0.0310       Units mg/L       DE 1         84.7       50-150       %       1         Prep Batch: VXX29626 Prep Method: SW5030B Prep Date/Time: 09/24/16 06:00 Prep Initial Wt./vol.: 5 mL Prep Extract Vol: 5 mL	t2       Collection Date: 09/20/16 12:10 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:         Note:       Note:         Note:					

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Results of APT-3-0916									
Client Sample ID: <b>APT-3-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622005 Lab Project ID: 1165622	2	Collection Date: 09/20/16 12:10 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by waters Department						Allerinelete			
<u>Parameter</u> Chloride Fluoride Sulfate	<u>Result Qual</u> 41.6 3.03 3.88	LOQ/CL 2.00 0.200 0.200	<u>DL</u> 0.620 0.0620 0.0620	<u>Units</u> mg/L mg/L mg/L	<u>DF</u> 10 1 1	<u>Allowable</u> Limits	Date Analyzed 10/07/16 09:16 10/07/16 08:54 10/07/16 08:54		
Batch Information Analytical Batch: WIC5570 Analytical Method: EPA 300.0 Analyst: ACF Analytical Date/Time: 10/07/16 09:16 Container ID: 1165622005-Q		j j	Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	WXX11649 : METHOD me: 10/06/ /t./Vol.: 10 Vol: 10 mL	16 16:32 mL				
<u>Parameter</u> Chemical Oxygen Demand	<u>Result</u> Qual 102	<u>LOQ/CL</u> 20.0	<u>DL</u> 6.20	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 10/07/16 14:52		
Batch Information Analytical Batch: WSP5358 Analytical Method: EPA 410.4 Analyst: KBE Analytical Date/Time: 10/07/16 14:52 Container ID: 1165622005-I									
<u>Parameter</u> Total Organic Carbon	<u>Result Qual</u> 22.2	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/27/16 19:49		
Batch Information Analytical Batch: WTC2634 Analytical Method: SM 5310B Analyst: VDL Analytical Date/Time: 09/27/16 19:49 Container ID: 1165622005-J									
<u>Parameter</u> Turbidity	<u>Result Qual</u> 210	<u>LOQ/CL</u> 0.200	<u>DL</u> 0.100	<u>Units</u> NTU	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/22/16 08:40		
Print Date: 10/14/2016 5:15:05PM	0 West Potter Dr	ive Anchorage	, AK 95518	om		J flaggin	g is activated		
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Results of APT-3-0916	
Client Sample ID: APT_3_0916	Coller

	Results of APT-3-0916							
	Client Sample ID: <b>APT-3-0916</b> Client Project ID: <b>Kenai Wells Event</b> Lab Sample ID: 1165622005 Lab Project ID: 1165622	2	Ci Ri M Si Lo	ollection D eceived Da atrix: Wate olids (%): ocation:	Pate: 09/20/ ate: 09/21/1 er (Surface,	16 12:1( 6 13:45 Eff., Gro	) ; pund)	
>	Results by Waters Department			_				
	Batch Information Analytical Batch: WAT10743 Analytical Method: SM21 2130B Analyst: KBE Analytical Date/Time: 09/22/16 08:40 Container ID: 1165622005-R			_				
	2		1.00101			5-	Allowable	
	Parameter	Result Qual	LOQ/CL	DL 01.0	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
	Aikalinity	509	100	31.0	mg/L	10		10/03/16 12:45
	Batch Information							
	Analytical Batch: WTI4523 Analytical Method: SM21 2320B Analyst: KBE Analytical Date/Time: 10/03/16 12:45 Container ID: 1165622005-R							
	<u>Parameter</u> Total Solids	<u>Result</u> Qual 732	<u>LOQ/CL</u> 10.0	<u>DL</u> 10.0	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/26/16 14:26
	Batch Information Analytical Batch: STS5225 Analytical Method: SM21 2540B Analyst: KBE Analytical Date/Time: 09/26/16 14:26 Container ID: 1165622005-K							
	<u>Parameter</u> Total Dissolved Solids	<u>Result</u> Qual 709	LOQ/CL 10.0	<u>DL</u> 3.10	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/23/16 13:54
	Batch Information							
	Analytical Batch: STS5216 Analytical Method: SM21 2540C Analyst: KBE Analytical Date/Time: 09/23/16 13:54 Container ID: 1165622005-R							
	Parameter	<u>Result Qual</u>	LOQ/CL	<u>DL</u>	<u>Units</u>	<u>DF</u>	Allowable Limits	Date Analyzed
F	Print Date: 10/14/2016 5:15:05PM						J flagging	g is activated
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SGS				Sa USA	LNG Fa ampling a L-FG-GF	acilities Ground and Testing Re RZZZ-00-00201	Iwater Quality port - Event 2 16-004 Rev. 0 16-Dec-16
Results of <b>APT-3-0916</b> Client Sample ID: <b>APT-3-0916</b> Client Project ID: <b>Kenai Wells Event</b> Lab Sample ID: 1165622005 Lab Project ID: 1165622	Collection Date: 09/20/16 12:10 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by <b>Waters Department</b> Parameter Total Suspended Solids	Result Qual 80.7	<u>LOQ/CL</u> 6.67	<u>DL</u> 2.07	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/22/16 19:37
Batch Information Analytical Batch: STS5218 Analytical Method: SM21 2540D Analyst: LLP Analytical Date/Time: 09/22/16 19:37 Container ID: 1165622005-P							
<u>Parameter</u> pH	<u>Result Qual</u> 9.00	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.100	<u>Units</u> pH units	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/23/16 19:59
Batch Information Analytical Batch: WTI4514 Analytical Method: SM21 4500-H B Analyst: KBE Analytical Date/Time: 09/23/16 19:59 Container ID: 1165622005-R							
Parameter Total Kjeldahl Nitrogen	<u>Result Qual</u> 0.891 J	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	<u>Date Analyzed</u> 10/06/16 17:11
Batch Information Analytical Batch: WDA3869 Analytical Method: SM21 4500-N D Analyst: NEG Analytical Date/Time: 10/06/16 17:11 Container ID: 1165622005-I		F F F F	Prep Batch: Prep Method Prep Date/Tii Prep Initial W Prep Extract	WXX11647 : METHOD me: 10/05/16 /t./Vol.: 25 m Vol: 25 mL	5 18:40 L		
<u>Parameter</u> Ammonia-N	<u>Result Qual</u> 0.309	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/29/16 13:41

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Results of APT-3-0916							
Client Sample ID: <b>APT-3-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622005 Lab Project ID: 1165622		C R M S	collection Da deceived Da latrix: Water colids (%): ocation:	te: 09/20/ te: 09/21/ (Surface,	16 12:10 16 13:45 Eff., Grou	und)	
Results by Waters Department			]				
Batch Information							
Analytical Batch: WDA3863 Analytical Method: SM21 4500-NH3 G Analyst: NEG Analytical Date/Time: 09/29/16 13:41 Container ID: 1165622005-I			Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11639 : METHOD me: 09/29/′ ′t./Vol.: 6 m Vol: 6 mL	16 13:00 IL		
<u>Parameter</u> Nitrate-N Nitrite-N	<u>Result Qual</u> 0.250 U 0.250 U	<u>LOQ/CL</u> 0.500 0.500	<u>DL</u> 0.150 0.150	<u>Units</u> mg/L mg/L	<u>DF</u> 10 10	<u>Allowable</u> Limits	Date Analyzed 09/21/16 16:39 09/21/16 16:39
Analyst: KBE Analytical Date/Time: 09/21/16 16:39 Container ID: 1165622005-Q Parameter	Result Qual	LOQ/CI	DL	Units	DF	Allowable	Date Analyzed
Ortho Phosphate-P	4.49	0.100	0.0310	mg/L	10	Linits	09/21/16 17:43
Total Phosphorus	4.88	0.100	0.0310	mg/L	1		10/12/16 17:42
Batch Information							
Analytical Batch: WDA3858 Analytical Method: SM21 4500P-B,E Analyst: NEG Analytical Date/Time: 09/21/16 17:43 Container ID: 1165622005-L			Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11629 : SM21 450 me: 09/21/ 't./Vol.: 25 n Vol: 25 mL	00P-B,E 16 17:00 mL		
Analytical Batch: WDA3870 Analytical Method: SM21 4500P-B,E Analyst: NEG Analytical Date/Time: 10/12/16 17:42 Container ID: 1165622005-I			Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	WXX11653 : SM21 450 me: 10/07/ [,] (t./Vol.: 2.5 Vol: 25 mL	00P-B,E 16 16:15 mL		
Print Date: 10/14/2016 5:15:05PM						J flaggin	g is activated
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Client Sample ID: MW-39A-0916 Client Project ID: Kenai Wells Event 2 Lab Sample ID: 1165622006 Lab Project ID: 1165622					Collection Date: 09/19/16 10:31 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/24/16 16:25				
78.1	50-150		%	1		09/24/16 16:25				
	F F F F	Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	VXX29626 : SW5030E me: 09/24/′ /t./Vol.: 5 m Vol: 5 mL	3 16 06:00 IL						
	<b>t 2</b> <u>Result Qual</u> 0.0500 U 78.1	t 2 R M Since 0.0500 U <u>LOQ/CL</u> 0.100 78.1 50-150	t 2 Collection Da Received Da Matrix: Water Solids (%): Location: Collection Da Matrix: Water Solids (%): Location:	t 2       Collection Date: 09/19/ Received Date: 09/21/ Matrix: Water (Surface, Solids (%): Location:         Result Qual       LOQ/CL       DL       Units         0.0500 U       0.100       0.0310       mg/L         78.1       50-150       %         Prep Batch: VXX29626 Prep Method: SW5030E Prep Date/Time: 09/24/ Prep Initial Wt./vol.: 5 mL	t 2       Collection Date: 09/19/16 10:31 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Gro Solids (%): Location:         Result Qual       LOQ/CL       DL       Units       DF         0.0500 U       0.100       0.0310       mg/L       1         78.1       50-150       %       1         Prep Batch: VXX29626 Prep Method: SW5030B Prep Date/Time: 09/24/16 06:00 Prep Initial Wt./vol.: 5 mL	t 2 Collection Date: 09/19/16 10:31 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location: <u>Allowable</u> Limits 78.1 50-150 9% 1 Prep Batch: VXX29626 Prep Method: SW5030B Prep Date/Time: 09/24/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL				

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Client Sample ID: MW-39B-0916 Client Project ID: Kenai Wells Event 2 Lab Sample ID: 1165622007 Lab Project ID: 1165622			Collection Date: 09/19/16 12:42 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	Date Analyzed 09/24/16 16:44			
81.3	50-150		%	1		09/24/16 16:44			
		Prep Batch: Prep Method: Prep Date/Tir Prep Initial W Prep Extract	VXX29626 : SW5030E ne: 09/24/ 't./Vol.: 5 m Vol: 5 mL	l6 06:00 L					
	nt 2 <u>Result Qual</u> 0.0500 U 81.3	Result Qual     LOQ/CL       0.0500 U     0.100       81.3     50-150	t 2 Collection Da Received Da Matrix: Water Solids (%): Location: Collection Da Matrix: Water Solids (%): Location: Negative Solids (%): Location: Prep Batch: Prep Method: Prep Satch: Prep Initial W Prep Extract	Result Qual       LOQ/CL       DL       Units         0.0500 U       0.100       0.0310       mg/L         81.3       50-150       %         Prep Batch:       VXX29626         Prep Date/Time:       09/24/7         Prep Date/Time:       09/24/7         Prep Initial Wt./vol.:       5 mL	collection Date: 09/19/16 12:42         Received Date: 09/21/16 13:45         Matrix: Water (Surface, Eff., Grossolids (%):         Location:         Result Qual       LOQ/CL       DL       Units       DF         0.0500 U       0.100       0.0310       mg/L       1         81.3       50-150       %       1         Prep Batch: VXX29626       Prep Method: SW5030B       Prep Date/Time: 09/24/16 06:00         Prep Initial Wt./vol.: 5 mL       Prep Extract Vol: 5 mL	tr 2       Collection Date: 09/19/16 12:42 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:         Result Qual       LOQ/CL       DL       Units       DF       Allowable Limits         81.3       50-150       %       1         Prep Batch: VXX29626 Prep Method: SW5030B Prep Date/Time: 09/24/16 06:00 Prep Initial WL/Vol.: 5 mL Prep Extract Vol: 5 mL       Prep Extract Vol: 5 mL			

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Results of MW-62A-0916							
Client Sample ID: <b>MW-62A-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622008 Lab Project ID: 1165622	C R M S L						
Results by Volatile Fuels							
<u>Parameter</u> Gasoline Range Organics	<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	Allowable Limits	<u>Date Analyzed</u> 09/24/16 17:03
Surrogates							
4-Bromofluorobenzene (surr)	82.7	50-150		%	1		09/24/16 17:03
Batch Information							
Analytical Batch: VFC13323 Analytical Method: AK101 Analyst: ST Analytical Date/Time: 09/24/16 17:03 Container ID: 1165622008-A			Prep Batch: Prep Method Prep Date/Tin Prep Initial W Prep Extract	VXX29626 : SW5030E me: 09/24/ [/] /t./Vol.: 5 m Vol: 5 mL	3 16 06:00 IL		

Print Date: 10/14/2016 5:15:05PM

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Client Sample ID: <b>TB-08-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622009 Lab Project ID: 1165622					Collection Date: 09/19/16 10:31 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
		_								
<u>Result Qual</u> 0.0500 U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/24/16 17:22				
79.9	50-150		%	1		09/24/16 17:22				
	F F F	Prep Batch: Prep Method Prep Date/Til Prep Initial W Prep Extract	VXX29626 : SW5030E me: 09/24/′ /t./Vol.: 5 m Vol: 5 mL	3 16 06:00 IL						
	<b>t 2</b> <u>Result Qual</u> 0.0500 U 79.9	t 2 R Result Qual 0.0500 U 0.100 79.9 50-150	t 2 Collection Da Received Da Matrix: Water Solids (%): Location: Collection Da Matrix: Water Solids (%): Location: Prep Batch: Prep Method Prep Date/Tin Prep Initial W Prep Extract	t 2 Collection Date: 09/19/ Received Date: 09/21/ Matrix: Water (Surface, Solids (%): Location: <u>Result Qual</u> <u>LOQ/CL</u> <u>DL</u> <u>Units</u> 0.0500 U 0.100 0.0310 mg/L 79.9 50-150 % Prep Batch: VXX29626 Prep Method: SW5030E Prep Date/Time: 09/24/ Prep Initial Wt./Vol.: 5 mL	t 2       Collection Date: 09/19/16 10:31 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Gro Solids (%): Location:         Result Qual       LOQ/CL       DL       Units       DF         0.0500 U       0.100       0.0310       mg/L       1         79.9       50-150       %       1         Prep Batch: VXX29626 Prep Method: SW5030B Prep Date/Time: 09/24/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL	t 2 Collection Date: 09/19/16 10:31 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location: <u>Allowable</u> Limits 0.0500 U 0.100 0.0310 mg/L 1 <u>Allowable</u> Limits 0.0500 U 79.9 50-150 % 1 <u>Prep Batch: VXX29626</u> Prep Method: SW5030B Prep Date/Time: 09/24/16 06:00 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL				

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Results of APT-1-0916

Client Sample ID: **APT-1-0916** Client Project ID: **Kenai Wells Event 2** Lab Sample ID: 1165622010 Lab Project ID: 1165622 Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Dissolved Metals by ICP/MS

					Allowable	
Result Qual	LOQ/CL	DL	<u>Units</u>	DF	<u>Limits</u>	Date Analyzed
18.8	2.00	0.620	ug/L	2.5		10/08/16 14:32
20.7	0.250	0.0400	ug/L	2.5		10/08/16 14:32
0.250 U	0.500	0.150	ug/L	2.5		10/08/16 14:32
0.0250 U	0.0500	0.0250	ug/L	2.5		10/08/16 14:32
0.0250 U	0.0500	0.0150	ug/L	2.5		10/08/16 14:32
26.6	5.00	1.50	ug/L	2.5		10/08/16 14:32
0.0250 U	0.0500	0.0150	ug/L	2.5		10/08/16 14:32
23400	50.0	15.0	ug/L	2.5		10/08/16 14:32
0.913	0.0500	0.0150	ug/L	2.5		10/08/16 14:32
14.2	0.800	0.200	ug/L	2.5		10/08/16 14:32
0.0803	0.0200	0.0100	ug/L	2.5		10/08/16 14:32
0.202 J	0.500	0.200	ug/L	2.5		10/08/16 14:32
647	20.0	6.20	ug/L	2.5		10/08/16 14:32
0.0695 J	0.100	0.0310	ug/L	2.5		10/08/16 14:32
7980	20.0	6.20	ug/L	2.5		10/08/16 14:32
103	0.100	0.0310	ug/L	2.5		10/08/16 14:32
1.20	0.0500	0.0150	ug/L	2.5		10/08/16 14:32
0.823	0.620	0.0620	ug/L	2.5		10/08/16 14:32
6260	50.0	15.0	ug/L	2.5		10/08/16 14:32
0.500 U	1.00	0.310	ug/L	2.5		10/08/16 14:32
11900	100	31.0	ug/L	2.5		10/08/16 17:22
0.0100 U	0.0200	0.00620	ug/L	2.5		10/08/16 14:32
7860	100	31.0	ug/L	2.5		10/08/16 14:32
0.0100 U	0.0200	0.00620	ug/L	2.5		10/08/16 14:32
0.100 U	0.200	0.0620	ug/L	2.5		10/08/16 14:32
1.19	1.00	0.310	ug/L	2.5		10/08/16 14:32
36.6	3.10	0.400	ug/L	2.5		10/08/16 14:32
	Result Qual         18.8         20.7         0.250 U         0.0250 U         26.6         0.0250 U         23400         0.913         14.2         0.0803         0.202 J         647         0.0695 J         7980         103         1.20         0.823         6260         0.500 U         11900         0.0100 U         7860         0.0100 U         7860         0.100 U         7860         0.100 U         7860         0.100 U         7860         0.100 U         7860	Result QualLOQ/CL18.82.0020.70.2500.250 U0.5000.0250 U0.05000.0250 U0.050026.65.000.0250 U0.05002340050.00.9130.050014.20.8000.08030.02000.202 J0.50064720.00.0695 J0.100798020.01030.1001.200.05000.8230.620626050.00.500 U1.00119001000.0100 U0.020078601000.0100 U0.2001.191.0036.63.10	Result QualLOQ/CLDL18.82.000.62020.70.2500.04000.250 U0.5000.1500.0250 U0.05000.02500.0250 U0.05000.015026.65.001.500.0250 U0.05000.01502340050.015.00.9130.05000.01000.8030.02000.01000.202 J0.5000.20064720.06.200.0695 J0.1000.0310798020.06.201030.1000.03101.200.05000.01500.8230.6200.0620626050.015.00.500 U1.0031.00.0100 U0.02000.00620786010031.00.0100 U0.2000.00620786010031.00.0100 U0.2000.0620786010031.00.100 U0.2000.0620786010031.00.100 U0.2000.0620786010031.00.100 U0.2000.06201.191.000.31036.63.100.400	Result QualLOQ/CLDLUnits18.82.000.620ug/L20.70.2500.0400ug/L0.250 U0.5000.150ug/L0.0250 U0.05000.0250ug/L0.0250 U0.05000.0150ug/L26.65.001.50ug/L2340050.015.0ug/L0.9130.05000.0150ug/L0.202 J0.5000.0100ug/L0.08030.02000.0100ug/L0.695 J0.1000.0310ug/L0.695 J0.1000.0310ug/L1200.05000.0150ug/L0.8230.6200.0620ug/L0.500 U1.000.310ug/L1190010031.0ug/L0.100 U0.02000.00620ug/L119010031.0ug/L11901.000.310ug/L0.100 U0.2000.0620ug/L1191.000.310ug/L0.100 U0.2000.0620ug/L0.100 U0.2000.0620ug/L1.191.000.310ug/L0.100 U0.2000.0620ug/L0.100 U0.2000.0620ug/L1.191.000.310ug/L0.100 U0.2000.0620ug/L0.100 U0.2000.0620ug/L0.100 U0.2000.0620ug/L0.100 U	$\begin{array}{c c c c c c c c c c c c c c c c c c c $	Result Qual         LOQ/CL         DL         Units         DF         Limits           18.8         2.00         0.620         ug/L         2.5           20.7         0.250         0.0400         ug/L         2.5           0.250 U         0.500         0.150         ug/L         2.5           0.0250 U         0.0500         0.0250         ug/L         2.5           0.0250 U         0.0500         0.0150         ug/L         2.5           26.6         5.00         1.50         ug/L         2.5           0.0250 U         0.0500         0.0150         ug/L         2.5           28400         50.0         15.0         ug/L         2.5           0.913         0.0500         0.0150         ug/L         2.5           0.414.2         0.800         0.200         ug/L         2.5           0.202 J         0.500         0.0150         ug/L         2.5           0.0695 J         0.100         0.0310         ug/L         2.5           103         0.100         0.0310         ug/L         2.5           1.20         0.500         0.0150         ug/L         2.5           0.523

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Results of APT-1-0916							
Client Sample ID: <b>APT-1-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622010 Lab Project ID: 1165622	Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:						
Results by Dissolved Metals by ICP/N	IS		_				
Batch Information							
Analytical Batch: MMS9568 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 10/08/16 14:32 Container ID: 1165622010-B			Prep Batch: Prep Metho Prep Date/T Prep Initial V Prep Extrac	MXX30245 d: E200.2 Time: 10/03/7 Wt./Vol.: 50 t Vol: 10 mL	16 07:43 mL		
Analytical Batch: MMS9569 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 10/08/16 17:22 Container ID: 1165622010-B			Prep Batch: Prep Metho Prep Date/T Prep Initial \ Prep Extrac	MXX30245 d: E200.2 Time: 10/03/ Wt./Vol.: 50 n t Vol: 10 mL	16 07:43 nL		
<u>Parameter</u> Hardness as CaCO3	<u>Result Qual</u> 91.2	<u>LOQ/CL</u> 1.00	<u>DL</u> 1.00	<u>Units</u> mg/L	<u>DF</u> 2.5	Allowable Limits	Date Analyzed 10/08/16 14:32
Batch Information Analytical Batch: MMS9568 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 10/08/16 14:32 Container ID: 1165622010-B			Prep Batch: Prep Metho Prep Date/T Prep Initial \ Prep Extrac	MXX30245 d: E200.2 Time: 10/03/ Wt./Vol.: 50 ( t Vol: 10 mL	16 07:43 mL		

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Results of APT-1-0916							
Client Sample ID: <b>APT-1-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622010 Lab Project ID: 1165622	C R M S L						
Results by Waters Department							
Parameter Total Organic Carbon,Dissolved	<u>Result Qual</u> 1.70	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 10/06/16 18:03
Batch Information							
Analytical Batch: WTC2637 Analytical Method: SM 5310B Analyst: TMA Analytical Date/Time: 10/06/16 18:03 Container ID: 1165622010-A							

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Results of APT-9-0916

Client Sample ID: **APT-9-0916** Client Project ID: **Kenai Wells Event 2** Lab Sample ID: 1165622013 Lab Project ID: 1165622 Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Dissolved Metals by ICP/MS

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	DF	Limits	Date Analyzed
Aluminum	21.7	2.00	0.620	ug/L	2.5		10/08/16 14:21
Antimony	0.926	0.0500	0.0150	ug/L	2.5		10/08/16 14:21
Arsenic	14.2	0.800	0.200	ug/L	2.5		10/08/16 14:21
Barium	20.4	0.250	0.0400	ug/L	2.5		10/08/16 14:21
Beryllium	0.0250 U	0.0500	0.0250	ug/L	2.5		10/08/16 14:21
Bismuth	0.0250 U	0.0500	0.0150	ug/L	2.5		10/08/16 14:21
Boron	27.6	5.00	1.50	ug/L	2.5		10/08/16 14:21
Cadmium	0.0250 U	0.0500	0.0150	ug/L	2.5		10/08/16 14:21
Calcium	24000	50.0	15.0	ug/L	2.5		10/08/16 14:21
Chromium	0.250 U	0.500	0.150	ug/L	2.5		10/08/16 14:21
Cobalt	0.0776	0.0200	0.0100	ug/L	2.5		10/08/16 14:21
Copper	0.216 J	0.500	0.200	ug/L	2.5		10/08/16 14:21
Iron	631	20.0	6.20	ug/L	2.5		10/08/16 14:21
Lead	0.0500 U	0.100	0.0310	ug/L	2.5		10/08/16 14:21
Magnesium	7840	20.0	6.20	ug/L	2.5		10/08/16 14:21
Manganese	103	0.100	0.0310	ug/L	2.5		10/08/16 14:21
Molybdenum	1.21	0.0500	0.0150	ug/L	2.5		10/08/16 14:21
Nickel	0.806	0.620	0.0620	ug/L	2.5		10/08/16 14:21
Potassium	6160	50.0	15.0	ug/L	2.5		10/08/16 14:21
Selenium	0.500 U	1.00	0.310	ug/L	2.5		10/08/16 14:21
Silicon	11400	100	31.0	ug/L	2.5		10/08/16 14:21
Silver	0.0100 U	0.0200	0.00620	ug/L	2.5		10/08/16 14:21
Sodium	7600	100	31.0	ug/L	2.5		10/08/16 14:21
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		10/08/16 14:21
Tin	0.100 U	0.200	0.0620	ug/L	2.5		10/08/16 14:21
Vanadium	1.27	1.00	0.310	ug/L	2.5		10/08/16 14:21
Zinc	34.0	3.10	0.400	ug/L	2.5		10/08/16 14:21
Batch Information							
Analytical Batch: MMS9568		F	Prep Batch: N	/XX30245			
Analytical Method: 200.8 Low Level		F	Prep Method:	E200.2	0.07.46		
Analyst: VDL Analytical Date/Time: 10/08/16 14·21		ŀ	-rep Date/Tim Prep Initial Wt	ie: 10/03/1 /Vol : 50 r	nl 07:43		

Prep Extract Vol: 10 mL

Parameter Hardness as CaCO3	<u>Result</u> Qual 92.2	<u>LOQ/CL</u> 1.00	<u>DL</u> 1.00	<u>Units</u> mg/L	<u>DF</u> 2.5	<u>Allowable</u> Limits	Date Analyzed 10/08/16 14:21	
Print Date: 10/14/2016 5:15:05PM						J flaggin	g is activated	_
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Container ID: 1165622013-B



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## Results of APT-9-0916

Client Sample ID: **APT-9-0916** Client Project ID: **Kenai Wells Event 2** Lab Sample ID: 1165622013 Lab Project ID: 1165622 Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

#### Results by Dissolved Metals by ICP/MS

#### **Batch Information**

Analytical Batch: MMS9568 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 10/08/16 14:21 Container ID: 1165622013-B Prep Batch: MXX30245 Prep Method: E200.2 Prep Date/Time: 10/03/16 07:43 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/14/2016 5:15:05PM

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Results of <b>APT-9-0916</b> Client Sample ID: <b>APT-9-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622013 Lab Project ID: 1165622	2	Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by Waters Department           Parameter           Total Organic Carbon, Dissolved	<u>Result Qual</u> 1.45	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	Date Analyzed 09/27/16 20:03		
Batch Information Analytical Batch: WTC2634 Analytical Method: SM 5310B Analyst: VDL Analytical Date/Time: 09/27/16 20:03 Container ID: 1165622013-A									
Print Date: 10/14/2016 5:15:05PM						flaggin	a is activated		

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Results of APT-3-0916

Client Sample ID: **APT-3-0916** Client Project ID: **Kenai Wells Event 2** Lab Sample ID: 1165622014 Lab Project ID: 1165622

## Results by Dissolved Metals by ICP/MS

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

						Allowable	
Parameter	Result Qual	LOQ/CL	DL	<u>Units</u>	<u>DF</u>	Limits	Date Analyzed
Aluminum	380	2.00	0.620	ug/L	2.5		10/08/16 14:24
Antimony	1.90	0.0500	0.0150	ug/L	2.5		10/08/16 14:24
Arsenic	57.5	0.800	0.200	ug/L	2.5		10/08/16 14:24
Barium	12.3	0.250	0.0400	ug/L	2.5		10/08/16 14:24
Beryllium	0.0339 J	0.0500	0.0250	ug/L	2.5		10/08/16 14:24
Bismuth	0.0368 J	0.0500	0.0150	ug/L	2.5		10/08/16 14:24
Boron	980	200	60.0	ug/L	100		10/08/16 15:22
Cadmium	0.0341 J	0.0500	0.0150	ug/L	2.5		10/08/16 14:24
Calcium	2570	50.0	15.0	ug/L	2.5		10/08/16 14:24
Chromium	4.26	0.500	0.150	ug/L	2.5		10/08/16 14:24
Cobalt	0.597	0.0200	0.0100	ug/L	2.5		10/08/16 14:24
Copper	7.36	0.500	0.200	ug/L	2.5		10/08/16 14:24
Iron	937	20.0	6.20	ug/L	2.5		10/08/16 14:24
Lead	0.861	0.100	0.0310	ug/L	2.5		10/08/16 14:24
Magnesium	2130	20.0	6.20	ug/L	2.5		10/08/16 14:24
Manganese	35.3	0.100	0.0310	ug/L	2.5		10/08/16 14:24
Molybdenum	43.1	0.0500	0.0150	ug/L	2.5		10/08/16 14:24
Nickel	3.71	0.620	0.0620	ug/L	2.5		10/08/16 14:24
Potassium	6990	50.0	15.0	ug/L	2.5		10/08/16 14:24
Selenium	0.500 U	1.00	0.310	ug/L	2.5		10/08/16 14:24
Silicon	5850	100	31.0	ug/L	2.5		10/08/16 14:24
Silver	0.0129 J	0.0200	0.00620	ug/L	2.5		10/08/16 14:24
Sodium	184000	4000	1240	ug/L	100		10/08/16 15:22
Thallium	0.0100 U	0.0200	0.00620	ug/L	2.5		10/08/16 14:24
Tin	0.100 U	0.200	0.0620	ug/L	2.5		10/08/16 14:24
Vanadium	12.5	1.00	0.310	ug/L	2.5		10/08/16 14:24
Zinc	114	3.10	0.400	ug/L	2.5		10/08/16 14:24
				0	-		
Batch Information							
Analytical Batch: MMS9568 Analytical Method: 200.8 Low Level Analyst: VDL Analytical Date/Time: 10/08/16 14:24 Container ID: 1165622014-B		F F F F	Prep Batch: M Prep Method: Prep Date/Tim Prep Initial Wt Prep Extract V	/IXX30245 E200.2 ne: 10/03/1 ./Vol.: 50 r /ol: 10 mL	6 07:43 nL		
			51			Allowable	
<u>Parameter</u>	Result Qual	LOQ/CL	DL	<u>Units</u> "	DF	<u>Limits</u>	Date Analyzed
Hardness as CaCO3	15.2	1.00	1.00	mg/L	2.5		10/08/16 14:24
Print Date: 10/14/2016 5:15:05PM						J flaggin	g is activated
SGS North America Inc	00 West Potter Dri	ve Anchorage	, AK 95518				-
t	907.562.2343 <b>f</b> 90	7.561.5301 w	ww.us.sgs.co	m		Membe	er of SGS Group
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## Results of APT-3-0916

Client Sample ID: **APT-3-0916** Client Project ID: **Kenai Wells Event 2** Lab Sample ID: 1165622014 Lab Project ID: 1165622 Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:

## Results by Dissolved Metals by ICP/MS

## **Batch Information**

Analytical Batch: MMS9568 Analytical Method: SM21 2340B Analyst: VDL Analytical Date/Time: 10/08/16 14:24 Container ID: 1165622014-B Prep Batch: MXX30245 Prep Method: E200.2 Prep Date/Time: 10/03/16 07:43 Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/14/2016 5:15:05PM

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Results of APT-3-0916									
Client Sample ID: <b>APT-3-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165622014 Lab Project ID: 1165622	2	Collection Date: 09/20/16 10:32 Received Date: 09/21/16 13:45 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:							
Results by Waters Department									
Parameter Total Organic Carbon, Dissolved	<u>Result Qual</u> 14.9	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	<u>DF</u> 1	<u>Allowable</u> Limits	<u>Date Analyzed</u> 09/27/16 20:19		
Batch Information									
Analytical Batch: WTC2634 Analytical Method: SM 5310B Analyst: VDL Analytical Date/Time: 09/27/16 20:19 Container ID: 1165622014-A									

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## Method Blank

Blank ID: MB for HBN 1744485 [MXX/30245] Blank Lab ID: 1355979 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165622001, 1165622004, 1165622005, 1165622010, 1165622013, 1165622014

Results by 200.8 Low	Level			
Parameter	Results	LOQ/CL	DL	<u>Units</u>
Aluminum	1.00U	2.00	0.620	ug/L
Antimony	0.0250U	0.0500	0.0150	ug/L
Arsenic	0.400U	0.800	0.200	ug/L
Barium	0.125U	0.250	0.0400	ug/L
Beryllium	0.0250U	0.0500	0.0250	ug/L
Bismuth	0.0250U	0.0500	0.0150	ug/L
Boron	2.50U	5.00	1.50	ug/L
Cadmium	0.0250U	0.0500	0.0150	ug/L
Calcium	25.0U	50.0	15.0	ug/L
Chromium	0.250U	0.500	0.150	ug/L
Cobalt	0.0100U	0.0200	0.0100	ug/L
Copper	0.250U	0.500	0.200	ug/L
Iron	10.0U	20.0	6.20	ug/L
Lead	0.0500U	0.100	0.0310	ug/L
Magnesium	10.0U	20.0	6.20	ug/L
Manganese	0.0500U	0.100	0.0310	ug/L
Molybdenum	0.0250U	0.0500	0.0150	ug/L
Nickel	0.310U	0.620	0.0620	ug/L
Potassium	25.0U	50.0	15.0	ug/L
Selenium	0.500U	1.00	0.310	ug/L
Silicon	50.0U	100	31.0	ug/L
Silver	0.0100U	0.0200	0.00620	ug/L
Sodium	50.0U	100	31.0	ug/L
Thallium	0.0100U	0.0200	0.00620	ug/L
Tin	0.100U	0.200	0.0620	ug/L
Vanadium	0.500U	1.00	0.310	ug/L
Zinc	0.531J	3.10	0.400	ug/L

#### **Batch Information**

Analytical Batch: MMS9568 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Analytical Date/Time: 10/8/2016 1:43:25PM Prep Batch: MXX30245 Prep Method: E200.2 Prep Date/Time: 10/3/2016 7:43:02AM Prep Initial Wt./Vol.: 50 mL Prep Extract Vol: 10 mL

Print Date: 10/14/2016 5:15:23PM

SGS North America Inc.



#### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165622 [MXX30245] Blank Spike Lab ID: 1355980 Date Analyzed: 10/08/2016 13:46

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

1165622001, 1165622004, 1165622005, 1165622010, 1165622013, 1165622014

#### Results by 200.8 Low Level

	В	lank Spike (	(ug/L)	
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>
Aluminum	50	51.0	102	(85-115)
Antimony	5	5.39	108	(85-115)
Arsenic	25	25.2	101	(85-115)
Barium	25	24.8	99	(85-115)
Beryllium	12.5	13.0	104	(85-115)
Bismuth	12.5	12.5	100	(85-115)
Boron	50	51.0	102	(85-115)
Cadmium	12.5	12.8	103	(85-115)
Calcium	5000	4520	90	(85-115)
Chromium	12.5	12.1	97	(85-115)
Cobalt	12.5	12.4	99	(85-115)
Copper	25	24.3	97	(85-115)
Iron	500	498	100	(85-115)
Lead	5	5.06	101	(85-115)
Magnesium	5000	4860	97	(85-115)
Manganese	50	51.3	103	(85-115)
Molybdenum	12.5	12.9	103	(85-115)
Nickel	12.5	12.2	98	(85-115)
Potassium	5000	5020	100	(85-115)
Selenium	25	24.5	98	(85-115)
Silicon	2500	2610	104	(85-115)
Silver	5	5.26	105	(85-115)
Sodium	5000	4990	100	(85-115)
Thallium	2.5	2.54	102	(85-115)
Tin	12.5	12.9	104	(85-115)
Vanadium	25	24.8	99	(85-115)
Zinc	50	49.5	99	(85-115)

# **Batch Information**

Analytical Batch: MMS9568 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Prep Batch: MXX30245 Prep Method: E200.2 Prep Date/Time: 10/03/2016 07:43 Spike Init Wt./Vol.: 50 ug/L Extract Vol: 10 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/14/2016 5:15:25PM

SGS North America Inc.



#### Matrix Spike Summary

Original Sample ID: 1355996 MS Sample ID: 1355997 MS MSD Sample ID: 1355998 MSD

## Analysis Date: 10/08/2016 13:55 Analysis Date: 10/08/2016 13:58 Analysis Date: 10/08/2016 14:01 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 1165622004, 1165622005, 1165622010, 1165622013, 1165622014

Results by 200.8 Low Level			_							
		Mat	rix Spike (u	g/L)	Spike	Duplicate	(ug/L)			
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Aluminum	242	50.0	452	419 *	50.0	400	316 "	70-130	12.10	(< 20)
Antimony	0.978	5.00	6.13	103	5.00	6.03	101	70-130	1.80	(< 20)
Arsenic	19.7	25.0	44.7	100	25.0	43.3	94	70-130	3.20	(< 20)
Barium	25.3	25.0	51	103	25.0	50.5	101	70-130	1.00	(< 20)
Beryllium	0.0250U	12.5	11.7	94	12.5	11.7	94	70-130	0.00	(< 20)
Bismuth	0.0250U	12.5	12.4	99	12.5	11.7	93	70-130	6.10	(< 20)
Boron	26.9	50.0	72.1	90	50.0	73.6	93	70-130	2.10	(< 20)
Cadmium	0.0250U	12.5	12.5	100	12.5	12.2	98	70-130	2.40	(< 20)
Calcium	24300	5000	27700	68 *	5000	26200	40 "	70-130	5.30	(< 20)
Chromium	0.250U	12.5	13.2	106	12.5	13.1	105	70-130	0.86	(< 20)
Cobalt	0.167	12.5	13	102	12.5	12.9	102	70-130	0.58	(< 20)
Copper	0.682	25.0	24.7	96	25.0	24.4	95	70-130	1.30	(< 20)
Iron	2710	500	3330	125	500	3140	88	70-130	5.70	(< 20)
Lead	0.204	5.00	5.34	103	5.00	4.98	96	70-130	7.00	(< 20)
Magnesium	8630	5000	12800	83	5000	12700	81	70-130	0.90	(< 20)
Manganese	118	50.0	169	101	50.0	165	95	70-130	2.00	(< 20)
Molybdenum	1.16	12.5	14.8	109	12.5	14.4	106	70-130	3.00	(< 20)
Nickel	1.28	12.5	13.9	101	12.5	13.7	99	70-130	1.70	(< 20)
Potassium	6390	5000	11500	102	5000	11000	92	70-130	4.40	(< 20)
Selenium	0.500U	25.0	24.7	99	25.0	24.0	96	70-130	2.80	(< 20)
Silver	0.0100U	5.00	5.25	105	5.00	5.04	101	70-130	4.00	(< 20)
Sodium	8160	5000	12700	91	5000	12600	89	70-130	0.89	(< 20)
Thallium	0.0100U	2.50	2.57	103	2.50	2.43	97	70-130	5.70	(< 20)
Tin	0.100U	12.5	12.2	97	12.5	12.2	98	70-130	0.26	(< 20)
Vanadium	4.12	25.0	30.8	107	25.0	30.2	104	70-130	1.80	(< 20)
Zinc	277	50.0	302	49 *	50.0	301	48 7	70-130	0.20	(< 20)

#### **Batch Information**

Analytical Batch: MMS9568 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Analytical Date/Time: 10/8/2016 1:58:06PM

Prep Batch: MXX30245 Prep Method: LL Digest for Metals on ICP-MS Prep Date/Time: 10/3/2016 7:43:02AM Prep Initial Wt./Vol.: 50.00mL Prep Extract Vol: 10.00mL

Print Date: 10/14/2016 5:15:26PM

SGS North America Inc.



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## Matrix Spike Summary

Original Sample ID: 1356000 MS Sample ID: 1356001 MS MSD Sample ID: 1356002 MSD

## Analysis Date: 10/08/2016 14:32 Analysis Date: 10/08/2016 14:35 Analysis Date: 10/08/2016 14:38 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 1165622004, 1165622005, 1165622010, 1165622013, 1165622014

Results by 200.8 Low Level										
		Mat	rix Spike (u	g/L)	Spike	Duplicate	(ug/L)			
Parameter	Sample	Spike	Result	<u>Rec (%)</u>	Spike	Result	Rec (%)	CL	<u>RPD (%)</u>	RPD CL
Aluminum	18.8	50.0	86.9	136 *	50.0	83.8	130	70-130	3.60	(< 20)
Antimony	0.913	5.00	6.14	105	5.00	6.30	108	70-130	2.50	(< 20)
Arsenic	14.2	25.0	40.3	104	25.0	41.5	109	70-130	2.90	(< 20)
Barium	20.7	25.0	45.1	97	25.0	47.4	107	70-130	5.00	(< 20)
Beryllium	0.0250U	12.5	11.9	95	12.5	11.9	95	70-130	0.19	(< 20)
Bismuth	0.0250U	12.5	12.1	97	12.5	12.7	102	70-130	4.60	(< 20)
Boron	26.6	50.0	75.1	97	50.0	74.9	97	70-130	0.17	(< 20)
Cadmium	0.0250U	12.5	12.3	98	12.5	12.9	103	70-130	4.80	(< 20)
Calcium	23400	5000	26200	57 *	5000	28900	110	70-130	9.60	(< 20)
Chromium	0.250U	12.5	13.1	105	12.5	13.1	105	70-130	0.20	(< 20)
Cobalt	0.0803	12.5	13.1	104	12.5	13.6	108	70-130	3.80	(< 20)
Copper	0.202J	25.0	24	95	25.0	24.8	98	70-130	3.30	(< 20)
Iron	647	500	1210	113	500	1230	117	70-130	1.40	(< 20)
Lead	0.0695J	5.00	5.07	100	5.00	5.37	106	70-130	5.80	(< 20)
Magnesium	7980	5000	12400	89	5000	12800	96	70-130	3.00	(< 20)
Manganese	103	50.0	157	108	50.0	165	124	70-130	4.90	(< 20)
Molybdenum	1.20	12.5	14.8	109	12.5	15.9	117	70-130	7.00	(< 20)
Nickel	0.823	12.5	13.5	101	12.5	13.8	104	70-130	2.70	(< 20)
Potassium	6260	5000	10700	88	5000	11600	107	70-130	8.40	(< 20)
Selenium	0.500U	25.0	24.2	97	25.0	25.8	103	70-130	6.60	(< 20)
Silver	0.0100U	5.00	5.18	104	5.00	5.80	116	70-130	11.30	(< 20)
Sodium	7860	5000	12400	90	5000	13000	102	70-130	4.80	(< 20)
Thallium	0.0100U	2.50	2.54	102	2.50	2.66	106	70-130	4.50	(< 20)
Tin	0.100U	12.5	12.7	101	12.5	13.1	105	70-130	3.50	(< 20)
Vanadium	1.19	25.0	29.3	112	25.0	29.4	113	70-130	0.33	(< 20)
Zinc	36.6	50.0	81.7	90	50.0	86.7	100	70-130	6.00	(< 20)

#### **Batch Information**

Analytical Batch: MMS9568 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Analytical Date/Time: 10/8/2016 2:35:52PM

Prep Batch: MXX30245 Prep Method: LL Digest for Metals on ICP-MS Prep Date/Time: 10/3/2016 7:43:02AM Prep Initial Wt./Vol.: 50.00mL Prep Extract Vol: 10.00mL

Print Date: 10/14/2016 5:15:26PM

SGS North America Inc.

Perch Spike Summary         Original Sample ID: 1356000 MKS Sample ID: 3356003 BND Analysis Date: 1008/2016 14:32 Analysis Date: 1008/2016 14:41 Analysis Date: Matrix: Water (Surface, Eff., Ground)         OC for Samples:       1185622001, 1185622005, 1185622010, 1185622013, 1185622014         Results by 200.8 Low Lovel         Matrix: Spike (ug1.)       Spike Duplcate (ug1.)         Parameter       Sample Science, Eff., Ground)         Analysis Date:       10.8         Parameter       Sample Science, Eff., Ground)         Parameter       Sample Science, Eff., Ground)         Parameter       Sample Science, Eff., Ground)         Parameter       Sample Science, Saite Result Res.(5)         Parameter       Sample Science, Saite Result Res.(5)         Analysical Batch:       Matrix: MDS/S68         Analysical Date/Time:       10.8/2016 2.41.41PM         Prep Batch:       MOX30245         Prep Date/Time:       10.8/2016 2.41.41PM         Prep Date/Time:       10.8/2016 2.41.41PM         Prep Date:       10.0/2016 2	SGS						Sa USA	LNG Facili ampling and L-FG-GRZZ	ties Groun Testing R Z-00-0020	Confider Idwater Qua eport - Ever 016-004 Rev 16-Dec	tial Ility nt 2 /. 0 -16
Original Sample ID: 1356000 MS Sample ID: 135603 BND         Analysis Date: 10/08/2016 14:32 Analysis Date: 10/08/2016 14:41 Analysis Date: 10/08/2016 14:41 Matrix Swike (ugl.)           GC for Samples:         1165622004, 1165622005, 1165622010, 1165622013, 1165622014           Results by 200.8 Low Level         Matrix Swike (ugl.)         Spike Duplicate (ugl.)           Parameter         Sample         Soile         Result Soile           Analysis Date:         10/08/2016 14:32 Analysis Date: 10/08/2016 14:41         Prop Date: 10/08/2016 14:41           Analysis Date:         1165622004, 1165622005, 1165622010, 1165622010, 1165622014         Prop Date: 10/07/08/2016 14:32           Results by 200.8 Low Level         Prop Date: 10/02/016 2:41:41PM         Prep Batch: MXX30245           Analytical Date/Time:         10/02/016 2:41:41PM         Prep Extract Vol: 10:00mL           Prep Date:         10/02/016 2:41:41PM         Prep Extract Vol: 10:00mL	Bench Spike Summar	у									
Results by 200.8 Low Level       Matrix Spike (ug/L)       Spike Duplicate (ug/L)         arameter       Sample       Spike Result       Rec.(%)       CL       RPD.(%)       RPC.(%)         Batch Information       Analytical Batch: MMS3568       Prep Batch: MX30245       Prep Method: L0302016       P	Original Sample ID: 13 MS Sample ID: 13560 MSD Sample ID: QC for Samples: 1165	56000 03 BND 5622001, 11656220	04, 116562	22005, 116	5622010, 11	Analysis Analysis Analysis Matrix: 65622013	2 Date: 10 2 Date: 10 3 Date: Water (Su 3, 1165622	0/08/2016 0/08/2016 urface, Eff. 2014	14:32 14:41 , Ground)	)	
Matrix Splike (togL)         Splike Duplicate (togL)           Barameter         Sample         Solution         Solution         CL         RED_(%)         CL         RED_(%)         REP           Numinum         18.8         60.0         67.1         97         70-130         RED_(%)         CL         RED_(%)         REP           Patch Information	Results by 200.8 Low I	Level									
Tarameter       Sample       Spike       Result       Rec (2a)       Spike       Result       R			Ma	atrix Spike	(ug/L)	Spik	e Duplicate	e (ug/L)		///	
Batch Information         Analytical Batch::::MXS9588         Analytical Method:::20.8 (zow Level         Instrument:: Perkin Elmer Nexton P5         Analytical Date/Time:::10/8/2016::2:41:41PM         Prep Batch:::MXX30245         Prep Method:::10:0:0:00mL         Prep Initial WUX/0i:: 60:00mL	<u>'arameter</u> Numinum	<u>Sample</u> 18.8	<u>Spike</u> 50.0	<u>Result</u> 67.1	<u>Rec (%)</u> 97	<u>Spike</u>	<u>Result</u>	<u>Rec (%)</u>	<u>CL</u> 70-130	<u>RPD (%)</u>	<u>RPD CL</u>
Analytical Batch: MMS9568 Analytical Method: 20.8 Low Level Instrument: Perkin Einer Neklon P5 Analytical Date/Time: 10/8/2016 2:41:41PM Prep Batch: MXX30245 Prep Method: LL Digest for Metals on (CP-MS Prep Date/Time: 10/3/2016 7:43:02AM Prep Initial WL/Voi: 50.00mL Prep Extract Voi: 10.00mL Prep Extract Voi: 10.00mL	Batch Information										
int Date: 10/14/2016 5:15:26PM SGS North America Inc. 200 West Potter Drive Anchorage, AK 95518 1907.562.2343 f 907.561.5301 www.us.sgs.com	Analytical Batch: MMS Analytical Method: 200 Instrument: Perkin Eln Analyst: VDL Analytical Date/Time:	59568 0.8 Low Level ner Nexlon P5 10/8/2016 2:41:41	PM		Prep Prep Prep Prep Prep	D Batch: I D Method: D Date/Tin D Initial W D Extract V	MXX30245 LL Digest ne: 10/3/2 t./Vol.: 50. Vol: 10.00	t for Metals 016 7:43:0 00mL mL	on ICP-MS )2AM	6	
rint Date: 10/14/2016 5:15:26PM 200 West Potter Drive Anchorage, AK 95518 1907.562 2343 f 907.561.5301 www.us.sgs.com											
Trint Date: 10/14/2016 5:15:26PM          Yint Date: 10/14/2016 5:15:26PM         Z00 West Potter Drive Anchorage, AK 95518 1907, 561, 5301 www.us.sqs.com											
Print Date: 10/14/2016 5:15:26PM 2000 West Potter Drive Anchorage, AK 95518 1907.562.23431 907.561.5301 www.us.sgs.com											
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Print Date: 10/14/2016 5:15:26PM SGS North America Inc. 200 West Potter Drive Anchorage, AK 95518 t 907.562.2343 f 907.561.5301 www.us.sgs.com											
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SGS North America Inc. 200 West Potter Drive Anchorage, AK 95518 t 907.562.2343 f 907.561.5301 www.us.sgs.com	Print Date: 10/14/2016 5:15:2	26PM									
	SGS North Ar	merica Inc. 200 t 90	) West Pot )7.562.234	ter Drive A 3 <b>f</b> 907.56	nchorage, Al 1.5301 www	< 95518 .us.sgs.c	om				0



#### Billable Matrix Spike Summary

Original Sample ID: 1165622001 MS Sample ID: 1165622002 BMS MSD Sample ID: 1165622003 BMSD

QC for Samples:

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Analysis Date: 10/08/2016 13:55 Analysis Date: 10/08/2016 13:58 Analysis Date: 10/08/2016 14:01 Matrix: Water (Surface, Eff., Ground)

Results by <b>200.8 Low Level</b>													
		Ma	trix Spike	(ug/L)	Spik	e Duplicate	e (ug/L)		CL         RPD (%)           10-130         12.10           10-130         1.80           10-130         3.20           10-130         1.00           10-130         1.00           10-130         0.00           10-130         0.00           10-130         2.10           10-130         2.40           10-130         5.30           10-130         0.86           10-130         0.58           10-130         5.70           10-130         5.70           10-130         2.00           10-130         2.00           10-130         3.00           10-130         3.00				
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (%)	CL	<u>RPD (%)</u>	RPD CL			
Aluminum	242	50.0	452	419 *	50.0	400	316 *	70-130	12.10	(< 20)			
Antimony	0.978	5.00	6.13	103	5.00	6.03	101	70-130	1.80	(< 20)			
Arsenic	19.7	25.0	44.7	100	25.0	43.3	94	70-130	3.20	(< 20)			
Barium	25.3	25.0	51	103	25.0	50.5	101	70-130	1.00	(< 20)			
Beryllium	0.0250U	12.5	11.7	94	12.5	11.7	94	70-130	0.00	(< 20)			
Bismuth	0.0250U	12.5	12.4	99	12.5	11.7	93	70-130	6.10	(< 20)			
Boron	26.9	50.0	72.1	90	50.0	73.6	93	70-130	2.10	(< 20)			
Cadmium	0.0250U	12.5	12.5	100	12.5	12.2	98	70-130	2.40	(< 20)			
Calcium	24300	5000	27700	68 *	5000	26200	40 *	70-130	5.30	(< 20)			
Chromium	0.250U	12.5	13.2	106	12.5	13.1	105	70-130	0.86	(< 20)			
Cobalt	0.167	12.5	13	102	12.5	12.9	102	70-130	0.58	(< 20)			
Copper	0.682	25.0	24.7	96	25.0	24.4	95	70-130	1.30	(< 20)			
Iron	2710	500	3330	125	500	3140	88	70-130	5.70	(< 20)			
Lead	0.204	5.00	5.34	103	5.00	4.98	96	70-130	7.00	(< 20)			
Magnesium	8630	5000	12800	83	5000	12700	81	70-130	0.90	(< 20)			
Manganese	118	50.0	169	101	50.0	165	95	70-130	2.00	(< 20)			
Molybdenum	1.16	12.5	14.8	109	12.5	14.4	106	70-130	3.00	(< 20)			
Nickel	1.28	12.5	13.9	101	12.5	13.7	99	70-130	1.70	(< 20)			
Potassium	6390	5000	11500	102	5000	11000	92	70-130	4.40	(< 20)			
Selenium	0.500U	25.0	24.7	99	25.0	24.0	96	70-130	2.80	(< 20)			
Silver	0.0100U	5.00	5.25	105	5.00	5.04	101	70-130	4.00	(< 20)			
Sodium	8160	5000	12700	91	5000	12600	89	70-130	0.89	(< 20)			
Thallium	0.0100U	2.50	2.57	103	2.50	2.43	97	70-130	5.70	(< 20)			
Tin	0.100U	12.5	12.2	97	12.5	12.2	98	70-130	0.26	(< 20)			
Vanadium	4.12	25.0	30.8	107	25.0	30.2	104	70-130	1.80	(< 20)			
Zinc	277	50.0	302	49 *	50.0	301	48 *	70-130	0.20	(< 20)			

#### **Batch Information**

Analytical Batch: MMS9568 Analytical Method: 200.8 Low Level Instrument: Perkin Elmer NexIon P5 Analyst: VDL Analytical Date/Time: 10/8/2016 1:58:06PM Prep Batch: MXX30245 Prep Method: LL Digest for Metals on ICP-MS Prep Date/Time: 10/3/2016 7:43:02AM Prep Initial Wt./Vol.: 50.00mL Prep Extract Vol: 10.00mL

Print Date: 10/14/2016 5:15:26PM

SGS North America Inc.

200 West Potter Drive Anchorage, AK 95518 t 907.562.2343 f 907.561.5301 www.us.sgs.com



#### Billable Matrix Spike Summary

Original Sample ID: 1165622010 MS Sample ID: 1165622011 BMS MSD Sample ID: 1165622012 BMSD

QC for Samples:

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Analysis Date: 10/08/2016 14:32 Analysis Date: 10/08/2016 14:35 Analysis Date: 10/08/2016 14:38 Matrix: Water (Surface, Eff., Ground)

Results by 200.8 Low Level										
		Ma	trix Spike (	(ug/L)	Spik	e Duplicate	e (ug/L)			
Parameter	Sample	<u>Spike</u>	Result	<u>Rec (%)</u>	Spike	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Aluminum	18.8	50.0	86.9	136 *	50.0	83.8	130	70-130	3.60	(< 20)
Antimony	0.913	5.00	6.14	105	5.00	6.30	108	70-130	2.50	(< 20)
Arsenic	14.2	25.0	40.3	104	25.0	41.5	109	70-130	2.90	(< 20)
Barium	20.7	25.0	45.1	97	25.0	47.4	107	70-130	5.00	(< 20)
Beryllium	0.0250U	12.5	11.9	95	12.5	11.9	95	70-130	0.19	(< 20)
Bismuth	0.0250U	12.5	12.1	97	12.5	12.7	102	70-130	4.60	(< 20)
Boron	26.6	50.0	75.1	97	50.0	74.9	97	70-130	0.17	(< 20)
Cadmium	0.0250U	12.5	12.3	98	12.5	12.9	103	70-130	4.80	(< 20)
Calcium	23400	5000	26200	57 *	5000	28900	110	70-130	9.60	(< 20)
Chromium	0.250U	12.5	13.1	105	12.5	13.1	105	70-130	0.20	(< 20)
Cobalt	0.0803	12.5	13.1	104	12.5	13.6	108	70-130	3.80	(< 20)
Copper	0.202J	25.0	24	95	25.0	24.8	98	70-130	3.30	(< 20)
Iron	647	500	1210	113	500	1230	117	70-130	1.40	(< 20)
Lead	0.0695J	5.00	5.07	100	5.00	5.37	106	70-130	5.80	(< 20)
Magnesium	7980	5000	12400	89	5000	12800	96	70-130	3.00	(< 20)
Manganese	103	50.0	157	108	50.0	165	124	70-130	4.90	(< 20)
Molybdenum	1.20	12.5	14.8	109	12.5	15.9	117	70-130	7.00	(< 20)
Nickel	0.823	12.5	13.5	101	12.5	13.8	104	70-130	2.70	(< 20)
Potassium	6260	5000	10700	88	5000	11600	107	70-130	8.40	(< 20)
Selenium	0.500U	25.0	24.2	97	25.0	25.8	103	70-130	6.60	(< 20)
Silver	0.0100U	5.00	5.18	104	5.00	5.80	116	70-130	11.30	(< 20)
Sodium	7860	5000	12400	90	5000	13000	102	70-130	4.80	(< 20)
Thallium	0.0100U	2.50	2.54	102	2.50	2.66	106	70-130	4.50	(< 20)
Tin	0.100U	12.5	12.7	101	12.5	13.1	105	70-130	3.50	(< 20)
Vanadium	1.19	25.0	29.3	112	25.0	29.4	113	70-130	0.33	(< 20)
Zinc	36.6	50.0	81.7	90	50.0	86.7	100	70-130	6.00	(< 20)
Silicon	11900	2500	13800	75	2500	13900	79	70-130	0.58	(< 20)

Print Date: 10/14/2016 5:15:26PM

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#### **Billable Matrix Spike Summary**

Original Sample ID: 1165622010 MS Sample ID: 1165622011 BMS MSD Sample ID: 1165622012 BMSD Analysis Date: 10/08/2016 17:22 Analysis Date: 10/08/2016 17:25 Analysis Date: 10/08/2016 17:28 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Matrix Spike (ug/L)       Spike Duplicate (ug/L)         Parameter       Sample       Spike       Result       Rec (%)       Spike       Res (%)       CL       RPD (%)       RPD CI         Batch Information       Analytical Batch: MMS9568       Prep Batch: MXX30245       Prep Batch: MXX30245         Analytical Method: 200.8 Low Level       Prep Method: LL Digest for Metals on ICP-MS       Prep Date/Time: 10/3/2016 7:43:02AM         Instrument: Perkin Elmer NexIon P5       Prep Initial Wt./Vol.: 50.00mL       Prep Extract Vol: 10.00mL         Analytical Date/Time: 10/8/2016 2:35:52PM       Prep Batch: MXX30245       Prep Extract Vol: 10.00mL         Analytical Batch: MMS9569       Prep Batch: MXX30245       Prep Method: LL Digest for Metals on ICP-MS         Analytical Method: 200.8 Low Level       Prep Method: LL Digest for Metals on ICP-MS       Prep Date/Time: 10/3/2016 7:43:02AM         Analytical Method: 200.8 Low Level       Prep Date/Time: 10/3/2016 7:43:02AM       Prep Date/Time: 10/3/2016 7:43:02AM         Analytical Date/Time: 10/8/2016 5:25:26PM       Prep Date/Time: 10/3/2016 7:43:02AM       Prep Initial Wt./Vol.: 50.00mL	Results by 200.8 Low Lev	vel		_							
Parameter       Sample       Spike       Result       Rec (%)       Spike       Result       Rec (%)       CL       RPD (%)       RPD (1)         Batch Information       Analytical Batch: MMS9568       Prep Batch: MXX30245       Prep Batch: MXX30245         Analytical Method: 200.8 Low Level       Prep Method: LL Digest for Metals on ICP-MS       Prep Date/Time: 10/3/2016 7:43:02AM         Instrument: Perkin Elmer Nexlon P5       Prep Date/Time: 10/3/2016 7:43:02AM       Prep Initial Wt./Vol.: 50.00mL         Analytical Date/Time: 10/8/2016 2:35:52PM       Prep Batch: MXX30245       Prep Batch: MXX30245         Analytical Batch: MMS9569       Prep Batch: MXX30245       Prep Method: LL Digest for Metals on ICP-MS         Analytical Method: 200.8 Low Level       Prep Method: LL Digest for Metals on ICP-MS         Instrument: Perkin Elmer Nexlon P5       Prep Date/Time: 10/3/2016 7:43:02AM         Analyst: VDL       Prep Date/Time: 10/3/2016 7:43:02AM         Analyst: VDL       Prep Initial Wt./Vol.: 50.00mL         Analyst: VDL       Prep Initial Wt./Vol.: 50.00mL         Analyst: VDL       Prep Initial Wt./Vol.: 10.00ml         Analyst: VDL       Prep Initial Wt./Vol.: 10.00ml			Ma	trix Spike (	trix Spike (ug/L)		Spike Duplicate (ug/L)				
Batch Information         Analytical Batch: MMS9568       Prep Batch: MXX30245         Analytical Method: 200.8 Low Level       Prep Method: LL Digest for Metals on ICP-MS         Instrument: Perkin Elmer NexIon P5       Prep Date/Time: 10/3/2016 7:43:02AM         Analyst: VDL       Prep Initial Wt./Vol.: 50.00mL         Analytical Date/Time: 10/8/2016 2:35:52PM       Prep Batch: MXX30245         Analytical Batch: MMS9569       Prep Batch: MXX30245         Analytical Method: 200.8 Low Level       Prep Method: LL Digest for Metals on ICP-MS         Instrument: Perkin Elmer NexIon P5       Prep Method: LL Digest for Metals on ICP-MS         Analyst: VDL       Prep Date/Time: 10/3/2016 7:43:02AM         Analyst: VDL       Prep Batch: MXX30245         Analyst: VDL       Prep Date/Time: 10/3/2016 7:43:02AM         rameter	Sample	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	<u>Result</u>	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL	
Analytical Batch: MMS9568Prep Batch: MXX30245Analytical Method: 200.8 Low LevelPrep Method: LL Digest for Metals on ICP-MSInstrument: Perkin Elmer NexIon P5Prep Date/Time: 10/3/2016 7:43:02AMAnalytical Date/Time: 10/8/2016 2:35:52PMPrep Initial Wt./Vol.: 50.00mLAnalytical Batch: MMS9569Prep Batch: MXX30245Analytical Method: 200.8 Low LevelPrep Batch: MXX30245Instrument: Perkin Elmer NexIon P5Prep Method: LL Digest for Metals on ICP-MSInstrument: Perkin Elmer NexIon P5Prep Date/Time: 10/3/2016 7:43:02AMAnalytical Method: 200.8 Low LevelPrep Date/Time: 10/3/2016 7:43:02AMInstrument: Perkin Elmer NexIon P5Prep Date/Time: 10/3/2016 7:43:02AMAnalyst: VDLPrep Date/Time: 10/3/2016 7:43:02AM	Batch Information										
Analytical Method: 200.8 Low LevelPrep Method: LL Digest for Metals on ICP-MSInstrument: Perkin Elmer NexIon P5Prep Date/Time: 10/3/2016 7:43:02AMAnalyst: VDLPrep Initial Wt./Vol.: 50.00mLAnalytical Date/Time: 10/8/2016 2:35:52PMPrep Extract Vol: 10.00mLAnalytical Batch: MMS9569Prep Batch: MXX30245Analytical Method: 200.8 Low LevelPrep Method: LL Digest for Metals on ICP-MSInstrument: Perkin Elmer NexIon P5Prep Date/Time: 10/3/2016 7:43:02AMAnalyst: VDLPrep Batch: MXX30245Analyst: VDLPrep Date/Time: 10/3/2016 7:43:02AMAnalyst: VDLPrep Date/Time: 10/3/2016 7:43:02AM	Analytical Batch: MMS95	568			Pres	Batch:	MXX30245	5			
Instrument: Perkin Elmer NexIon P5Prep Date/Time: 10/3/2016 7:43:02AMAnalyst: VDLPrep Initial Wt./Vol.: 50.00mLAnalytical Date/Time: 10/8/2016 2:35:52PMPrep Extract Vol: 10.00mLAnalytical Batch: MMS9569Prep Batch: MXX30245Analytical Method: 200.8 Low LevelPrep Method: LL Digest for Metals on ICP-MSInstrument: Perkin Elmer NexIon P5Prep Date/Time: 10/3/2016 7:43:02AMAnalyst: VDLPrep Date/Time: 10/3/2016 7:43:02AMAnalyst: VDLPrep Batch: MXX30245Analyst: VDLPrep Date/Time: 10/3/2016 7:43:02AM	Analytical Method: 200.8	B Low Level			Pres	Method:	LL Diaes	t for Metals	on ICP-	MS	
Analyst: VDL       Prep Initial Wt./Vol.: 50.00mL         Analytical Date/Time: 10/8/2016 2:35:52PM       Prep Extract Vol: 10.00mL         Analytical Batch: MMS9569       Prep Batch: MXX30245         Analytical Method: 200.8 Low Level       Prep Method: LL Digest for Metals on ICP-MS         Instrument: Perkin Elmer NexIon P5       Prep Date/Time: 10/3/2016 7:43:02AM         Analyst: VDL       Prep Initial Wt./Vol.: 50.00mL         Analyst: VDL       Prep Date/Time: 10/3/2016 7:43:02AM	Instrument: Perkin Elmer	nstrument: Perkin Elmer Nexlon P5 Prep Date/Time: 10/3/2016 7:43:02Al					)2AM				
Analytical Date/Time: 10/8/2016 2:35:52PM       Prep Extract Vol: 10.00mL         Analytical Batch: MMS9569       Prep Batch: MXX30245         Analytical Method: 200.8 Low Level       Prep Method: LL Digest for Metals on ICP-MS         Instrument: Perkin Elmer NexIon P5       Prep Date/Time: 10/3/2016 7:43:02AM         Analyst: VDL       Prep Initial Wt./Vol.: 50.00mL         Analytical Date/Time: 10/8/2016 5:25:26PM       Prep Extract Vol: 10.00ml	Analyst: VDL	alvst: VDL Prep Initial Wt./Vol.: 50.00mL									
Analytical Batch:MMS9569Prep Batch:MXX30245Analytical Method:200.8 Low LevelPrep Method:LL Digest for Metals on ICP-MSInstrument:Perkin Elmer NexIon P5Prep Date/Time:10/3/20167:43:02AMAnalyst:VDLPrep Initial Wt./Vol.:50.00mLAnalytical Date/Time:10/8/20165:25:26PMPrep Extract Vol:10.00ml	Analytical Date/Time: 10	/8/2016 2:35:52	S 2:35:52PMPrep Extract Vol: 10.00mL								
Analytical Method: 200.8 Low Level     Prep Method: LL Digest for Metals on ICP-MS       Instrument: Perkin Elmer Nexton P5     Prep Date/Time: 10/3/2016 7:43:02AM       Analyst: VDL     Prep Initial Wt./Vol.: 50.00mL       Analytical Date/Time: 10/8/2016 5:25:26PM     Prep Extract Vol: 10.00mL	Analytical Batch: MMS95	569			Prer	Batch: I	MXX30245	5			
Instrument: Perkin Elmer Nexlon P5 Prep Date/Time: 10/3/2016 7:43:02AM Analyst: VDL Prep Initial Wt./Vol.: 50.00mL Analytical Date/Time: 10/8/2016 5:25:26PM Prep Extract Vol: 10.00mL	Analytical Method: 200.8	B Low Level			Pres	Method:	LL Diaes	t for Metals	on ICP-	MS	
Analyst: VDL Prep Initial Wt./Vol.: 50.00mL	Instrument: Perkin Elmer	r Nexlon P5			Prep	Date/Tin	ne: 10/3/2	016 7:43:0	)2AM		
Analytical Date/Time: 10/8/2016 5:25:26PM Prep Extract Vol: 10.00ml	Analyst: VDL	Analyst: VDL Prep Initial \				Initial W	itial Wt./Vol.: 50.00mL				
	Analytical Date/Time: 10	/8/2016 5:25:26	6PM		Prep	Extract \	/ol: 10.00	mL			
	<u></u>										

Print Date: 10/14/2016 5:15:26PM

SGS North America Inc.

200 West Potter Drive Anchorage, AK 95518 t 907.562.2343 f 907.561.5301 www.us.sgs.com

SGS			US	Sampling and Testing Report - Event 2 SAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Method Blank				
Blank ID: MB for HBN 17 Blank Lab ID: 1353854 QC for Samples:	743669 [STS/5216]	Matrix	k: Water (Su	rface, Eff., Ground)
1165622001, 1165622004, Results by <b>SM21 2540C</b>	1165622005			
Parameter	<u>Results</u>	LOQ/CL	DL	<u>Units</u>
Total Dissolved Solids	5.00U	10.0	3.10	mg/L
Batch Information	216			
Analytical Method: SM2 Instrument: Analyst: KBE Analytical Date/Time: 9	21 2540C /23/2016 1:54:35PM			

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LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0

<b>I</b>					
Duplicate Sample Summar	У				
Original Sample ID: 116562 Duplicate Sample ID: 1165	22001 622015		Analysis Date: Matrix: Water (	09/23/2016 13:54 Surface, Eff., Grou	nd)
QC for Samples:				, ,	
Results by SM21 2540C					
NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL
Total Dissolved Solids	151	150	mg/L	0.66	(< 5)
Batch Information					
Analytical Batch: STS5216 Analytical Method: SM21 25 Instrument: Analyst: KBE	40C				
Print Date: 10/14/2016 5:15:32PM					

Confidential

16-Dec-16

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Blank Spike ID: LCS for HBN 1165622 [STS5216] Blank Spike Lab ID: 1353855 Date Analyzed: 09/23/2016 13:54 Spike Duplicate ID: LCSD for HBN 1165622 [STS5216] Spike Duplicate Lab ID: 1353856 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 1165622004, 1165622005

Results by SM21 2540C									
		Blank Spike	e (mg/L)	(mg/L) Spike Duplicate (mg/L)					
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Total Dissolved Solids	330	319	97	330	319	97	(75-125)	0.00	(< 5)
Batch Information Analytical Batch: STS5216 Analytical Method: SM21 25400 Instrument: Analyst: KBE	C			Pre Pre Pre Spil Dup	p Batch: p Method: p Date/Tim ke Init Wt./\ be Init Wt./\	ie: Vol.: 330 mg Vol.: 330 mg	/L Extract V	/ol: 100 mL ol: 100 mL	

Print Date: 10/14/2016 5:15:34PM

- Method Blank	/lethod Blank								
Blank ID: MB for HBN 174 Blank Lab ID: 1353264	Blank ID: MB for HBN 1743679 [STS/5912] Blank Lab ID: 1353264			Ma,rti∶x a,pr Ⅷ (rfaup0c ff⊞. ro( nGd					
8 Q for SaC mipe: 1165699ss101165699ss401165699ss5									
) pe( l,e bR <b>SM21 2540D</b>	) pe( l,e bR <b>SM21 2540D</b>								
<u>OaraCp.pr</u> To,al S( empnQpGSoltQe	<u>) ре(I,е</u> s⊞ssy	<u>LU8 /QL</u> 1Ess	<u>DL</u> s₿1s	<u>y nt,e</u> C P/L					
Batch Information									
v nalRtual Ba,ug: STS591 v nalRtual Mp,goG SM91 Ine,r( Cpn,: v nalRe,: LLO v nalRtual Da,p/TtCp: A/9	2 954sD 9/9s16 7:37:9AOM								

Ortn, Da,p: 1s/14/9s16 5:15:36OM

S. S Nor,g v C prtua InuE

9ss x pe, Co,,pr Drthp v nugoraPp0v K A5512 t As7556919343 f As75561153s1 www€ eEePeEuoC

Ouplicate Sample Summar	у									
Driginal Sample ID: 116562 Duplicate Sample ID: 1A5Ay CP ,dr Sample/ :	22001 /y5		s nal9/ i/ Date: 034242016 13:AM x atriW (ater fSur,aceE.,,Œordun) R							
165622001E116562200vE ⁻	1165622005									
e/ ult/ 09 SM21 2540D										
lsx.	Original	Duplicate	Lnit/	<u>b %D fN R</u>	<u>b %D PT</u>					
dtal Su/ pen) e) Sdli) /	1v <b>G</b>	1v <b>G</b>	mg4T	A <b>(5</b> 0	fB 5 R					
atch Information										
s nal9tical hatcK: S <s521y s nal9tical x etKd): Sx 21 25 In/trument: s nal9/t: TT%</s521y 	v0D									

%rint Date: 1041v42016 5:15:AW/x

So S UdrtK s merica IncG

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

uplicate Sample Summary								
Driginal Sample ID: 116553600 Duplicate Sample ID: 1A5A3Av		s nal9/ i/ Date: 0342242016 13:AM x atriW ( ater fSur,aceE. ,,Œo rdun) R						
CP ,dr Sample/ :								
165622001								
a/w// 00 0000 0540D								
	Original	Duplicate	L nit/	h %D fN R	h%D PT			
J <u>sx.</u> ⊲dtal Su/pen)e)Sdli)/	MAG	MQ	mq4T	v <b>G</b> 0	fB 5 R			
Batch Information	-	-						
s nal9tical hatcK: S <s521y s nal9tical x etKd) : Sx 21 25v0D In/ trument: s nal9/ t: TT%</s521y 	)							



Original Sample ID: 116562200 Duplicate Sample ID: 11656220 CP ,dr Sample/ :	s nal9/ i/ Date: 0342242016 13:AM x atriW ( ater fSur,aceE ,,Œo rdun) R					
b e/ ult/ Q9 SM21 2540D						
Usx.	Original	Duplicate	Lnit/	<u>b %D fN R</u>	<u>b%DPT</u>	
<dtal <="" e)="" pen)="" sdli)="" su="" td=""><td>1v<b>@</b></td><td>1v<b>(5</b>)</td><td>mg4T</td><td>A<b>(3</b>0</td><td>fB 5 R</td></dtal>	1v <b>@</b>	1v <b>(5</b> )	mg4T	A <b>(3</b> 0	fB 5 R	
Batch Information s nal9tical hatcK: S <s521y s nal9tical x etKd): Sx 21 25v0D In/ trument: s nal9/ t: TT%</s521y 						
%rint Date: 1041v42016 5:15:AM%x						

So S UdrtK s merica IncG



Blank Spike ID: LCS for HBN 1165622 [STS521] b Blank Spike La3 ID: 1858] 65 Date Analyzed: 09/22/2016 19:84 Spike Duplicate ID: LCSD for HBN 1165622 [STS521] b Spike Duplicate La3 ID: 1858] 66 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 116562200v, 1165622005

Results 3y SM21 2540D									
		Blank Spike (mg/L)			Spike Duplicate (mg/L)				
<u>Parameter</u>	Spike	Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Total Suspended Solids	50	50.0	100	50	v9.]	100	(457125)	0.v0	(- 5)
Batch Information Analytical Batc<: STS5218 Analytical Met <od: 2540d="" analyst:="" instrument:="" llp<="" sm21="" th=""><th>)</th><th></th><th></th><th>Pre Pre Pre Spil Dup</th><th>o Batc&lt;: o Met<od: o Date/Tim ke Init Wt./h oe Init Wt./h</od: </th><th>e: nol.: 50 mg/L nol.: 50 mg/L</th><th>Extract ho</th><th>ol: 1000 mL : 1000 mL</th><th></th></od:>	)			Pre Pre Pre Spil Dup	o Batc<: o Met <od: o Date/Tim ke Init Wt./h oe Init Wt./h</od: 	e: nol.: 50 mg/L nol.: 50 mg/L	Extract ho	ol: 1000 mL : 1000 mL	

Print Date: 10/1v/2016 5:15:8] PM

	•		_					
	Method Blank							
	Blank ID: MB for HBN 1744364 9 S[ 7 55/ 2 Blank ] aL ID: 1b/ 4836		Ma,rti : x a,er \W( rfaue0c fftD. ro( nGd					
	QC for [ amples: 118/ 8553310118/ 8553340118/ 85533/							
	) es(I,s LR <b>SM21 2540B</b>							
	<u>Oarame,er</u> So,al [ oltŒ	<u>) es(I,s</u> 13By		<u> UQTC </u> 13B	<u>D]</u> 13B	<u>y nt.s</u> mPJ	·	
_[	Batch Information							
	v nalRtual Ba,ug: [S[/55/ v nalRtual Me,goG [M515/4 Ins,r(men,: v nalRs,: ABc v nalRtual Da,eTstme: hT68T53	3B 18 5:58:/ 10M						

Ortn, Da,e: 1371475318 / :1/ :430M

[. [ Nor,g v mertua InuE



🗕 uplicatem Strlim Sprrt	уB						
Original Sample ID: 11656 Duplicate Sample ID: 1A5 CP ,dr Sample3: 1165622001E116562200y	Original Sample ID: 1165622001 Duplicate Sample ID: 1A5y62s CP ,dr Sample3: 1165622001E116562200yE1165622005		9 nal/ 3i3 Date: 041/261/2016 1y:26 x atriW ( ater fSur,aceE. ,,Œo rdun) R				
be3ult3 Q SM21 2540D	be3ult3 Q SM21 2540D						
<u>U9x.</u>	Original	Duplicate	<u>L nit3</u>	<u>b %D fN R</u>	<u>b %D PT</u>		
<dtal 3<="" sdli)="" td=""><td>1v2</td><td>16s</td><td>mgMī</td><td>290</td><td>fB 5 R</td></dtal>	1v2	16s	mgMī	290	fB 5 R		
Dt eah Infoyr t econ 9 nal/ tical h atcK: S <s5225 9 nal/ tical x etKd) : Sx 21 2 In3trument: 9 nal/ 3t: 8h.</s5225 	25y0h						
%int Date: 10My/2016 5:15:y1%x							



∕uplicatemStrlimSprrtyB							
Original Sample ID: 1165622001 Duplicate Sample ID: 1165622015 CP ,dr Sample3:		9nal/3i3 Date: 0412612016 1y:26 x atriW ( ater fSur,aceE. ,,Œordun) R					
be3ult3 Q SM21 2540D							
<u>U9x.</u>	<u>Original</u>	Duplicate	Lnit3	<u>b %D fN R</u>	<u>b%DPT</u>		
<dtal 3<="" sdli)="" td=""><td>1v2</td><td>16s</td><td>mgMī</td><td>2090</td><td></td></dtal>	1v2	16s	mgMī	2090			
Ut eah Intoyr t exon         9 nal/ tical hatck: S <s5225< td="">         9 nal/ tical x etKd): Sx 21 25y0h         In3trument:         9 nal/ 3t: 8h.</s5225<>							
%rint Date: 10Mly12016 5:15:y1%x							



lethod Blank		]						
lank ID: MB for HBN 17439 lank Lab ID: 1354265	940 [VXX/29626]	Matrix: Water (Surface, Eff., Ground)						
IC for Samples: 165622004, 1165622005, 116	5622006, 1165622007, 116	65622008, 1165622009	)					
esults by <b>AK101</b>								
Parameter Gasoline Range Organics	<u>Results</u> 0.0500U	<u>LOQ/CL</u> 0.100	<u>DL</u> 0.0310	<u>Units</u> mg/L				
Jrrogates -Bromofluorobenzene (surr)	83.8	50-150		%				
Analytical Batch: VFC13323 Analytical Method: AK101 Instrument: Agilent 7890 PII Analyst: ST Analytical Date/Time: 9/24/2	Prep Ba Prep Me Prep Da Prep Ini Prep Ex	Prep Batch: VXX29626 Prep Method: SW5030B Prep Date/Time: 9/24/2016 6 Prep Initial Wt./Vol.: 5 mL Prep Extract Vol: 5 mL						

Print Date: 10/14/2016 5:15:44PM



Blank Spike ID: LCS for HBN 1165622 [VXX29626] Blank Spike Lab ID: 1354266 Date Analyzed: 09/24/2016 11:51 Spike Duplicate ID: LCSD for HBN 1165622 [VXX29626] Spike Duplicate Lab ID: 1354267 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622004, 1165622005, 1165622006, 1165622007, 1165622008, 1165622009

Results by AK101									
	ŀ	Blank Spike	e (mg/L)	(mg/L) Spike Duplicate (mg/L)					
Parameter	<u>Spike</u>	Result	Rec (%)	<u>Spike</u>	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Gasoline Range Organics	1.00	0.946	95	1.00	0.920	92	(60-120)	2.70	(< 20 )
Surrogates									
4-Bromofluorobenzene (surr)	0.0500	90.9	91	0.0500	91.1	91	(50-150)	0.20	
Batch Information									
Analytical Batch: VFC13323				Prep Batch: VXX29626					
Analytical Method: AK101				Prep Method: SW5030B					
Applyot: ST		Prep Date/Time: 09/24/2016 06:00							
Analyst. 31		Dupe Init Wt /Vol : 1.00 mg/L Extract Vol: 5 ml							
				_ 0.p					

Print Date: 10/14/2016 5:15:54PM

#### Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Method Blank								
Blank ID: MB for HBN 1744134 90 [ [ ¥ Blank 6a] ID: 1Lb4/ 77	∜ 3432	Ma,r&t∶i a,pr xCW/fa(puc ff⊞i. roWnGd						
5 Q for CaS mpe: 113b3XXss1								
) peW,e ] R <b>AK101</b>	-							
<u>OaraSp.pr</u> ) <u>) peW(</u> . aeol&np) anPp UrPan&e sEsbss	ē Ņ	<u>6U5VQ6</u> s⊟ss	<u>D6</u> sEsL1s	<u>v n8e</u> S P\6				
Surrogates 4gBroSoflWoro]pn-pnpxeWrd %LEb		bsglbs		Z				
Batch Information								
AnalR&al Ba,(h: 0FQ1LLX/ AnalR&al Mp,hoG AK1s1 Ine,rWSpn,: AP&pn, 7% s OIDVFID AnalRe,: CT AnalR&al Da,pVT&Sp: / W7VKs13 11:L4	:ssOM	OrpmBa,( OrpmMp, OrpmDa,p OrpmIn&& OrpmIn&&	h:0[[X/343 hoG Ci bsLsB bVT8Sp:/VK7VKs ali ,Eo2001E bS6 a(,001:bS6	13 3:ss:ssAM 6				

Or&n, Da,p: 1sV14VKs13 b:1b:b/ OM

C. C Nor,h AS pr&a In(E



Blank Spike ID: LCS for HBN 1165622 [VXX296] 6b Blank Spike La3 ID: 145] 9t A Daye z nald0e/ : A9t2ct2A16 22:5c Spike D7pliRaye ID: LCSD for HBN 1165622 [VXX296] 6b Spike D7pliRaye La3 ID: 145] 9t 1 x ayriW ( ayer ,S7rfaReE. ffŒ) ro7n/ P

8 C for Sa%pleM 1165622AA1

_ s eM7lyM3d <b>AK101</b>											
	Blank Spike ,			S	pike D7plif	Raye,%QLP					
mara%eyer	Spike	<u>s eM/Iy</u>	<u>s eR,g P</u>	<u>Spike</u>	<u>s eM7ly</u>	<u>s eR,g P</u>	CL	<u>s mD,g P</u>	s mD CL		
) aMoline s anQe OrQaniRM	1 GA	A@62	96	10AA	A@t]	t t	, 6A-12A P	tĢА	,< 2A P		
Surrogates											
] -Bro%ofl7oro3en0ene ,M7rrP	AQ45AA	926	94	AGA5AA	tt 🕼	t t	, 5A-15A P	] <b>G</b> A			
Batch Information											
z naldyiRal BayRn: VFC13327 z naldyiRal x eyho/ : AK101				mrep mrep	BayRh: V x eyho/:	XX276V6 S5 4030B					
InMr7%eny. Agilent 8970 PID/	%eny. Agilent 8970 PID/FID					mrep DayeuTi%e: 07/28/2016 06:00					
z naidivy. Si				Spik D7p	einiy(yua) elniy(yG)/	/olg 10AA %0	JLL.WyraRy∿ JL.WyraRyV	ol: 5 %L ol: 5 %L			

mrinyDaye: 1Aul] 2A16 5:16:A1mx



#### Billable Matrix Spike Summary

Original Sample ID: 1165622001 MS Sample ID: 1165622002 BMS MSD Sample ID: 1165622003 BMSD 
 Analysis Date:
 09/28/2016
 3:03

 Analysis Date:
 09/28/2016
 3:22

 Analysis Date:
 09/28/2016
 3:41

 Matrix:
 Water (Surface, Eff., Ground)

QC for Samples:

Results by AK101			_							
·		Mat	rix Spike (ı	mg/L)	Spike	Duplicate	e (mg/L)			
Parameter Gasoline Range Organics	<u>Sample</u> 0.0497J	<u>Spike</u> 1.00	<u>Result</u> 0.985	<u>Rec (%)</u> 94	<u>Spike</u> 1.00	<u>Result</u> 0.987	<u>Rec (%)</u> 94	<u>CL</u> 60-120	<u>RPD (%)</u> 0.21	<u>RPD CL</u> (< 20 )
Surrogates 4-Bromofluorobenzene (surr)		0.0500	0.0462	92	0.0500	0.0447	89	50-150	3.30	
Batch Information Analytical Batch: VFC13329 Analytical Method: AK101 Instrument: Agilent 7890 PID Analyst: ST Analytical Date/Time: 9/28/20	/FID 016 3:22:00/	AM		Prep Prep Prep Prep Prep	Batch: V Method: Date/Tim Initial Wt. Extract V	XX29646 Volatile F e: 9/27/20 /Vol.: 5.0 ol: 5.00m	uels Extract 016 6:00:0 0mL L	tion (W) 0AM		

Print Date: 10/14/2016 5:16:02PM

SGS			Si USA	ampling and Testing Rep AL-FG-GRZZZ-00-00201	oort - Event 2 6-004 Rev. 0 16-Dec-16
Method Blank					
Blank ID: MB for HBN Blank Lab ID: 1383Q2 Cm for pae sl0, : 11686t t 221i 11686t t 2	Blank ID: MB for HBN 1743693 [S T/ 512743] Blank Lab ID: 1383Q21 Cm for pae sl0, : 11686t t 221i 11686t t 224i 11686t t 228 y 0, clx, bU <b>SM21 2130B</b>		(∛Sax0rupcrf	aÐi . ffGd rocn) R	
y 0, cix b0 SM21 213	v 0 clx	LPC5ml	DI	On\\$/	
/ crbVJWAU	23220	2 <b>6</b> 22	2322	N/ 0	
Batch Information TnalUAEal BaxEg: S ⁻ TnalUAEal M0xgo): p In, xce 0nx / crbWAE TnalU, x AB. TnalUAEal Dax05 Ve/0	T/ 12743 pMt1t132B /0x0r : QMat54216 9:42:22TM				

vrWn/xDax0: 1251451216 8:16:23vM

pdp Norxg Te 0rWEa InEG



	Duplicate Sample Summarv		<u> </u>					
	Original Sample ID: 1165622001 Duplicate Sample ID: 1165622015 QC for Samples:		Analysis Date: 09/22/2016 03:40 Matrix: Water (Surface, Eff., Ground)					
ļ	Results by SM21 2130B		·					
	NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL		
	Turbidity	16.0	16.0	NTU	0.00	(v 20)		
	Batch Information Analytical <atcb: wat10h4k<br="">Analytical MetBod: SM21 21K0&lt; Instrument: Turbidimeter Analyst: 8<e< td=""><td></td><td></td><td></td><td></td><td></td></e<></atcb:>							
	Print Date: 10/14/2016 5:16:04PM							

SGS				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
Blank Spike ID: LCS for HBN Blank Spike Lab ID: 1353902 Date Analyzed: 09/22/2016	1165622   2 08:40	[WAT1074	3]	Matrix: Water (Surface, Eff., Ground)
QC for Samples: 11656220	001, 116562	2004, 1165	622005	
Results by SM21 2130B				
Results by SMZT 2130B		Blank Snike		
Parameter	Spike	Result	Rec (%)	CL
Turbidity	10	11.0	110	(90-110)
Batch Information				
Analytical Batch: WAT10743 Analytical Method: SM21 2130 Instrument: Turbidimeter Analyst: KBE	)B			Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 10 NTU Extract Vol: 1 mL Dupe Init Wt./Vol.: Extract Vol:
int Date: 10/14/2016 5:16:05PM	200	) West Pott	er Drive Anchoi	rage, AK 95518
SGS North America I	nc.	7 562 2342	3 f 907 561 530	

SGS				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16	
Blank Spike Summary					
Blank Spike ID: LCS for HBl Blank Spike Lab ID: 135390 Date Analyzed: 09/22/2016	N 1165622   17 5 08:40	WAT1074	3]	Matrix: Water (Surface, Eff., Ground)	
QC for Samples: 1165622	2001, 116562	2004, 116	5622005		
Results by SM21 2130B			_		
Devementer	Calles	Blank Spike	e (NTU)		
<u>Parameter</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	
raibluity	10	11.U	110	( 30-110 )	
Batch Information					
Analytical Batch: WAT10743				Prep Batch:	
Analytical Method: SM21 213	30B			Prep Method: Prep Date/Time:	
Analyst: KBE				Spike Init Wt./Vol.: 10 NTU Extract Vol: 1 mL	
				Dupe Init Wt./Vol.: Extract Vol:	
int Date: 10/14/2016 5:16:05PM					
	200	West Pott	er Drive Ancho	rage, AK 95518	
SGS North America	t 90	7.562.2343	3 <b>f</b> 907.561.530	1 www.us.sgs.com	

<b>SGS</b>				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
Blank Spike ID: LCS for HBN Blank Spike Lab ID: 1353909 Date Analyzed: 09/22/2016	1165622 [ˈ 16:00	WAT1074	.3]	Matrix: Water (Surface, Eff, Ground)
QC for Samples: 11656220	01, 116562	2004, 1165	5622005	
Results by SM21 2130B				
	E	Blank Spike	e (NTU)	
<u>Parameter</u> Furbidity	<u>Spike</u> 10	<u>Result</u> 11.0	<u>Rec (%)</u> 110	<u>CL</u> (90-110)
Batch Information				
Analytical Batch: WAT10743 Analytical Method: SM21 2130 Instrument: Turbidimeter Analyst: KBE	В			Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 10 NTU Extract Vol: 1 mL Dupe Init Wt./Vol.: Extract Vol:
nt Date: 10/11/2016 5:16:050*4				
SCC North America I	200	West Pott	er Drive Anchor	age, AK 95518

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

GS			USAL	-FG-GRZZZ-00-002016-0 1	04 Rev. 0 6-Dec-16
Method Blank		Matri	w Motor (Ourfo		
Blank ID: MB for HBN 174 Blank Lab ID: 1354451	4044 (VVF1/2505)	Matrix	x: vvater (Surta	ce, Επ., Ground)	
QC for Samples:					
Results by SM21 4500NO3	3-F				
Parameter	Results	LOQ/CL	DL	<u>Units</u>	
litrate-N	0.0500U	0.100	0.0300	mg/L	
ntrite-N otal Nitrate/Nitrite-N	0.05000	0.100	0.0300	mg/L mg/l	
	0.00000	0.100	0.0000		
atch Information					
Analytical Batch: WFI250 Analytical Method: SM21 Instrument: Astoria segme Analyst: KBE Analytical Date/Time: 9/2	5 4500NO3-F ented flow 1/2016 3:25:43PM				

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

- Method Blank									
Blank ID: MB for HBN 174 Blank Lab ID: 1354457	44044 (WFI/2505)	Matrix: Water (Surface, Eff., Ground)							
QC for Samples: 1165622001, 1165622004,	1165622005								
Results by SM21 4500NC	)3-F								
Parameter	Results	LOQ/CL	DL	<u>Units</u>					
Nitrate-N	0.0500U	0.100	0.0300	mg/L					
Nitrite-N	0.0500U	0.100	0.0300	mg/L					
Total Nitrate/Nitrite-N	0.0500U	0.100	0.0300	mg/L					
Batch Information									
Analytical Batch: WFI25 Analytical Method: SM2 Instrument: Astoria segr Analyst: KBE Analytical Date/Time: 9/	05 1 4500NO3-F nented flow 21/2016 4:11:13PM								

Print Date: 10/14/2016 5:16:07PM

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Blank Spike ID: LCS for HBN 1165622 [WFI2505] Blank Spike Lab ID: 1354449 Date Analyzed: 09/21/2016 15:23

Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SM21 4500NO3-F			_	
		Blank Spike	(mg/L)	
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	CL
Nitrate-N	2.5	2.51	100	(70-130)
Nitrite-N	2.5	2.52	101	(90-110)
Total Nitrate/Nitrite-N	5	5.03	101	(90-110)
Batch Information				
Analytical Batch: WFI2505				Prep Batch:
Analytical Method: SM21 4500	NO3-F			Prep Method: Prep Date/Time:
Analyst: KBE	u 110W			Spike Init Wt./Vol.: 2.5 mg/L Extract Vol: 5 mL
				Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/14/2016 5:16:09PM



Blank Spike ID: LCS for HBN 1165622 [WFI2505] Blank Spike Lab ID: 1354455 Date Analyzed: 09/21/2016 16:09

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 1165622004, 1165622005

#### Results by SM21 4500NO3-F

···· <b>·</b>			
		Blank Spil	ke (mg/L)
Parameter	<u>Spi</u>	ke <u>Result</u>	<u>Rec (%)</u>
Nitrate-N	2.5	2.56	102
Nitrite-N	2.5	2.54	102
Total Nitrate/Nitrite-	<b>N</b> 5	5.10	102

# **Batch Information**

Analytical Batch: WFI2505 Analytical Method: SM21 4500NO3-F Instrument: Astoria segmented flow Analyst: KBE Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 2.5 mg/L Extract Vol: 5 mL Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/14/2016 5:16:09PM



Original Sample ID: 1165461001 MS Sample ID: 1354425 MS MSD Sample ID: 1354426 MSD Analysis Date: 09/21/2016 14:55 Analysis Date: 09/21/2016 14:57 Analysis Date: 09/21/2016 14:59 Matrix: Drinking Water

QC for Samples:

Results by SM21 4500NO3	-F									
		Ма	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
<u>Parameter</u> Total Nitrate/Nitrite-N	<u>Sample</u> 0.100U	<u>Spike</u> 5.00	<u>Result</u> 4.95	<u>Rec (%)</u> 99	<u>Spike</u> 5.00	<u>Result</u> 5.02	<u>Rec (%)</u> 100	<u>CL</u> 90-110	<u>RPD (%)</u> 1.40	<u>RPD CL</u> (< 25 )
Batch Information Analytical Batch: WFI2505 Analytical Method: SM21 4: Instrument: Astoria segmer Analyst: KBE Analytical Date/Time: 9/21/	500NO3-F nted flow 2016 2:57:43	PM		Prep Prep Prep Prep Prep	9 Batch: 9 Method: 9 Date/Tin 9 Initial Wt	ne: ./Vol.: 5.0 /ol: 5.00m	0mL iL			

Print Date: 10/14/2016 5:16:11PM



Original Sample ID: 1165611001 MS Sample ID: 1354427 MS MSD Sample ID: 1354428 MSD Analysis Date: 09/21/2016 15:41 Analysis Date: 09/21/2016 15:43 Analysis Date: 09/21/2016 15:44 Matrix: Drinking Water

QC for Samples: 1165622001, 1165622004, 1165622005

Results by SM21 4500NO3-I	F										
		Ма	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)				
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	Rec (	<u>%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Nitrate-N	0.100U	2.50	3.38	135 *	2.50	2.93	117		70-130	14.10	(< 25)
Nitrite-N	0.100U	2.50	2.52	101	2.50	2.84	113	*	90-110	11.90	(< 25 )
Batch Information											
Analytical Batch: WFI2505				Prep	Batch:						
Analytical Method: SM21 45	500NO3-F			Prep	Method:						
Instrument: Astoria segment	ted flow			Prep	Date/Tim	ne:					
Analyst: KBE				Prep	Initial Wt	t./Vol.: 5.0	0mL				
Analytical Date/Time: 9/21/2	2016 3:43:13	PM		Prep	Extract \	/ol: 5.00m	۱L				

Print Date: 10/14/2016 5:16:11PM



Original Sample ID: 1165628005 MS Sample ID: 1354805 MS MSD Sample ID: 1354806 MSD Analysis Date: 09/21/2016 17:46 Analysis Date: 09/21/2016 17:48 Analysis Date: 09/21/2016 17:50 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 1165622004, 1165622005

Results by SM21 4500NO3-I	F										
		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)				
<u>Parameter</u> Nitrate-N	<u>Sample</u> 0.0500U	<u>Spike</u> 2.50	<u>Result</u> 2.68	<u>Rec (%)</u> 107	<u>Spike</u> 2.50	<u>Result</u> 2.51	<u>Rec ('</u> 101	<u>%)</u>	<u>CL</u> 70-130	<u>RPD (%)</u> 6.40	<u>RPD CL</u> (< 25 )
Nitrite-N	0.0500U	2.50	2.62	105	2.50	2.82	113	*	90-110	7.50	(< 25 )
Batch Information											
Analytical Batch: WFI2505				Prep	Batch:						
Analytical Method: SM21 45	i00NO3-F			Prep	Method:	201					
Analyst: KBE				Pre	Prep Date/Time: Prep Initial Wt (Vol : 5.00ml						
Analytical Date/Time: 9/21/2	2016 5:48:33	PM		Prep	Extract V	/ol: 5.00m	۱L				

Print Date: 10/14/2016 5:16:11PM



QC for Samples:

# Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

# Billable Matrix Spike Summary

Original Sample ID: 1165622001 MS Sample ID: 1165622002 BMS MSD Sample ID: 1165622003 BMSD Analysis Date: 09/21/2016 16:26 Analysis Date: 09/21/2016 16:28 Analysis Date: 09/21/2016 16:30 Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500NO3-F Matrix Spike (mg/L) Spike Duplicate (mg/L) Parameter Sample Spike Result Rec (%) <u>Spike</u> Result Rec (%) RPD (%) RPD CL CL Nitrate-N 0.0500U 2.50 2.61 104 2.50 2.68 107 70-130 2.70 (< 25) Nitrite-N 0.0500U 2.50 2.55 102 2.50 2.63 105 90-110 2.90 (< 25)

### Batch Information

Analytical Batch: WFI2505 Analytical Method: SM21 4500NO3-F Instrument: Astoria segmented flow Analyst: KBE Analytical Date/Time: 9/21/2016 4:28:43PM Prep Batch: Prep Method: Prep Date/Time: Prep Initial Wt./Vol.: 5.00mL Prep Extract Vol: 5.00mL

Print Date: 10/14/2016 5:16:11PM

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SGS Method Blank			US/	AL-FG-GRZZZ-00-00
Blank ID: MB for HBN 174 Blank Lab ID: 15/ 7432	4343 <b>6</b> 9 [ ST/5/2]	Mairx	₩9 aipr ([ urf	acpt Eff.t Ground)
8 Q for [ aC mpe: 11s/ s00, , 1t 11s/ s00, , 4t 1	1s/ s00, , /			
rpedile by EFA 410.4				
SaraCpipr OPoC cal OW/yon DoC and	<u>Rpeulie</u>	<u>LO8 TQL</u> 0	<u>DL</u>	<u>Unxie</u> Cy <b>T</b>
Batch Information	,,, <b>,</b>	0, .,	3.0,	

gnalyixcal BaicP: 9 [ S/ 5/ 2 gnalyixcal MpiPod: ESg 41, .4 IneiruCpni: gnalyei: ABE gnalyixcal DaipThXCp: 1, T/TD, 1s 0:/ 0:, , SM

Srxni Daip: 1, T14T0, 1s /:1s:10SM

[G[NoriPgCprxaInc.

0, , 9 pei Soiipr DrxKp gncPoravpt gA 3/ / 12 t 3, 7./ s0.0545 f 3, 7./ s1./ 5, 1 www.ue.eve.coC



Blank Spike ID: LCS for HBN 1165622 [WSP5358] Blank Spike Lab ID: 1357499 Date Analyzed: 10/07/2016 14:52 Spike Duplicate ID: LCSD for HBN 1165622 [WSP5358] Spike Duplicate Lab ID: 1357500 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 1165622004, 1165622005

Results by EPA 410.4									
		Blank Spike	e (mg/L)	S	Spike Dupli	cate (mg/L)			
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Chemical Oxygen Demand	500	515	103	500	507	101	(90-110)	1.50	(< 25)
Batch Information Analytical Batch: WSP5358 Analytical Method: EPA 410.4 Instrument: Analyst: KBE				Pre Pre Pre Spil Dup	p Batch: p Method: p Date/Tim ke Init Wt./v pe Init Wt./v	ie: Vol.: 500 mg Vol.: 500 mg	g/L Extract V	'ol: 2 mL bl: 2 mL	

Print Date: 10/14/2016 5:16:13PM



#### Billable Matrix Spike Summary

Original Sample ID: 1165622001 MS Sample ID: 1165622002 BMS MSD Sample ID: 1165622003 BMSD Analysis Date: 10/07/2016 14:52 Analysis Date: 10/07/2016 14:52 Analysis Date: 10/07/2016 14:52 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by EPA 410.4										
		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
Parameter	Sample	<u>Spike</u>	Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Chemical Oxygen Demand	10.0U	500	478	96	500	482	96	90-110	0.88	(< 25)
Batch Information Analytical Batch: WSP5358 Analytical Method: EPA 410.4 Instrument: Analyst: KBE Analytical Date/Time: 10/7/20	4 016 2:52:00	PM		Prep Prep Prep Prep Prep	) Batch: ) Method: ) Date/Tin ) Initial Wt	ne: ://vol.: 2.0 /ol: 2.00m	i0mL iL			

Print Date: 10/14/2016 5:16:14PM

Method Blank					
Blank ID: MB for HBN 174 Blank Lab ID: 1355205	4220 [WTC/2634]	Matr	ix: Water (Surfa	ce, Eff., Ground)	
QC for Samples: 1165622001, 1165622004, 1	165622005, 1165622013, 116	65622014			
Results by SM 5310B		)			
<u>Parameter</u> Total Organic Carbon	<u>Results</u> 0.370J	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L	
Batch Information           Analytical Batch: WTC26           Analytical Method: SM 53           Instrument: TOC Analyze           Analyst: VDL           Analytical Date/Time: 9/2	34 310B 9r 7/2016 3:10:30PM				
nt Date: 10/14/2016 5:16:15PM					

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Blank Spike Summary			
Blank Spike ID: LCS for HBN Blank Spike Lab ID: 1355203 Date Analyzed: 09/27/2016	1165622 [WTC: 14:55	2634]	Matrix: Water (Surface Eff. Ground)
QC for Samples: 11656220	01, 1165622004,	1165622005, 1165	622013, 1165622014
Results by SM 5310B			
	Blank	Spike (mg/L)	
<u>Parameter</u> Total Organic Carbon	<u>Spike</u> <u>Res</u> 75 79.6	s <u>ult Rec (%)</u> 5 106	<u>CL</u> ( 80-120 )
Batch Information			
Analytical Batch: WTC2634 Analytical Method: SM 5310B Instrument: TOC Analyzer Analyst: VDL			Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 75 mg/L Extract Vol: 30 mL Dupe Init Wt./Vol.: Extract Vol:
nt Date: 10/14/2016 5:16:17PM			
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Original Sample ID: 1355210 MS Sample ID: 1355211 MS MSD Sample ID: 1355212 MSD Analysis Date: 09/27/2016 15:25 Analysis Date: 09/27/2016 15:41 Analysis Date: 09/27/2016 15:54 Matrix: Drinking Water

QC for Samples: 1165622001, 1165622004, 1165622005, 1165622013, 1165622014

Results by SM 5310B										
		Ма	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
<u>Parameter</u> Total Organic Carbon	<u>Sample</u> 1.82	<u>Spike</u> 10.0	<u>Result</u> 12.5	<u>Rec (%)</u> 107	<u>Spike</u> 10.0	<u>Result</u> 12.9	<u>Rec (%)</u> 111	<u>CL</u> 75-125	<u>RPD (%)</u> 3.10	<u>RPD CL</u> (< 25 )
Batch Information Analytical Batch: WTC263- Analytical Method: SM 531 Instrument: TOC Analyzer	4 0B			Prep Prep Prep	Batch: Method:	ne.				
Analyst: VDL Analytical Date/Time: 9/27	/2016 3:41:08	PM		Prep	Date, mi Distract N	t./Vol.: 30 Vol: 30.00	.00mL mL			

Print Date: 10/14/2016 5:16:18PM

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#### Billable Matrix Spike Summary

Original Sample ID: 1165622001 MS Sample ID: 1165622002 BMS MSD Sample ID: 1165622003 BMSD Analysis Date: 09/27/2016 15:25 Analysis Date: 09/27/2016 15:41 Analysis Date: 09/27/2016 15:54 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SM 5310B										
		Ма	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
Parameter	Sample	Spike	Result	<u>Rec (%)</u>	Spike	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Total Organic Carbon	1.82	10.0	12.5	107	10.0	12.9	111	75-125	3.10	(< 25 )
Batch Information										
Analytical Batch: WTC2634	4			Prep	Batch:					
Analytical Method: SM 531	0B			Prep	Method:					
Instrument: TOC Analyzer				Prep	Date/Tin	ne:				
Analyst: VDL				Prep	Initial W	t./Vol.: 30.	.00mL			
Analytical Date/Time: 9/27	/2016 3:41:08	PM		Prep	Extract \	/ol: 30.00	mL			

Print Date: 10/14/2016 5:16:18PM

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		Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16							
Method Blank		Matrix: Water (Surface, Eff., Ground)							
Blank ID: MB for HBN 17 Blank Lab ID: 1357435	44935 [WTC/2637]								
QC for Samples: 1165622010									
Results by SM 5310B									
<u>Parameter</u> Total Organic Carbon	<u>Results</u> 0.250U	<u>LOQ/CL</u> 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L					
Analyst: TMA Analytical Date/Time: 10	0/6/2016 4:48:45PM								

Print Date: 10/14/2016 5:16:19PM

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Blank Spike Summary			<u> </u>	
Blank Spike ID: LCS for HBN Blank Spike Lab ID: 1354033 Date Analyzed: 19/96/2916	1165622 [ˈ 16:33	WTC2634	]	u atriM Water xSsrfa(ec, ffE. rosndG
g C for SaP pleR 11656229	19			
-7 eRsItRby <b>SM 5310B</b>				
	E	Blank Spike	xP %LG	
<u>) araP eter</u> Total Qr%ani( Carbon	<u>Spike</u> 45	<u>7 eRslt</u> 45⊟	<u>7 e(_xmG</u> 199	<u>CL</u> x C98129 G
Batch Information				
Analyti(al Bat(-: WTC2637 Analyti(al u et-od: SM 5310B InRrsP ent: TOC Analyzer AnalyRt: TMA				) rep Bat(-: ) rep u et- od: ) rep Date/TiP e: Spike Init WtEholE 45 P %L , Mra(t hol: 39 P L Dspe Init WtEholE , Mra(t hol:
) rint Date: 19/10/2916 5:16:22) u	299	WeRt ) offe	er DriVe An( - or	a%ecAv K551O
S. S Nort- AP eri(a In	t K9	456212303	6 f K94561539	1 www.fs.RER%RE(oP
Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 S USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16 Matrix Spike Summary Original Sample ID: 135200M s nalt 9i9 Da/e: 1MMy 76M1y 14:MB AS Sample ID: 1352055 AS s nalt 9i9 Da/e: 1MMy 76M1y 14:1y ASD Sample ID: 135205y ASD s nalt 9i9 Da/e: 1MMy 76M1y 14:36 A a/rix: Drinking Wa/er QC for Sample9: 11y5y66M1M Re9ul/9 bt SM 5310B A a/rix Spike (mg7L) Spike Duplica/e (mg7L) Parame/er Sample <u>Spike</u> Re9ul/ Rec (%) <u>Spike</u> Re9ul/ Rec (%) CL RPD (%) RPD CL , o/al Organic Carbon 172M 25.165 1MM 1671 1M0 1MM 1174 1M1 676M (8 65) **Batch Information** s nalt /ical - a/c<: W, C6y32 Prep - a/c<: Prep A e/<oB: s nalt /ical A e/<oB: SA 531M In9/rumen/: , OC s nalt Ver Prep Da/e7, ime: snalt9/:,As Prep Ini/ial W/TholT 3MIMmL s nalt /ical Da/e7, ime: 1M7/76M1y y:1y:56PA Prep dx/rac/ hol: 3MIMmL Prin/ Da/e: 1M71076M1y 5:1y:63PA 6MMWe9/ Po//er DriGe s nc<orageNs v K5514

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Original Sample ID: 11y5y66M1M A S Sample ID: 11y5y66M11 - A S A SD Sample ID: 11y5y66M16 - A SD s nalt 9i9 Da/e: 1MWy76M1y 14:M8 s nalt 9i9 Da/e: 1MWy76M1y 14:1y s nalt 9i9 Da/e: 1MWy76M1y 14:36 A a/rix: Wa/er (SurfaceNdffTNE rounB)

QC for Sample9:

Re9ul/9 bt SM 5310B										
		Aa/	rix Spike (	mg7L)	Spike	e Duplica/e	e (mg7L)			
Parame/er	Sample	<u>Spike</u>	Re9ul/	<u>Rec (%)</u>	<u>Spike</u>	Re9ul/	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
, o/al Organic CarbonNDi99olGeB	172M	1MM	1671	1 MD	1MM	1174	1M1	25.165	6 <b>1</b> 6M	(8 65)
Batch Information s nalt /ical - a/c<: W, C6y32 s nalt /ical A e/ <ob: 531m<br="" sa="">In9/rumen/: , OC s nalt Ver s nalt 9/: , A s s nalt /ical Da/e7, ime: 11/ky76M</ob:>	ſſy y:1y:56P	A		Prep Prep Prep Prep Prep	- a/c<: A e/ <ob: Da/e7, im Ini/ial W/ d x/rac/ h</ob: 	ie: TholT 3M ol: 3MTM	<b>IM</b> mL mL			

Prin/ Da/e: 1M71076M1y 5:1y:63PA

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065			Sa USA	ampling and Testing L-FG-GRZZZ-00-00	) Report - Event 2 02016-004 Rev. 0 16-Dec-16
Duplicate Sample Sum	mary				
Original Sample ID: 1165651001 Duplicate Sample ID: 1354465 QC for Samples: 1165622001, 1165622004, 1165622005			Analysis Date: 0 Matrix: Water (S	9/23/2016 22:43 urface, Eff., Groui	nd)
Results by SM21 4500-I	НВ				
NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL
рН	8.40	8.40	pH units	0.00	(< 5)

Print Date: 10/14/2016 5:16:26PM



Dunlicate Sample Sum	mary						
Original Sample ID: 1165622001 Duplicate Sample ID: 1165622015			Analysis Date: 09/23/2016 19:46 Matrix: Water (Surface, Eff., Ground)				
QC for Samples:							
Results by SM21 4500-	НВ						
NAME	Original	Duplicate	<u>Units</u>	<u>RPD (%)</u>	RPD CL		
рН	8.30	8.20	pH units	1.20	(< 5)		
Batch Information							
Analytical Batch: WTI45 Analytical Method: SM2 Instrument: Titration	14 21 4500-Н В						
Analyst: KBE							
Print Date: 10/14/2016 5:16:26	6PM						

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Blank Spike Summary				
Blank Spike ID: LCS for HB Blank Spike Lab ID: 135446 Date Analyzed: 09/23/201 QC for Samples: 116562	N 1165622 [\ 52 6 18:05 2001, 1165622	WTI4514] 2004, 1165	5622005	Matrix: Water (Surface, Eff., Ground)
Deputs by SM24 4500 LL B			_	
Results by SM21 4500-H B	Dia	unk Enika (	nLl unito)	
Parameter	Spike		Rec (%)	Cl
bH	7	7.03	100	(99-101)
Batch Information				
Analytical Batch: WTI4514 Analytical Method: SM21 45 Instrument: Titration Analyst: KBE	00-H B			Prep Batch: Prep Method: Prep Date/Time: Spike Init Wt./Vol.: 7 pH units Extract Vol: 1 mL Dupe Init Wt./Vol.: Extract Vol:
nt Data: 10/14/2016 5:16:27PM				
nt Date: 10/14/2016 5:16:27PM				
SGS North America	a Inc. 200	West Potte 7.562.2343	er Drive Anchor 3 <b>f</b> 907.561.530	age, AK 95518 1 www.us.sgs.com

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Method Blank		_					
Blank ID: MB for HBN Blank ] aL ID: 1b/ 4/ b	Blank ID: MB for HBN 1744364 9 SI14/ 152 Blank ] aL ID: 1b/ 4/ b8		MairW/ aisr (murfacst Eff.t Ground)				
QC for map els0: 116/ 6, , 331t 116/ 6, , 3	334						
Rs0uli0 Ly SM21 232	0B						
Parap sisr	<u>Rs0uli0</u>		<u>10QTC]</u>	<u>D]</u>	<u>Unxi0</u>		
vlkalxnxiy	/ .33U		13.3	b.13	р д∏		
Batch Information v nalyixal BaicA: [ v nalyixal MsiAod: r In0irup sni: Sixraixor v naly0i: hBE v nalyixal DaisTSip s	SI4/15 mM,1,b,3B ::8ŢbŢ316 6:,5:/5PM						

Prxni Dais: 137147, 316 /:16:, 8PM

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SGS		US	Sampling and Testing GAL-FG-GRZZZ-00-0	g Report - Event 2 02016-004 Rev. 0 16-Dec-16	
Duplicate Sample Summary Original Sample ID: 1165536001 Duplicate Sample ID: 1354541 QC for Samples: 1165622001, 1165622004		Analysis Date: 09/23/2016 16:05 Matrix: Water (Surface, Eff., Ground)			
Results by SM21 2320E	3				
<u>NAME</u> Alkalinity	<u>Original</u> 70.3	Duplicate 70.4	<u>Units</u> mg/L	<u>RPD (%)</u> 0.14	<u>RPD CL</u> (< 25 )
Analytical Method: SM2 Instrument: Titration Analyst: KBE	21 2320B				

Print Date: 10/14/2016 5:16:30PM



Original Sample ID: 1165622 Duplicate Sample ID: 116562 QC for Samples:	001 22015		Analysis Date: Matrix: Water (	09/23/2016 19:46 Surface. Eff Grour	ad)		
			Analysis Date: 09/23/2016 19:46 Matrix: Water (Surface, Eff., Ground)				
Results by SM21 2320B							
NAME				<u>RPD (%)</u>			
Aikalinity	95.2	95.1	mg/∟	0.04	(< 25 )		
Batch Information Analytical Batch: WTI4518 Analytical Method: SM21 2320 Instrument: Titration Analyst: KBE	)B						
Print Date: 10/14/2016 5:16:30PM							

<b>SGS</b>				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
Blank Spike ID: LCS for HBN Blank Spike La3 ID: 1t 5454A Daye z nald0e9: A/ &t &A16	1165622 [V 1] :t R	VTI451] t	)	xayri(: WayercSMrfa, eE.ffŒ) roMh9P
C for Sa%pleu: 1165622/	A1E1165622	AA4		
s euMyu 3d SM21 2320B				
	B	lank Spike	c%78LP	
mara%eyer	<u>Spike</u>	<u>s euMy</u>	<u>se, cQP</u>	CL
lkaliniyd	25A	242	/ R	c] 5h115 P
Potob Information				
z naldyi, al Bay, V: WTI4518	B			mep Bay V: men x eWo9:
Inuy Meny. Titration	СU,			mep Daye8Ti%e:
z nalduy. KBE				Spike IniyWy38volG 25A%78L . (yra, yvol: 5A%L
				Divpe inity vvydav or G . (yra, y v or.
nvDave: 1481499416 5:16+1mv				
пураус. Плонтеслто 5.то.с ШК	1 244 1	Neuvm	ar Drige z n. Vor	a7eEz K / 5511
S) S Nory z %eri, a I	n, G t / AF	<b>3</b> 62Qt 4t	f / AR(561(5)t A	1 www@/u@7uĢo%

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LNG Facilities Groundwater Quality
Sampling and Testing Report - Event 2
USAL-FG-GRZZZ-00-002016-004 Rev. 0
16-Dec-16

SGS		Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16						
Method Blank								
Blank ID: MB for HBN Blank Lab ID: 125325	Blank ID: MB for HBN 1744369 [S TI/4562] Blank Lab ID: 1253259		Ma0r,t∶Sa0er i CxrfaWé(uffq Eroxn. G					
8 Q for Camples: 1135366995								
d esxl(s b) SM21 2320	B							
<u>Uarame@r</u> Olkal,n,0j	<u>d esxl0s</u> 5c99R	<u>Ly 8 /QL</u> 19Ø	<u>DL</u> 2c19	<u>Rn,@s</u> mP/L				
Batch Information								
Onal) QWal Ba0W: S T Onal) QWal Me0vo. : C Ins0rxmen0 T,0ra0on Onal) s0 g Bu Onal) QWal Da0e/T,me:	I4562 M61 6269B 19/2/6913 16:6A:96UM							

Ur,n0Da0e: 19/14/6913 5:13:22UM

CEC Nor0/ Omer,Va InVt

SGS	Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16				
Duplicate Sample Summ	nary				
Original Sample ID: 116 Dcplit a& Sample ID: 10 b Q (G Sample9: 11656AAuu5	Original Sample ID: 1165310uu1 Dcplit a4e Sample ID: 105605A b Q (G Sample9: 11656AAuu5		ynals9i9 Da4e: 1u/u0/Au16 10:u1 2 a4tiM x a4er W3cr(atef, ((Ef. rGcnod		
) e9cl49 Rs SM21 2320B					
<u>%y2,</u>	Original	Dcplit a4e	<u>Nni49</u>	<u>) CD ₩ d</u>	<u>) CD QU</u>
y I <alini4s< td=""><td>67<b>E</b>6</td><td>67账</td><td>mg/U</td><td>u₿L</td><td>WB A5 d</td></alini4s<>	67 <b>E</b> 6	67账	mg/U	u₿L	WB A5 d
Batch Information					
y nals4t al 2 e4TQo: S2 A1 In94cmen4 8i4a4Qn y nals94 Kh,	A0Auh				

Crin4Da4e: 1u/1k/Au16 5:16:0kC2

S. S %Gr4T y merit a Int E

Auu x e94CG44er Drive ynt TGragef yK L5517 tLu3556AEA0k0 fLu35561550u1 www.Ee9E9g9EFGm

SGS				Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Blank Spike Summary				
Blank Spike ID: LCS for HBN 1 Blank Spike La3 ID: 1] 56] 51 Date Analyzed: 1090] 92016 1	165622 2:] /	[WTI452] I	0	u atriM Water xSsrfa(ec, fft͡c. rosndG
QC for SaP pleR 116562200	5			
8eRsItR3y <b>SM21 2320B</b>				
		Blank Spike	exP%9LG	
<u>) araP eter</u>	<u>Spike</u>	<u>8 eRslt</u>	<u>8 e(xm</u> G	CL
Alkalinity	250	245	7-	x-5h115 G
Batch Information				
Analyti(al Bat(V: WTI4523 Analyti(al u etVod: SM21 2320B	5			) rep Bat(V: ) rep u etVod: ) rep Date9TiP e:
AnalyR: KBE				Spike Init WtBy olE 250 P %, Mra(t vol: 50 P L
int Date: 1091492016 5:16:] 5) u	- 200			2% = AK 7554
S. S NortV AP eri( a In(	E 200	0 WeRt)ott 0/ ₺562₺2] 4]	er Drige An( Vor   f 70/ E561E5] 0	a%ecAK /551- 1 www.fsRER%RE(oP
				u eP 3er of S. S. rosp

1165622001, 1165622004, 1165622005         Results by SM21 4500P-B,E         Parameter       Results         Drtho Phosphate-P       0.00500U         0.0100       0.00310         match Information         Analytical Batch: WDA3858         Analytical Method: SM21 4500P-B,E         Instrument: Discrete Analyzer 2         Analyst: NEG	Blank ID: MB for HBN 1743543 [WXX/1 Blank Lab ID: 1353684 QC for Samples:	1629]	Matrix	k: Water (Surfac	e, Eff., Ground)	
Parameter       Results       LOQ/CL       DL       Units         Ortho Phosphate-P       0.00500U       0.0100       0.00310       mg/L         atch Information         Analytical Batch: WDA3858       Prep Batch: WXX11629         Analytical Method: SM21 4500P-B,E       Prep Method: SM21 4500P-B,E         Instrument: Discrete Analyzer 2       Prep Date/Time: 9/21/2016 5:00:00PM         Analyst: NEG       Prep Initial Wt./Vol.: 25 mL	1165622001, 1165622004, 1165622005 Results by <b>SM21 4500P-B,E</b>					
atch Information         Analytical Batch: WDA3858         Analytical Method: SM21 4500P-B,E         Instrument: Discrete Analyzer 2         Analyst: NEG	Parameter Results Ortho Phosphate-P 0 00500		<u>LOQ/CL</u> 0.0100	<u>DL</u> 0.00310	<u>Units</u> ma/l	
Analytical Date/Time: 9/21/2016 5:37:39PM Prep Extract Vol: 25 mL	Analytical Batch: WDA3858 Analytical Method: SM21 4500P-B,E Instrument: Discrete Analyzer 2 Analyst: NEG Analytical Date/Time: 9/21/2016 5:37:3	39PM	Prep Ba Prep Me Prep Da Prep Init Prep Ex	tch: WXX11629 thod: SM21 4500 te/Time: 9/21/20 ial Wt./Vol.: 25 n tract Vol: 25 mL	0P-B,E 16 5:00:00PM 1L	

Print Date: 10/14/2016 5:16:37PM



Blank Spike ID: LCS for HBN 1165622 [V XX11629] Blank Spike Lab ID: 1353645 Date Analyzed: 09/21/2016 1u:34 Spike Dcpli7ate ID: LCSD for HBN 1165622 [V XX11629] Spike Dcpli7ate Lab ID: 1353646 Matrix: V ater Wscrfa7e(, fft . rocndG

g C for SaP ples: 1165622001( 116562200Q( 1165622005

Rescits by SM21 4500P-B,	E								
		Blank Spike	eWP%LG	S	Spike Dcpli	7ate ₩ %LG			
<u>) araP eter</u>	Spike	Resclt	<u>Re7WhG</u>	<u>Spike</u>	Resclt	<u>Re7WhG</u>	<u>CL</u>	<u>R)DWm</u> G	<u>R) D CL</u>
8 rtCo) CospCate-)	012	01211	106	012	01211	105	W45-115 G	0月Q	₩ 25 G
Batch Information Analyti7al Bat70 WDA3858 Analyti7al MetOod: SM21.45		) re	p Bat7Q. W	/XX11629	RE				
InstrcP ent: Discrete Analyz Analyst: NEG	zer 2			) re Spil Dcp	p Date/hiP ke Init V tET e Init V tET	e: <b>09/21/201</b> Fole 0E2P% Fole 0E2P%	<b>6 17:00</b> &L , xtra7t T ⊮L , xtra7t To	ol: 25 P L bl: 25 P L	

) rint Date: 10/1Q2016 5:16:Q0) M

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QC for Samples:

#### Billable Matrix Spike Summary

Original Sample ID: 1165622001 MS Sample ID: 1165622002 BMS MSD Sample ID: 1165622003 BMSD Analysis Date: 09/21/2016 17:40 Analysis Date: 09/21/2016 17:41 Analysis Date: 09/21/2016 17:41 Matrix: Water (Surface, Eff., Ground)

Results by SM21 4500P-B,E										
		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
<u>Parameter</u> Ortho Phosphate-P	<u>Sample</u> 0.0507	<u>Spike</u> 0.200	<u>Result</u> .257	<u>Rec (%)</u> 103	<u>Spike</u> 0.200	<u>Result</u> 0.260	<u>Rec (%)</u> 105	<u>CL</u> 75-125	<u>RPD (%)</u> 0.89	<u>RPD CL</u> (< 25 )
Batch Information Analytical Batch: WDA3858 Analytical Method: SM21 45 Instrument: Discrete Analyze Analyst: NEG Analytical Date/Time: 9/21/2	00P-B,E er 2 2016 5:41:05	PM		Prep Prep Prep Prep Prep	) Batch: V ) Method: ) Date/Tin ) Initial Wt	NXX11629 Ortho Ph ne: 9/21/2 t./Vol.: 25. /ol: 25.00	) osphorus SI 016 5:00:0 00mL mL	M4500P B 00PM	,E(W) Extra	act

Print Date: 10/14/2016 5:16:41PM

Darame,er       ) es(1.s       LUQ/CL       DL       ynt,s         DammontatN       5E5855y       5E155       5E5215       m- /L         atch Information       Orep Baug: WXX11629	
PhalRtual Baug: WDP2462 Oren Baug: WXX11629	
PnalRtual Da,sg. WDF 2 62Orep Da,ag. WDF 2 62PnalRtual Me,goG SM31 4855fNH2 .Orep Me,goG McTHUDIns,r( men,: Dtsure,e PnalRzer 3Orep Da,e/Ttme: 9/39/3516 1:55:55CPnalRs,: Nc .Orep Int,tal W,EVoIE 6 mLPnalRtual Da,e/Ttme: 9/39/3516 1:19:36OMOrep ci ,rau, Vol: 6 mL	M

Ortn, Da,e: 15/14/3516 8:16:43OM

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Blank Spike ID: LCS for HBN 1165622 [WXX11639] Blank Spike Lab ID: 1355450 Date Analyzed: 09/29/2016 13:21 Spike Duplicate ID: LCSD for HBN 1165622 [WXX11639] Spike Duplicate Lab ID: 1355451 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 1165622004, 1165622005

Results by SM21 4500-NH3 C	3								
		Blank Spike	e (mg/L)	5	Spike Duplie	cate (mg/L)			
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Ammonia-N	1	1.03	103	1	1.01	101	(75-125)	1.80	(< 25)
Analytical Batch: WDA3863 Analytical Method: SM21 4500 Instrument: Discrete Analyzer Analyst: NEG		Pre Pre Pre Spil Dup	o Batch: <b>W</b> o Method: o Date/Tim ke Init Wt./\ oe Init Wt./\	/XX11639 METHOD e: 09/29/201 /ol.: 1 mg/L /ol.: 1 mg/L	I <b>6 13:00</b> Extract Vol: Extract Vol:	: 6 mL 6 mL			

Print Date: 10/14/2016 5:16:45PM



Original Sample ID: 1165622001 MS Sample ID: 1165622002 BMS MSD Sample ID: 1165622003 BMSD Analysis Date: 09/29/2016 13:31 Analysis Date: 09/29/2016 13:32 Analysis Date: 09/29/2016 13:34 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SM21 4500-NH3	G									
		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
<u>Parameter</u> Ammonia-N	<u>Sample</u> 0.0893J	<u>Spike</u> 1.00	<u>Result</u> 1.06	<u>Rec (%)</u> 97	<u>Spike</u> 1.00	<u>Result</u> 1.02	<u>Rec (%)</u> 93	<u>CL</u> 75-125	<u>RPD (%)</u> 3.60	<u>RPD CL</u> (< 25 )
Batch Information Analytical Batch: WDA3863 Analytical Method: SM21 4 Instrument: Discrete Analyz Analyst: NEG Analytical Date/Time: 9/29/	3 500-NH3 G zer 2 2016 1:32:471	PM		Prep Prep Prep Prep Prep	) Batch: V ) Method: ) Date/Tin ) Initial Wt ) Extract V	VXX11639 Ammonia ne: 9/29/2 ./Vol.: 6.0 /ol: 6.00m	) 1 by SM21 4 016 1:00:0 0mL 1L	500F prep 0PM	(W)	

Print Date: 10/14/2016 5:16:46PM

Method Blank		7			
Blank ID: MB for HBN 174 Blank Lab ID: 1357360	4921 [WXX/11647]	Matri	x: Water (Surfa	ce, Eff., Ground)	
QC for Samples: 1165622001, 1165622004, 1	165622005				
Results by SM21 4500-N	D				
<u>Parameter</u> Total Kjeldahl Nitrogen	<u>Results</u> 0.500U	<u>LOQ/CL</u> 1.00	<u>DL</u> 0.310	<u>Units</u> mg/L	
Batch Information					
Analytical Batch: WDA38 Analytical Method: SM21 Instrument: Discrete Ana Analyst: NEG Analytical Date/Time: 10	369   4500-N D  lyzer 2  6/2016 5:02:26PM	Prep Ba Prep Me Prep Da Prep Ini Prep Ex	atch: WXX11647 ethod: METHOE ate/Time: 10/5/2 tial Wt./Vol.: 25 ttract Vol: 25 mL	7 ) 016 6:40:00PM mL	

Print Date: 10/14/2016 5:16:47PM

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Blank Spike ID: LCS for HBN 1165622 [WXX11647] Blank Spike Lab ID: 1357361 Date Analyzed: 10/06/2016 17:03 Spike Duplicate ID: LCSD for HBN 1165622 [WXX11647] Spike Duplicate Lab ID: 1357362 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 1165622004, 1165622005

Results by SM21 4500-N E	)								
		Blank Spike	e (mg/L)	5	Spike Dupli	cate (mg/L)			
Parameter	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Total Kjeldahl Nitrogen	4	4.34	108	4	4.11	103	(75-125)	5.40	(< 25)
Batch Information Analytical Batch: WDA3869 Analytical Method: SM21 4 Instrument: Discrete Analy Analyst: NEG	9 500-N D /zer 2			Pre Pre Pre Spil Dup	p Batch: <b>M</b> p Method: p Date/Tim ke Init Wt./\ be Init Wt./\	<b>/XX11647</b> <b>METHOD</b> e: <b>10/05/201</b> /ol.: 4 mg/L /ol.: 4 mg/L	I <b>6 18:40</b> Extract Vol: Extract Vol:	: 25 mL 25 mL	

Print Date: 10/14/2016 5:16:48PM



Original Sample ID: 1165622001 MS Sample ID: 1165622002 BMS MSD Sample ID: 1165622003 BMSD Analysis Date: 10/06/2016 17:06 Analysis Date: 10/06/2016 17:07 Analysis Date: 10/06/2016 17:08 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by SM21 4500-N D										
		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
Parameter	Sample	<u>Spike</u>	Result	<u>Rec (%)</u>	Spike	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Total Kjeldahl Nitrogen	0.500U	4.00	4.1	103	4.00	4.50	113	75-125	9.30	(< 25)
Batch Information Analytical Batch: WDA3869 Analytical Method: SM21 45 Instrument: Discrete Analyze Analyst: NEG Analytical Date/Time: 10/6/2	500-N D er 2 2016 5:07:41	PM		Prep Prep Prep Prep Prep	) Batch: V ) Method: ) Date/Tim ) Initial Wt ) Extract V	NXX11647 Distillation ne: 10/5/2 t./Vol.: 25. /ol: 25.00	, n TKN by P 016 6:40:0 00mL mL	henate (W 00PM	)	

Print Date: 10/14/2016 5:16:50PM

SGS North America Inc.

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<b>SGS</b>			Sar USAL	npling and Testing Report - Event 2 -FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
Method Blank				
Blank ID: MB for HB Blank Lab ID: 13576 QC for Samples: 1165622001, 1165622	N 1745089 [WXX/11649] 10 004, 1165622005	Matri	x: Water (Surfa	ce, Eff., Ground)
Results by EPA 300.	0			
Parameter	Results	LOQ/CL	DL	<u>Units</u>
Chloride	0.104J	0.200	0.0620	mg/L
Fluoride	0.100U	0.200	0.0620	mg/L
Sulfate	0.100U	0.200	0.0620	mg/L
3atch Information	]			
Analytical Batch: WIC5570 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Analytical Date/Time: 10/7/2016 6:18:06AM		Prep Ba Prep Me Prep Da Prep Da	atch: WXX11649 ethod: METHOD ate/Time: 10/6/20 tial Wt./Vol.: 10 m	016 4:32:00PM mL

Print Date: 10/14/2016 5:16:50PM



Blank Spike ID: LCS for HBN 1165622 [WXX11649] Blank Spike Lab ID: 1357611 Date Analyzed: 10/07/2016 06:40

Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 1165622004, 1165622005

Results by EPA 300.0 Blank Spike (mg/L) Parameter <u>CL</u> <u>Spike</u> Result Rec (%) Chloride (90-110) 5 5.06 101 Fluoride 5 5.24 105 (90-110) Sulfate 5 5.12 102 (90-110) **Batch Information** Analytical Batch: WIC5570 Prep Batch: WXX11649 Analytical Method: EPA 300.0 Prep Method: METHOD Instrument: Metrohm 733 DX2 Prep Date/Time: 10/06/2016 16:32 Spike Init Wt./Vol.: 5 mg/L Extract Vol: 10 mL Analyst: ACF Dupe Init Wt./Vol.: Extract Vol:

Print Date: 10/14/2016 5:16:52PM



Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

# Matrix Spike Summary

Original Sample ID: 1357613 MS Sample ID: 1357614 MS MSD Sample ID: 1357615 MSD Analysis Date: 10/07/2016 7:02 Analysis Date: 10/07/2016 7:24 Analysis Date: 10/07/2016 7:47 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 1165622004, 1165622005

Results by EPA 300.0			_							$ \longrightarrow$
		Mat	rix Spike (ı	mg/L)	Spike	e Duplicate	e (mg/L)			
Parameter	Sample	Spike	Result	<u>Rec (%)</u>	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Chloride	19.7	5.00	23.8	83 *	5.00	23.8	82 *	90-110	0.11	(< 15)
Fluoride	0.137J	5.00	5.28	103	5.00	5.25	102	90-110	0.55	(< 15)
Sulfate	1.73	5.00	7.15	108	5.00	7.12	108	90-110	0.46	(< 15 )

#### Batch Information

Analytical Batch: WIC5570 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Analytical Date/Time: 10/7/2016 7:24:55AM Prep Batch: WXX11649 Prep Method: EPA 300.0 Extraction Waters/Liquids Prep Date/Time: 10/6/2016 4:32:00PM Prep Initial Wt./Vol.: 10.00mL Prep Extract Vol: 10.00mL

Print Date: 10/14/2016 5:16:53PM

SGS North America Inc.



Original Sample ID: 1165622001 MS Sample ID: 1165622002 BMS MSD Sample ID: 1165622003 BMSD

QC for Samples:

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Analysis Date: 10/07/2016 7:02 Analysis Date: 10/07/2016 7:24 Analysis Date: 10/07/2016 7:47 Matrix: Water (Surface, Eff., Ground)

Results by EPA 300.0			_							
		Ма	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Chloride	19.7	5.00	23.8	83 *	5.00	23.8	82 *	90-110	0.11	(< 15)
Fluoride	0.137J	5.00	5.28	103	5.00	5.25	102	90-110	0.55	(< 15)
Sulfate	1.73	5.00	7.15	108	5.00	7.12	108	90-110	0.46	(< 15)

### Batch Information

Analytical Batch: WIC5570 Analytical Method: EPA 300.0 Instrument: Metrohm 733 DX2 Analyst: ACF Analytical Date/Time: 10/7/2016 7:24:55AM Prep Batch: WXX11649 Prep Method: EPA 300.0 Extraction Waters/Liquids Prep Date/Time: 10/6/2016 4:32:00PM Prep Initial Wt./Vol.: 10.00mL Prep Extract Vol: 10.00mL

Print Date: 10/14/2016 5:16:53PM

SGS North America Inc.

SGS	Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16
- Method Blank	]]
Blank ID: MB for HBN 1745619 [WXX/11653] Blank Lab ID: 1358671	Matrix: Water (Surface, Eff., Ground)
QC for Samples: 1165622001, 1165622004, 1165622005	
Results by SM21 4500P-B,E	]
Parameter Results	LOQ/CL DL Units
Total Phosphorus 0.00810J	0.0100 0.00310 mg/L
Batch InformationAnalytical Batch: WDA3870Analytical Method: SM21 4500P-B,EInstrument: Discrete Analyzer 3Analyst: NEGAnalytical Date/Time: 10/12/2016 6:43:34PM	Prep Batch: WXX11653 Prep Method: SM21 4500P-B,E Prep Date/Time: 10/7/2016 4:15:00PM Prep Initial Wt./Vol.: 25 mL Prep Extract Vol: 25 mL

Print Date: 10/14/2016 5:16:53PM



Blank Spike ID: LCS for HBN 1165622 [WXX116539 Blank Spike La] ID: 135b642 Date t nalAyez: 1d/12/2d16 14:35 Spike Duplica@ ID: LCSD for HBN 1165622 [WXX116539 Spike Duplica@ La] ID: 135b643 Ma@ix: Wa@er (Surface, Eff., Grounz)

QC for Samples: 1165622dd1, 1165622dd-, 1165622dd5

Resul0s ] A SM21 4500P-	B,E								
		Blank Spike	e (mg/L)	5	Spike Duplic	ca0e (mg/L)			
Parame@er	Spike	Resul0	<u>Rec (%)</u>	Spike	Resul0	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
7o0al P <osp<orus< td=""><td>d.2</td><td>d.2d-</td><td>1d2</td><td>d.2</td><td>d.216</td><td>1db</td><td>(b58115)</td><td>5.5d</td><td>(h 25 )</td></osp<orus<>	d.2	d.2d-	1d2	d.2	d.216	1db	(b58115)	5.5d	(h 25 )
t nalA0cal Ba0c<: WDA38 t nalA0cal Me0coz: SM21	70 4500P-B,E			Pre Pre	p Ba0c<: W p Me0 <oz:< th=""><th>/XX11653 SM21 4500F</th><th>Р-В,Е</th><th></th><th></th></oz:<>	/XX11653 SM21 4500F	Р-В,Е		
Ins0rumen0 Discrete Ana t nalAs0 NEG	lyzer 3			Pre Spil Dup	p Da0e/7im ke Ini0W0/7 pe Ini0W0/T	e: <b>10/07/20</b> 1 Fol.: d.2 mg Fol.: d.2 mg	<b>16 16:15</b> p/L Ex0ac0T /L Ex0ac0T	ol: 25 mL ol: 25 mL	

Prin0Date: 1d/1-/2d16 5:16:55PM

SGS Nor0< t merica Inc.



Original Sample ID: 1165622001 MS Sample ID: 1165622002 BMS MSD Sample ID: 1165622003 BMSD Analysis Date: 1091292016 1/:37 Analysis Date: 1091292016 1/:34 Analysis Date: 1091292016 1/:x0 MatriW ( ater uSf rca, eE. ccta ordf n) R

CP dr Samples:

besf Its ky SM21 4500P-B,I	Ξ									
		Ма	MatriWSpiLe umg9QR			e Df pli, ate	e umg9QR			
<u>%arameter</u> - dtal %8dsp8drf s	<u>Sample</u> 0@1x	<u>SpiLe</u> 0@00	<u>b esf lt</u> <b>G</b> 1	<u>be, uh R</u> 47	<u>SpiLe</u> 0@00	<u>b esf lt</u> 0 <b>3</b> 0/	<u>be, uh R</u> 4/	<u>PQ</u> / 5⊲25	<u>b%Duhl</u> 0@4/	<u>R</u> <u>b %D PQ</u> uX 25 R
Batch Information Analyti, al Bat, 8: (DA37/C Analyti, al Met8d): SM21 x: Instrf ment: Dis, rete Analyz Analyst: N. o Analyti, al Date9 ime: 10912	) 500%BE zer 3 292016 5:34:1	6%M		%гер %гер %гер %гер %гер	Bat, 8: ( Met8d): Date9 in Initial ( 1	(TT11653 - dtal %80 ne: 109 92 t@/dIG 25 VdI: 25@0	3 dsp8drf s u( 1016 x:15:0 @0mQ mQ	R. WG 10%M		

%rint Date: 1091x92016 5:16:56%M

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# Method Blank

SG

Blank ID: MB for HBN 1744043 [XXX/36385] Blank Lab ID: 1354415 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 1165622005

### Results by 8270D SIM (PEST)

Parameter	Results	LOQ/CL	<u>DL</u>	<u>Units</u>
4,4'-DDD	0.0150U	0.0300	0.00940	ug/L
4,4'-DDE	0.0150U	0.0300	0.00940	ug/L
4,4'-DDT	0.0150U	0.0300	0.00940	ug/L
Aldrin	0.0150U	0.0300	0.00940	ug/L
alpha-BHC	0.0150U	0.0300	0.00940	ug/L
alpha-Chlordane	0.0150U	0.0300	0.00940	ug/L
beta-BHC	0.0150U	0.0300	0.00940	ug/L
delta-BHC	0.0150U	0.0300	0.00940	ug/L
Dieldrin	0.0150U	0.0300	0.00940	ug/L
Endosulfan I	0.0150U	0.0300	0.00940	ug/L
Endosulfan II	0.0150U	0.0300	0.00940	ug/L
Endosulfan sulfate	0.0150U	0.0300	0.00940	ug/L
Endrin	0.0150U	0.0300	0.00940	ug/L
Endrin aldehyde	0.0150U	0.0300	0.00940	ug/L
Endrin ketone	0.0150U	0.0300	0.00940	ug/L
gamma-BHC (Lindane)	0.0150U	0.0300	0.00940	ug/L
gamma-Chlordane	0.0150U	0.0300	0.00940	ug/L
Heptachlor	0.0150U	0.0300	0.00940	ug/L
Heptachlor epoxide	0.0150U	0.0300	0.00940	ug/L
Methoxychlor	0.0150U	0.0300	0.00940	ug/L
Toxaphene	1.00U	2.00	0.620	ug/L
Surrogates				
2-Fluorobiphenyl (surr)	80.9	53-106		%
Terphenyl-d14 (surr)	89.3	58-132		%

### **Batch Information**

Analytical Batch: XMS9645 Analytical Method: 8270D SIM (PEST) Instrument: HP 6890 Series II MS2 SVOA Analyst: DSH Analytical Date/Time: 9/27/2016 4:55:00PM Prep Batch: XXX36385 Prep Method: SW3520C Prep Date/Time: 9/26/2016 9:01:30AM Prep Initial Wt./Vol.: 1000 mL Prep Extract Vol: 1 mL

Print Date: 10/14/2016 5:16:57PM

SGS North America Inc.



Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165622 [XXX36385] Blank Spike Lab ID: 1354416 Date Analyzed: 09/27/2016 17:11 Spike Duplicate ID: LCSD for HBN 1165622 [XXX36385] Spike Duplicate Lab ID: 1354417 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 1165622004, 1165622005

#### Results by 8270D SIM (PEST)

		Blank Spike	e (ug/L)		Spike Dupli	cate (ug/L)			
<u>Parameter</u>	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	Rec (%)	<u>CL</u>	<u>RPD (%)</u>	RPD CL
4,4'-DDD	0.25	0.216	87	0.25	0.216	86	(56-143)	0.30	(< 20)
4,4'-DDE	0.25	0.178	71	0.25	0.190	76	(57-135)	6.30	(< 20)
4,4'-DDT	0.25	0.238	95	0.25	0.236	95	(51-143)	0.88	(< 20)
Aldrin	0.25	0.150	60	0.25	0.168	67	(45-134)	11.60	(< 20)
alpha-BHC	0.25	0.161	64	0.25	0.177	71	(54-138)	9.70	(< 20)
alpha-Chlordane	0.25	0.179	72	0.25	0.192	77	(60-129)	7.10	(< 20)
beta-BHC	0.25	0.171	68	0.25	0.189	76	(56-136)	10.40	(< 20)
delta-BHC	0.25	0.159	64	0.25	0.175	70	(52-142)	9.50	(< 20)
Dieldrin	0.25	0.170	68	0.25	0.182	73	(60-136)	6.80	(< 20)
Endosulfan I	0.25	0.125	50	* 0.25	0.141	56	* (62-126)	11.30	(< 20)
Endosulfan II	0.25	0.167	67	0.25	0.164	65	(52-135)	1.90	(< 20)
Endosulfan sulfate	0.25	0.240	96	0.25	0.233	93	(62-133)	2.70	(< 20)
Endrin	0.25	0.213	85	0.25	0.218	87	(60-138)	2.30	(< 20)
Endrin aldehyde	0.25	0.208	83	0.25	0.213	85	(51-132)	2.70	(< 20)
Endrin ketone	0.25	0.240	96	0.25	0.233	93	(58-134)	3.10	(< 20)
gamma-BHC (Lindane)	0.25	0.160	64	0.25	0.177	71	(59-134)	10.10	(< 20)
gamma-Chlordane	0.25	0.172	69	0.25	0.195	78	(56-136)	12.20	(< 20)
Heptachlor	0.25	0.159	64	0.25	0.178	71	(54-130)	11.40	(< 20)
Heptachlor epoxide	0.25	0.172	69	0.25	0.193	77	(61-133)	11.70	(< 20)
Methoxychlor	0.25	0.274	110	0.25	0.258	103	(54-145)	6.40	(< 20)
Surrogates									
2-Fluorobiphenyl (surr)	0.5	65.3	65	0.5	70.9	71	(53-106)	8.30	
Terphenyl-d14 (surr)	0.5	79.8	80	0.5	79.6	80	(58-132)	0.26	

# **Batch Information**

Analytical Batch: XMS9645 Analytical Method: 8270D SIM (PEST) Instrument: HP 6890 Series II MS2 SVOA Analyst: DSH Prep Batch: XXX36385 Prep Method: SW3520C Prep Date/Time: 09/26/2016 09:01 Spike Init Wt./Vol.: 0.25 ug/L Extract Vol: 1 mL Dupe Init Wt./Vol.: 0.25 ug/L Extract Vol: 1 mL

Print Date: 10/14/2016 5:16:59PM

SGS North America Inc.



Desults by 0070D OIM (DEOT)

Original Sample ID: 1165622001 MS Sample ID: 1165622002 BMS MSD Sample ID: 1165622003 BMSD

QC for Samples:

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

Analysis Date: 09/28/2016 15:28 Analysis Date: 09/28/2016 15:44 Analysis Date: 09/28/2016 16:01 Matrix: Water (Surface, Eff., Ground)

Results by 8270D SINI (P	'ESI)									
		Ma	itrix Spike (	(ug/L)	Spike Duplicate (ug/L)					
Parameter	Sample	Spike	Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	CL	<u>RPD (%)</u>	RPD CL
4,4'-DDD	0.0155U	0.269	.273	102	0.255	0.233	91	56-143	16.10	(< 20)
4,4'-DDE	0.0155U	0.269	.203	75	0.255	0.172	67	57-135	16.60	(< 20)
4,4'-DDT	0.0155U	0.269	.179	67	0.255	0.158	62	51-143	13.00	(< 20)
Aldrin	0.0155U	0.269	.158	59	0.255	0.145	57	45-134	9.00	(< 20)
alpha-BHC	0.0155U	0.269	.195	73	0.255	0.168	66	54-138	14.90	(< 20)
alpha-Chlordane	0.0155U	0.269	.223	83	0.255	0.189	74	60-129	16.50	(< 20)
beta-BHC	0.0155U	0.269	.249	93	0.255	0.211	83	56-136	16.60	(< 20)
delta-BHC	0.0155U	0.269	.219	81	0.255	0.184	72	52-142	17.10	(< 20)
Dieldrin	0.0155U	0.269	.223	83	0.255	0.183	72	60-136	19.60	(< 20)
Endosulfan I	0.0155U	0.269	.168	63	0.255	0.145	57 *	62-126	15.00	(< 20)
Endosulfan II	0.0155U	0.269	.196	73	0.255	0.165	65	52-135	16.90	(< 20)
Endosulfan sulfate	0.0155U	0.269	.274	102	0.255	0.232	91	62-133	16.40	(< 20)
Endrin	0.0155U	0.269	.29	108	0.255	0.238	93	60-138	19.70	(< 20)
Endrin aldehyde	0.0155U	0.269	.25	93	0.255	0.208	82	51-132	18.40	(< 20)
Endrin ketone	0.0155U	0.269	.26	97	0.255	0.224	88	58-134	14.80	(< 20)
gamma-BHC (Lindane)	0.0155U	0.269	.187	70	0.255	0.167	66	59-134	11.10	(< 20)
gamma-Chlordane	0.0155U	0.269	.21	78	0.255	0.183	72	56-136	13.60	(< 20)
Heptachlor	0.0155U	0.269	.18	67	0.255	0.163	64	54-130	10.40	(< 20)
Heptachlor epoxide	0.0155U	0.269	.22	82	0.255	0.193	76	61-133	13.30	(< 20)
Methoxychlor	0.0155U	0.269	.229	85	0.255	0.199	78	54-145	14.20	(< 20)
Surrogates										
2-Fluorobiphenyl (surr)		0.538	.304	57	0.510	0.264	52 *	53-106	14.00	
Terphenyl-d14 (surr)		0.538	.44	82	0.510	0.375	73	58-132	16.00	

# **Batch Information**

Analytical Batch: XMS9648 Analytical Method: 8270D SIM (PEST) Instrument: HP 6890 Series II MS2 SVOA Analyst: DSH Analytical Date/Time: 9/28/2016 3:44:00PM Prep Batch: XXX36385 Prep Method: 3520 Liquid/Liquid Ext for Pest 8270 SIM Prep Date/Time: 9/26/2016 9:01:30AM Prep Initial Wt./Vol.: 930.00mL Prep Extract Vol: 1.00mL

Print Date: 10/14/2016 5:17:00PM

SGS North America Inc.

l Iethod Blank								
Blank ID: MB for HBN 174 Blank Lab ID: 1354959 QC for Samples:	4161 [XXX/36403]	Matrix: Water (Surface, Eff., Ground)						
Results by AK102								
Parameter	Results	LOQ/CL	<u>DL</u>	<u>Units</u>				
urrogates	0.380J	0.600	0.180	mg/∟				
a Androstane (surr)	104	60-120		%				
Analyst: NRO Analytical Date/Time: 10/	1/2016 12:39:00AM	Prep In Prep Ex	xtract Vol: 1 mL	) mL				

Print Date: 10/14/2016 5:17:01PM



Blank Spike ID: LCS for HBN 1165622 [VVVX69] Xb Blank Spike La3 ID: 1X5946] Date Analyzed: 1] [] 102] 16 ]]:9/ Spike Duplicate ID: LCSD for HBN 1165622 [VVVX69] Xb Spike Duplicate La3 ID: 1X59461 s atriM x ater Wourface(, fft . roundG

g C for SaP pleR 1165622] ] 1

7 eRultR3y AK102									
		Blank Spike	eW7%0LG	S	Spike Duplic	cate ₩7%0LG			
<u>) araP eter</u>	<u>Spike</u>	7 eRult	<u>7 ec WhG</u>	<u>Spike</u>	7 eRult	<u>7 ec Wh</u> G	<u>CL</u>	<u>7)DWm/G</u>	7) D CL
DieRel 7 an % Qr % anicR	2]	2] ∉	1] 9	2]	2] 🗄	1] X	W85C125 G	] 169	W 2] G
Surrogates									
5a AndroRtane WarrG	] 🕒	119	119	] 🕑	115	115	W6]C12]G	1臣]	
Batch Information									
Analytical Batc<: XFC12899 Analytical s et <od: ak102<br="">InRtruP ent: Agilent 7890B R AnalyR: NRO</od:>				) re ) re ) re Spil Dup	p Batc<: X p s et <od: p Date0niP ke Init x t⊞ pe Init x t⊞</od: 	XX36403 SW3520C e: 09/28/201 Tole 2] P%0 Tole 2] P%0	<b>6 08:46</b> , Mract To	l: 1 P L : 1 P L	

) rint Date: 1] 01902] 16 5:18:] X) s



Original Sample ID: 1135377661 MS Sample ID: 1135377667 4MS MSD Sample ID: 113537766A 4MSD y nalst it Da0e: 16/61/7613 7:63 y nalst it Da0e: 16/61/7613 7:13 y nalst it Da0e: 16/61/7613 7:73 Ma0ri2: x a0er VS (ruafec, uEc. rG (nod

LQuGrSamplet:

⊨) et (l0t Rs AK102										
		Ма	0ri2 Spibe V	₩ng/kd	Spib	Spibe D(plifa0e Whg/kd				
<u>Carameter</u> Diet el ) ange Organif t	<u>Sample</u> 6⊞938	<u>Spibe</u> 1%B	<u>) et ( l0</u> 19₿	<u>)efWPd</u> %7	<u>Spibe</u> 1%E7	<u>) et (I0</u> 13E%	<u>)ef WP/d</u> 95	<u>Qk</u> - 5<175	<u>)CDWPd</u> %a⊑6	<u>) CD Qk</u> ₩7 A6 d
Surrogates 5a y nor@ @ane W( rrd		6EA%7	En- 5	171	6EA95	6臣79	111	56<156	16556	
Batch Information y nals0f al 4a0 J: BvQ179% y nals0f al MeQlOo: yq167 Int 0( men0 ygilen0-9%64 ) y nals0 K) O y nals0f al Da0e/Nime: 16/1/70	613 7:13:6	96y M		Crep Crep Crep Crep Crep	) 4 a0f J: E ) MeQIGo: ) Da0e/Nin ) Ini0al x ) , 20raf 0\	3BBA3h6A QnŒkiX/k ne: %79/7 ŒVGE 75: /G: 1E66m	kiX, 20EuOry 613 9:h3:5 5666mk ik	r q 167/A k ( i1y M	GT VG	

Crin0Da0e: 16/1h/7613 5:1-:6hCM

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<b>SGS</b>		Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. ( 16-Dec-16								
<b>Method Blank</b> Blank ID: MB for HBN 1744161 Blank Lab ID: 1354959 QC for Samples: 1165622001	[XXX/36403]	Matrix: Water (Surface, Eff., Ground)								
Results by <b>AK103</b> Parameter Residual Range Organics	Results 0.250U	LOQ/CL 0.500	<u>DL</u> 0.150	<u>Units</u> mg/L						
<b>Surrogates</b> n-Triacontane-d62 (surr)	102	60-120		%						

Print Date: 10/14/2016 5:17:05PM



Blank Spike ID: LCS for HBN 1165622 [VVVX69] Xb Blank Spike La3 ID: 1X5946] Date Analyzed: 1] [] 102] 16 ]]:9/ Spike Duplicate ID: LCSD for HBN 1165622 [VVVX69] Xb Spike Duplicate La3 ID: 1X59461 s atriM x ater Wourface(, fft . roundG

g C for SaP pleR 1165622] ] 1

7 eRultR3y AK102									
		Blank Spike	₩7%0LG	5	Spike Duplic	cate WP %0LG			
<u>) araP eter</u>	<u>Spike</u>	<u>7 eRult</u>	<u>7 ec Wh</u> G	<u>Spike</u>	<u>7 eRult</u>	<u>7 ec Wh</u> G	<u>CL</u>	<u>7)DWm/</u> G	<u>7) D CL</u>
7 eRidual 7 an / e Qr / anicR	2]	2] 臣	1]]	2]	2] 🗄	1]]	W6]812]G	] 129	₩02] G
Surrogates									
n& riacontane&l62 WaurrG	] 🕑	1] 1	1] 1	] 🖻	1] 2	1] 2	W6]812]G	1堐]	
Batch Information									
Analytical Batc<: XFC18977				) re	p Batc<: X	XX26402			
Analytical s et <od: ak102<="" td=""><td></td><td></td><td></td><td>) re</td><td>p s et<od:< td=""><td>SW2580C</td><td></td><td></td><td></td></od:<></td></od:>				) re	p s et <od:< td=""><td>SW2580C</td><td></td><td></td><td></td></od:<>	SW2580C			
InRtruPent: Agilent R970B N				) re	p Date0 iP	e: 07/89/801	6 09:46		
AnalyR: ON3				Spi	ke Init x t🗗	nolE 2] P%0L	., Muractho	I: 1 P L	
				Dup	be Initxt⊞h	ole 2] P %	, Mracthol	1PL	

) rint Date: 1] 01902] 16 5:1T:2] ) s

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### Billable Matrix Spike Summary

Original Sample ID: 1165622001 MS Sample ID: 1165622002 BMS MSD Sample ID: 1165622003 BMSD Analysis Date: 10/01/2016 2:06 Analysis Date: 10/01/2016 2:16 Analysis Date: 10/01/2016 2:26 Matrix: Water (Surface, Eff., Ground)

QC for Samples:

Results by AK103			_							
		Ma	trix Spike (	mg/L)	Spike	e Duplicate	e (mg/L)			
Parameter	Sample	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Residual Range Organics	0.236U	19.6	19.4	99	19.2	17.7	92	60-140	9.20	(< 30)
Surrogates										
n-Triacontane-d62 (surr)		0.392	.416	106	0.385	0.355	92	50-150	15.90	
Batch Information Analytical Batch: XFC12899 Analytical Method: AK103 Instrument: Agilent 7890B R Analyst: NRO Analytical Date/Time: 10/1/20	016 2:16:00/	AM		Prep Prep Prep Prep Prep	9 Batch: X 9 Method: 9 Date/Tim 9 Initial Wt 9 Extract V	(XX36403 Cnt. Liq/L ne: 9/28/2 ./Vol.: 255 /ol: 1.00m	iq Ext. for A 016 8:46:5 5.00mL L	.K102/3 Lc 1AM	w Vol	

Print Date: 10/14/2016 5:17:23PM

SGS North America Inc.

Method Blank		]			
Blank ID: MB for HBN 174 Blank Lab ID: 1355963	4467 [XXX/30430]	Маж	<u>V</u> u axer cS, rfa	aEei.ffGd ro, n) R	
QC for Samples: 1105022t t 4i 1105022t t 5					
y es, lxs bU <b>AK102</b>		·			
<u>garamexer</u> DWeselyan8ePr8anWes	<u>y es, lxs</u> t <b>3</b> 00J	LPQ/CL tOptt	<u>DL</u> t 036t	<u>On\\\ m8/L</u>	
<b>Surrogates</b> 5a An) rosxane cs, rrR	111	0t -12t		%	
Batch Information					
AnalUABAIBaxEh: XFC129 AnalUABAIMexho): AK1t2 Insxr, menx A8Wenx769tE AnalUsx CyA AnalUABAIDaxe/TWne: 1t/	9t 1 2 3 y 3/2t 10 5:32:t t g M	grep Ba grep Me grep Da grep InV grep . (;	xEh: XXX30430 exho): Su352t xe/TWnte: 1t/3/2 Wantu x02VolG25 xraExVol: 1 mL	) C 2t 10 6:23:41AM it mL	

SGS



### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165622 [XXX36436] Blank Spike Lab ID: 1355984 Date Analyzed: 10/03/2016 17:42 Spike Duplicate ID: LCSD for HBN 1165622 [XXX36436] Spike Duplicate Lab ID: 1355985 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622004, 1165622005

Results by AK102									
		Blank Spike	e (mg/L)		Spike Duplic	cate (mg/L)			
Parameter	Spike	Result	<u>Rec (%)</u>	<u>Spike</u>	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Diesel Range Organics	20	21.0	105	20	20.9	105	(75-125)	0.30	(< 20 )
Surrogates									
5a Androstane (surr)	0.4	122	122	* 0.4	122	122	* (60-120)	0.72	
Batch Information									
Analytical Batch: XFC12901 Analytical Method: AK102 Instrument: Agilent 7890B R Analyst: CRA				Pre Pre Pre Sp Du	ep Batch: X ep Method: ep Date/Tim ke Init Wt./V pe Init Wt./V	<b>XX36436</b> <b>SW3520C</b> e: <b>10/03/20</b> /ol.: 20 mg. /ol.: 20 mg/	<b>16 08:23</b> /L Extract Vo /L Extract Vol	ol: 1 mL : 1 mL	

Print Date: 10/14/2016 5:17:27PM

ank ID: MB for HBN 1744 ank Lab ID: 1355963	467 [XXX/30430]	Маж\	(V.u axer cS, rf	aEei . ffGd ro, n) R	
C for Samples: 05022t t 4i 1105022t t 5					
es, lxs bU <b>AK103</b>					
arameær	<u>y es, lxs</u>	LPQ/CL	DL	<u>On Was</u>	
esW, al y an- e Pr- anMas	t <b>Q</b> 5t O	t CSt t	t G 5t	m- /L	
rrogates Mateonane 11 02 cs. rrR	1t 5	0t T12t		Δ	
		ot net			
ch Information					
hnalUNEal BaxEF: X8C129t	: 1	grep Ba	axEF: XXX3043	)	
hnalUNBal MexFo): hK1t3 Insyr meny: h-Wanx769tB	V	grep Me grep Da	exFo): Su 352t exe/%/Mole: 1t/3/	C 2t 10 6·23·41hM	
hnalUsx Cyh	y	grep In\	Ablux Bvolg 25	5t mL	
hnalUNABalDaxe/%Mie: 1t/3	/2t 10 5:32:t t g M	grep.(	xraExVol: 1 mL		

grWkDaxe: 1t/14/2t 10 5:17:26gM

Sd S NorxFhmer\Balla InEG

SGS



### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165622 [VVVX69X6] Blank Spike Lab ID: 1X55349 Date Analyzed: 10/0X/2016 1u:92 Spike Dcpli7ate ID: LCSD for HBN 1165622 [VVVX69X6] Spike Dcpli7ate Lab ID: 1X55345 Matrix: Water (Scrfa7e, Eff., Grocnd)

QC for Samples: 1165622009, 1165622005

Resclts by AK102									
		Blank Spike	e (mg/L)	S	Spike Dcpli7	/ate (mg/L)			
Parameter	Spike	Resclt	<u>Re7 (%)</u>	<u>Spike</u>	Resclt	<u>Re7 (%)</u>	CL	<u>RPD (%)</u>	RPD CL
Residcal Range 8 rgani7s	20	21.0	105	20	20.5	10X	(600120)	2.X0	(- 20)
Surrogates									
n&ria7ontane@62 (scrr)	0.9	106	106	0.9	105	105	(600120)	0.31	
Batch Information									
Analyti7al Bat7h: XFC19701 Analyti7al Method: AK102 Instrcment: Agilent 8R70B 3				Pre Pre Pre	p Bat7h: X p Method: p Date/ <im< td=""><td>XX26426 SW2590C e: 10/02/901</td><td>6 0R92</td><td></td><td></td></im<>	XX26426 SW2590C e: 10/02/901	6 0R92		
Analyst: C3A				Spi Dcp	be Init Wt./T	ol.: 20 mg/l ol.: 20 mg/L	Extra7t To	: 1 mL : 1 mL	

Print Date: 10/19/2016 5:1u:X0PM

SGS North Ameri7a In7.

### Method Blank

SG

Blank ID: MB for HBN 1744797 [XXX/36469] Blank Lab ID: 1356891 Matrix: Water (Surface, Eff., Ground)

QC for Samples: 1165622001, 1165622005

### Results by SW8082A

<u>Parameter</u>	Results	LOQ/CL	<u>DL</u>	<u>Units</u>
Aroclor-1016	0.200U	0.400	0.120	ug/L
Aroclor-1221	0.500U	1.00	0.310	ug/L
Aroclor-1232	0.0500U	0.100	0.0310	ug/L
Aroclor-1242	0.0500U	0.100	0.0310	ug/L
Aroclor-1248	0.0500U	0.100	0.0310	ug/L
Aroclor-1254	0.0500U	0.100	0.0310	ug/L
Aroclor-1260	0.0500U	0.100	0.0310	ug/L
Surrogates				
Decachlorobiphenyl (surr)	99	40-135		%

### **Batch Information**

Analytical Batch: XGC9551 Analytical Method: SW8082A Instrument: Agilent 7890B GC ECD SW R Analyst: S.G Analytical Date/Time: 10/6/2016 11:10:00PM Prep Batch: XXX36469 Prep Method: SW3520C Prep Date/Time: 10/6/2016 9:52:52AM Prep Initial Wt./Vol.: 1000 mL Prep Extract Vol: 1 mL

Print Date: 10/14/2016 5:17:32PM

SGS North America Inc.



### **Blank Spike Summary**

Blank Spike ID: LCS for HBN 1165622 [WWWX6369] Blank Spike Lab ID: 1X56492 Da@e t nalAyez: 1d/d6/2d16 2X:2d Spike Duplica@ ID: LCSD for HBN 1165622 [WWW&6369] Spike Duplica@ Lab ID: 1X5649X Ma@ix: ( a@er ,SurfaceE. ff@) rounzP

- C for Sa%ples: 1165622dd1E1165622dd3E1165622dd5

Resulus bA SW8082A			_							<
		Blank Spike	e ,uQLP	;	Spike Duplic	ca0e,uQ/LP				
mara%e0er	Spike	Resul0	<u>Rec ,g P</u>	Spike	Resul0	<u>Rec ,g P</u>	<u>CL</u>	<u>RmD,g</u> P	RmD CL	
t roclor71d16	1	d@3d	43	1	d <b>@</b> 1d	91	, 367129 P	4@id	,< Xd P	
t roclor7126d	1	1@5	1d5	1	1@13	1d3	, 3571X3 P	d <b>9</b> 6	,< Xd P	
Surrogates										
Decac8lorobip8enA ,surrP	1@d	95	95	1 Celd	95	95	, 3d71X5 P	d@id		

### **Batch Information**

t nalA0cal Ba0c8: XGC9551 t nalA0cal Me08oz: SW8082A Ins0u%en0 Agilent 7890B GC ECD SW R t nalAs0 S.G mrep Ba0:8: XXX36469 mrep Me08oz: SW3520C mrep Da0e/hi%e: 10/06/2016 09:52 Spike Ini0( 02FoIG 1 uQL . x0ac0ToI: 1 %L Dupe Ini0( 02FoIG 1 uQL . x0ac0ToI: 1 %L

mrin0Da0e: 1d/13/2d16 5:1V:X3mM

S) S Nor08 t %erica IncG



### Billable Matrix Spike Summary

Original Sample ID: 1165622001 MS Sample ID: 1165622002 BMS MSD Sample ID: 1165622003 BMSD Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

QC for Samples:

Analysis Date: 10/06/2016 23:51 Analysis Date: 10/07/2016 0:11 Analysis Date: 10/07/2016 0:22 Matrix: Water (Surface, Eff., Ground)

Results by SW8082A										
		Ма	atrix Spike	(ug/L)	Spik	e Duplicat	e (ug/L)			
<u>Parameter</u>	Sample	Spike	Result	Rec (%)	Spike	Result	<u>Rec (%)</u>	<u>CL</u>	<u>RPD (%)</u>	RPD CL
Aroclor-1016	0.204U	1.02	.908	89	1.02	0.704	69	46-129	25.30	(< 30)
Aroclor-1260	0.0510U	1.02	1.01	99	1.02	0.980	96	45-134	3.08	(< 30)
Surrogates										
Decachlorobiphenyl (surr)		1.02	0.959	94	1.02	0.939	92	40-135	2.15	

**Batch Information** 

Analytical Batch: XGC9551 Analytical Method: SW8082A Instrument: Agilent 7890B GC ECD SW R Analyst: S.G Analytical Date/Time: 10/7/2016 12:11:00AM Prep Batch: XXX36469

Prep Method: Liquid/Liquid Extraction for SW8080 PCB Prep Date/Time: 10/6/2016 9:52:52AM Prep Initial Wt./Vol.: 980.00mL Prep Extract Vol: 1.00mL

Print Date: 10/14/2016 5:17:36PM

SGS North America Inc.



## CHAIN OF CUSTODY RECORD

# SGS Environmental Services Inc.



NTACT: Jason Gray, SLR PHONE OJECT: Kenai Wells, Jame Event 2 PORTS TO: Jason Gray, SLR email jgray@	E NO: (offic			SGS Re	ference	#				page	1 of 1	
OJECT: Kenai Wells, lame Event 2 ⊃ORTS TO: Jason Gray, SLR email jgray@		ce) 264-6965								COOLEI	R ID 12	1
PORTS TO: Jason Gray, SLR email jgray		PROJECT 105.001 No.	148.16001		Preserv	e lon	AOR NO	OF a				K
	Øslrconsultii	ng.com		ະ າະ ບo	TYPE	sıkuəyo	е					
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4- 8 APT-3-0916 0	9/20/16	<del>10:32</del> ←	GW	∞	Î	×	×	×	time to 10:32	2		
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) みん MW-39B-0916 0	9/19/16	12:42	GW	°				×				
A-C MW-62A-0916 0	9/19/16	15:03	GW	e S				×	APT-3-0	1916		
) A-C TB-08-0916 0	09/19/16	10:31	TB	3				×	Revise 5	Sample		
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									J.G. 9/2	7/16		
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## CHAIN OF CUSTODY RECORD

# SGS Environmental Services Inc.



CLIENT: SLR	Consulting				SGS Rei	ference	:#:							2	0	2			
CONTACT:	Jason Gray, SLR	PHONE NO: (of	fice) 264-6965										ŏ	DOLE	ER .	10	14		
PROJECT: Name	Kenai Wells, Event 2		PROJECT 105.0 No.	00148.16001		Preserv Used		405UT		3	3	9407	014	014	3	0407	ever	euon	
REPORTS TO:	Jason Gray, SLR ema	iil jgray@slrconsult	ing.com		# 00	AMPLE TYPE	Uəb	-	(DOD)		enpis		Metals	sli	০৪৪০		, Aitrate,	· ^au	
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3180 Peger Road     5500 Business D	ive Anchorage, AK 99518 T∉ d Fairbanks, AK 99701 Tel: (≀ rive Wilminaton, NC 28405 T	al: (907) 562-2343 Fax 907) 474-8656 Fax: (9 "ai: (910) 350-1903 Fa	: (907) 561-5301 07) 474-9685 v [.] 1010 360-1557	1 1														. 0 16	lity

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### CHAIN OF CUSTODY RECORD

# SGS Environmental Services Inc.

CLIENT: SL	.R Consulting				SGS Re	ference	:#0						_		anac		- 5		Г
CONTACT:	Jason Gray, SLR PH(	ONE NO: (offic	ce) 264-6965											000	LER	I۵	12	1	
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REPORTS TC	): Jason Gray, SLR email jgi	ray@slrconsulti	ing.com		* 00	SAMPLE TYPE C =		- uəɓd	ical (OOC)	OC) solved	uo	enpis	Metals	SPU	088/0		, Nitrate,	, Viir	1
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## CHAIN OF CUSTODY RECORD

# SGS Environmental Services Inc.

CONTACT:         Jaan Gay, SLR         PHOLE (Thing)         Report (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)         Context (Thing)	CONTACT: Jasen Gray, SLR PHONE NO. (office) 264-8665 PROJECT: Renard Weils. PROJECT 105.00148.16001 Name Event Weils. PROJECT 105.00148.16001 REPORTS TO: Jasen Gray, SLR email gray@siconsulting.com 2006.EXTI REPORTS TO: Jasen Gray, SLR email gray@siconsulting.com 2006.EXTI 2006.EXTI REPORTS TO: Jasen Gray, SLR email gray@siconsulting.com 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI 2006.EXTI	CLIENT: SLR Con	sulting				SGS R	eferen	:# ə:					Dade	J J L	
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REPORTS TO: Jason Gay, SLR email jgray@sirconsulting.com NUOICE TO: Jason Gay, SLR email jgray@sirconsulting.com NUOICE TO: Jason Gay, SLR email jgray@sirconsulting.com 2. Bot Behalel Street Anchorage, Alaste 86:3306 2. Bot Behalel Street Anchorage, Alaste 86:3306 2. Bot Behalel Street Anchorage, Alaste 86:3056 2. Bot Behalel Street Anchorage, Alaste 86:3056 2. Bot Behalel Street Anchorage, Alaste 86:3056 2. Bot Behalel Street Anchorage, Alaste 86:305 2. Bot Behalel Street Anchorage, Alaste 86:3056 2. Bot Behalel Street Anchorage, Alaste 86:305 2. Bot Behalel Street Anchorage, Alaste 86:305 2. Bot Behalel Street Anchorage, Alaste 86:3056 3. Bot Behalel Street Anchorage, Alaste 86:3056 3. Bot Behalel Street Anchorage, Alaste 86:3056 3. Bot Behalel Street Anchorage, Alaste 86:3056 3. Bot Behalel Street Anchorage, Alaste 86:3056 3. Bot Behalel Street Anchorage, Alaste 86:3056 3. Bot Behalel Street Anchorage, Alaste 86:3056 3. Bot Behalel Street Anchorage, Alaste 80:305 3. Bot Behalel Street Anchorage, Street 80:305 3. Bot Behalel Street Anchorage, Street 80:305 3. Bot Behalel Street Anchorage, Street 80:305 3. Bot Behalel Street Anchorage, Street 80:305 3. Bot Behalel Street Anchorage, Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:305 3. Bot Behalel Street 80:	REPORTS TO: Jason Gray, SLR     amali jgray@sirconsulting.com <ul> <li></li></ul>	PROJECT: K Name	enai Wells, Event 2		PROJECT 105.00 No.	0148.16001		Preserv Used	940N	PUL						$\square$
NVOICE TO:         Bret Berglund, SLR         OUTE #: 32006           2700 Gambel Street Anchorage, Attaska 39603         2700 Gambel Street Anchorage, Attaska 39603         ATTAIX           2700 Gambel Street Anchorage, Attaska 39603         LdB NO         SAMPLE IDENTIFICATION         DATE         Time           44.2         APT-1-0916         09/20/16         10:32         GW         10         12         X         X           44.2         APT-1-0916         09/20/16         10:32         GW         10         12         X         X         Mis/MSD           (02) A.D         APT-1-0916         09/20/16         10:32         GW         10         12         X         X         Mis/MSD           (02) A.D         APT-1-0916         09/20/16         10:32         GW         10         12         X         X           (02) A.D         APT         APT-1-0916         10:32         GW         10         12         X         X           (02) A.D         APT         APT         10:32         GW         10         12         X         X           (02) A.D         APD         APT         APT         APT         APT         APT           APD         APD <td< td=""><td>NVOICE TO:     Bret Berglund, SLR     QUOTE #: 332060       2700 Gambell Street Anchorage, Alasta 9500     2700 Gambell Street Anchorage, Alasta 9500       2700 Gambell Street Anchorage, Alasta 9500     APT-1-0916       1000 ALD     Date       1010 ALD     APT-1-0916       1010 ALD     1012 X       1010 ALD     1012 X</td><td>REPORTS TO: Jas</td><td>on Gray, SLR em</td><td>ail jgray@slrcon</td><td>Isulting.com</td><td></td><td>າສ ບ ເ</td><td>AMPLE</td><td>siynsi</td><td></td><td></td><td></td><td></td><td></td><td><u> </u></td><td></td></td<>	NVOICE TO:     Bret Berglund, SLR     QUOTE #: 332060       2700 Gambell Street Anchorage, Alasta 9500     2700 Gambell Street Anchorage, Alasta 9500       2700 Gambell Street Anchorage, Alasta 9500     APT-1-0916       1000 ALD     Date       1010 ALD     APT-1-0916       1010 ALD     1012 X	REPORTS TO: Jas	on Gray, SLR em	ail jgray@slrcon	Isulting.com		າສ ບ ເ	AMPLE	siynsi						<u> </u>	
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Confidential

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16 Airport of Departure 808 - 267980 NA B PHONE JASON GUY SU2-6547 A1,55611 RESS & PHONE 21 SHIPPER'S ACCOUNT NUMBER SHIPPER'S NAME, ADDRESS & PHONE NOT NEGOTIABLE 5245 Alrport Industrial Rc AIR WAYBILL Fairbanks, Alaska 99709 (907) 474-1739 (AIR CONSIGNMENT NOTE) It is agreed that the goods described herein are accepted in apparent good order and condition (except as noted) for carri-SUBJECT TO THE CONDITIONS OF CONTRACTON THE REVERSE HEREOF. THE SHIPPER'S ATTENTION IS DRAWN OF NOTICE CONCERNING CARRIERS' LIMITATIONS OF LIABILITY. Shipper may increase such limitation of liability by declaring higher value for carriage and paying a supplemental charge if required. Shipper of his agent agrees to release carrier of any payn depute between himself and the consignee by remitting unpaid freight charges with in 48 hours of billing by carrier. 65-LABS Jellin P2( Received In Good Condition TO EXPEDITE MOVEMENT, SHIPMENT MAY BE DIVERTED TO MOTOR OR OTHER CARRIER AS PER TARIFF RULE UNLI SHIPPER GIVES OTHER INSTRUCTION HEREON. ANCHCRIAGE, M. G9518 ISSUING CARRIER'S AGENT NAME AND CITY & PHONE CHECK ONE ALSO NOTIFY NAME AND ADDRESS DOMESTIC INTERNATION/ ACCOUNTING INFORMATION ACCOUNT NO. AGENT'S IATA CODE C. 105.00 9.16601 I DECLARED VALUE FOR CARRIAGE AIRPORT OF DEPARTURE (ADDRESS OF FIRST CARRIER) AND REQUESTED ROUTING DECLARED VALUE FOR CUST BY FIRST CARRIER 1-1 AIRPORT OF DESTINATION E NC STATION NUMBERS: KENAI: 283-3028 KOTZEBUE: 442-3373 UNALAKLEET: 624-3595 NOME: 443-2414 ANCHORAGE: 243-2761 BETHEL: 543-5863 CORDOVA: 424-3279 KODIAK: 487-4363 BARROW: 852-8333 NUIQSUT: 480-1616 ANIAK: (866) 332-3131 VALDEZ: 835-2636 HOMER: 235-5205 ST. MARY'S: 438-2247 DEADHORSE: 659-9222 BARTER ISLAND: 640-7902 NATURE AND QUANTITY OF GOODS (INCLU. DIMENSIONS OR VOLUME) RATE CLASS CHARGEABLE NO: OF PIECES RCP GROSS 1.12 kg TOTAL COMMODITY ITEM NO. CHARGE WEIGHT Ib WEIGHT 216 50 mp/ 155 1165622 DESCRIPTION OF ORIGIN ADVANCE ORIGIN ADVANCE CHARGES COLLECT P-UP PICKUP CHARGES WEIGHT CHARGE ZONE DESCRIPTION OF DEST. ADVANCE P-UF DEST. ADVANCE CHARGES DELIVERY CHARGES VALUATION CHARGE ZONE ITEMS HAZMAT ITEM ONE PIECE OVER 150 M OTHER CHARGES AND DESCRIPTION FEDERAL EXCISE TAX COLLE YES / NO YES / NO Shipper certifies that the particulars on the face hereof are correct and that insofar as any part of the consignment contains restricted articles, such part is pro TOTAL OTHER CHARGES DUE AGENT described by name and is in proper condition for carriage by air according to applicable national government regulations, and for international shipments the ci International Air Transport Association's Dangerous Goods Regulations TOTAL OTHER CHARGES DUE CARRIER SIGNATURE OF SHIPPER OR HIS AGENT (AMOUNT TO BE ENTERED BY SHIPPER) INITIAL CURRENCY COD FOR PRIORITY SERVICE TOTAL COLLECT PERSON CONTACTED BY INSTRUCTIONS TO CARRIEF PHONE DATE TIME 147 of 173 E-941



### Laboratory Report of Analysis

To: SLR Alaska-Anchorage 2700 Gambell St Suite 200 Anchorage, AK 99503 (907)222-1112

Report Number: 1165638

Client Project: Kenai Wells Event 2

Dear Jason Gray,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely,	$\int \partial \partial \partial \partial$	Justin Nelson
SGS North America Inc.	Justice	2016.10.10
	SGS North America Inc. Environmental Services – Alaska Division Project Manager	15:33:09 -08'00'

Justin Nelson Project Manager Justin.Nelson@sgs.com Date

Print Date: 10/10/2016 3:16:58PM

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518 t 907.562.2343 f 907.561.5301 www.us.sgs.com



### Case Narrative

### SGS Client: SLR Alaska-Anchorage SGS Project: 1165638 Project Name/Site: Kenai Wells Event 2 Project Contact: Jason Gray

Refer to sample receipt form for information on sample condition.

### MW-138B-0916 (1165638001) PS

9222D - Fecal coliform sample received and analyzed past hold time. ADEC allows 8 hours from the time of collection to analysis.

### APT-2-0916 (1165638002) PS

Chlorophyll a was analyzed by ALS of Kelso, WA.

9222D - Fecal coliform sample received and analyzed past hold time. ADEC allows 8 hours from the time of collection to analysis.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 10/10/2016 3:16:59PM

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### Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <<u>http://www.sgs.com/en/Terms-and-Conditions.aspx></u>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

Any holder of this document is advised that information contained hereon reflects the Company's findings at the time of its intervention only and within the limits of Client's instructions, if any. The Company's sole responsibility is to its Client and this document does not exonerate parties to a transaction from exercising all their rights and obligations under the transaction documents. Any unauthorized alteration, forgery or falsification of the context or appearance of this document is unlawful and offenders may be prosecuted to the fullest extent of the law.

SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
В	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
Μ	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.
Sample summaries which i All DRO/RRO analyses are	nclude a result for "Total Solids" have already been adjusted for moisture content.

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Note:

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		Sample Summary										
nple ID Collected	Received	Matrix										
3001 09/21/201	6 09/22/2016	6 Water (Surface, Eff., Ground)										
3002 09/21/201	6 09/22/2016	6 Water (Surface, Eff., Ground)										
09/21/201	6 09/22/2016	6 Water (Surface, Eff., Ground)										
	nple ID         Collected           8001         09/21/201           8002         09/21/201           8003         09/21/201	nple ID         Collected         Received           8001         09/21/2016         09/22/2016           8002         09/21/2016         09/22/2016           8003         09/21/2016         09/22/2016										

Method SM21 9222D Method Description Fecal Coliform (MF)

Print Date: 10/10/2016 3:17:01PM

SGS				Sa USAL	LNG Fa npling a -FG-GF	acilities Ground and Testing Re RZZZ-00-00201	Confidential Iwater Quality port - Event 2 I6-004 Rev. 0 16-Dec-16
Results of <b>MW-138B-0916</b> Client Sample ID: <b>MW-138B-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165638001 Lab Project ID: 1165638		C R M S L					
Parameter Fecal Coliform	<u>Result Qual</u> 1.00 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 1.00	<u>Units</u> col/100mL	<u>DF</u> . 1	<u>Allowable</u> Limits	Date Analyzed 09/22/16 11:38
Batch Information Analytical Batch: BTF15123 Analytical Method: SM21 9222D Analyst: DSH Analytical Date/Time: 09/22/16 11:38 Container ID: 1165638001-A							
rint Date: 10/10/2016 3:17:03PM						J flaggin	g is activated
SGS North America Inc. t 9	0 West Potter Dri 07.562.2343 <b>f</b> 90	ive Anchorage 7.561.5301 w	, AK 95518 ww.us.sgs.o	com		Manaha	

SGS				LNG Samplin USAL-FG-	Facilities Groun g and Testing Ro GRZZZ-00-0020	Confidential dwater Quality eport - Event 2 16-004 Rev. 0 16-Dec-16	
Results of APT-2-0916							
Client Sample ID: <b>APT-2-0916</b> Client Project ID: <b>Kenai Wells Event 2</b> Lab Sample ID: 1165638002 Lab Project ID: 1165638		Collection Date: 09/21/16 14:00 Received Date: 09/22/16 08:00 Matrix: Water (Surface, Eff., Ground) Solids (%): Location:					
Results by Microbiology Laboratory			_				
Parameter Fecal Coliform	<u>Result Qual</u> 1.00 U	<u>LOQ/CL</u> 1.00	<u>DL</u> 1.00	<u>Units</u> DF col/100mL 1	<u>Allowable</u> <u>Limits</u>	Date Analyzed 09/22/16 11:38	
Batch Information Analytical Batch: BTF15123 Analytical Method: SM21 9222D Analyst: DSH Analytical Date/Time: 09/22/16 11:38 Container ID: 1165638002-A							
rint Date: 10/10/2016 3:17:03PM					J flaggir	ng is activated	
SGS North America Inc.	0 West Potter Dri 07.562.2343 <b>f</b> 90	ve Anchorage 7.561.5301 w	, AK 95518 ww.us.sgs.o	com	Momh	or of SCS Croup	

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SGS			US	Sampling and Testing Report - Even GAL-FG-GRZZZ-00-002016-004 Rev 16-Dec-	ıt 2 7. 0 -16					
Method Blank										
Blank ID: MB for HBN Blank Lab ID: 1354233	1743800 [BTF/15123] }	l	Matrix: Water (Surface, Eff., Ground)							
QC for Samples: 1165638001, 116563800	2									
Results by SM21 9222	D									
Parameter Fecal Coliform	Results	<u>LOQ/(</u>	<u>CL DL</u>	Units						
Batch Information Analytical Batch: BTF Analytical Method: St Instrument: Analyst: DSH Analytical Date/Time:	-15123 M21 9222D 9/22/2016 11:38:00AM									

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SGS North America Inc.

SGS			e US,	Sampling and Testing Report - Event 2 AL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16				
Method Blank	1743900 [DTE/15123]	Mate	iv: Wator (Sur	face Eff. Ground)				
Blank Lab ID: 1354239	)	Wathx. Water (Surface, Ell., Ground)						
QC for Samples: 1165638001, 116563800	2							
Results by SM21 9222	D							
<u>Parameter</u> Fecal Coliform	<u>Results</u> 1.00U	<u>LOQ/CL</u> 1.00	<u>DL</u> 1.00	<u>Units</u> col/100mL				
Batch Information Analytical Batch: BTF Analytical Method: S Instrument: Analyst: AEE Analytical Date/Time:	515123 M21 9222D 9/22/2016 4:10:00PM							

Print Date: 10/10/2016 3:17:05PM

SGS North America Inc.



## CHAIN OF CUSTODY RECORD

# SGS Environmental Services Inc.



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	SLR Consulting	: Jason Gray, SLR PHOI	Kenai Wells, Event 2	TO: Jason Gray, SLR email jgra	O: Bret Berglund, SLR 2700 Gambell Street Anchors	SAMPLE IDENTIFICATION	M4/-1383-0916	APT-2-0916	MW-1386-096						linguished By: ()	(may man)	Dy. (2)	By: (3)		By: (4)		tter Drive Anchorage, AK 99518 Tel: (907)
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 3180 Peger Road Fairbanks, AK 99701 Tel: (907) 474-8656 Fax: (907) 474-9685

 5500 Business Drive Wilmington, NC 28405 Tel: (910) 350-1903 Fax: (910) 350-1557

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Review Criteria	Y/N (yes/n	o)	Exc	ceptions N	oted be	low		
			exemption perr	mitted if sam	pler hand	carries/del	ivers.	
Were Custody Seals intact? Note # 8	& location Y			1F-1B				
COC accompanied	samples? Y							
**exemption perm	hitted if chilled & c	ollected <8	hrs ago or chlling no	ot required (i	i.e., waste,	oil)		
	Y	Cooler ID:	. 1	@	1.6	°C Ther	m ID:	D11
	Y	Cooler ID:	4	@		°C Ther	m ID:	
Temperature blank compliant* (i.e., 0-6 °C i	after CF)? Y	Cooler ID:	4	@		°C Ther	m ID:	
	Y	Cooler ID:	4	@		°C Ther	m ID:	
*11 COC	Y	Cooler ID:	<u> </u>	(0)		°C Ther	m ID:	
*If >0°C, were samples collected <0 not	urs ago?							
If 20°C were sample containers	ing from?							
II <u c,="" containers<="" sample="" td="" were=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td></u>								
If samples received <u>without</u> a temperature blank, the "cooler tempera	ture" will							
be documented in lieu of the temperature blank & "COOLER TEMP" w	ill be							
noted to the right. In cases where neither a temp blank nor cooler ten obtained note "ambient" or "chilled"	np can be							
obtailed, note ambient of chilled.								
Note: Identify containers received at non-compliant temperature. Us	e form							
FS-0029 If more space is needed.								
		lote: Refer	to form F-083 "Sam	nple Guide" fo	<mark>or hold tim</mark>	les.	ior te	Tacioní
Were samples received within n	old time?			Ft	2Cais proke	noid time	рпоги	reciep
De service mateix COCXX (i a comple IDs dates /times s								
Do samples <b>match CUC</b> (i.e., sample iDs, dates) times to								
	per COC.							
were analyses requested unam								
			***Exemption	permitted for	<mark>r metals (e</mark>	.g,200.8/6	020A).	
Were proper containers (type/mass/volume/preservative*	***)used? Y							
IF APPLICABLE								
Were Trip Blanks (i.e., VOAs, LL-Hg) in cooler with	samples? Y							
Were all VOA vials free of headspace (i.e., bubbles	<mark>s ≤ 6mm)?</mark> Y							
Were all soil VOAs field extracted with Me	OH+BFB? Y							
Note to Client: Any "no" answer above indicate	s non-compliance	with stand	lard procedures and	l may impact	data quali	ty.		
Addi	tional notes (if	applicab						
Auun	cional notes (in	applicas	lej.					



### **Sample Containers and Preservatives**

<u>Container Id</u>	<u>Preservative</u>	<u>Container</u> Condition	<u>Container Id</u>	<u>Preservative</u>	<u>Container</u> Condition
1165638001-A 1165638002-A 1165638002-B	Na2S2O3 for Chlorine Redu Na2S2O3 for Chlorine Redu No Preservative Required	ок ок ок			

Container Condition Glossary

Containers for bacteriological, low level mercury and VOA vials are not opened prior to analysis and will be assigned condition code OK unless evidence indicates than an inappropriate container was submitted.

OK - The container was received at an acceptable pH for the analysis requested.

BU - The container was received with headspace greater than 6mm.

DM- The container was received damaged.

FR- The container was received frozen and not usable for Bacteria or BOD analyses.

PA - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt and the container is now at the correct pH. See the Sample Receipt Form for details on the amount and lot # of the preservative added.

PH - The container was received outside of the acceptable pH for the analysis requested. Preservative was added upon receipt, but was insufficient to bring the container to the correct pH for the analysis requested. See the Sample Persint Form for details on the amount and let # of the analysis added to the correct pH for the analysis added to the sample Persint Form for details on the amount and let # of the analysis added to the correct pH for the analysis added to the sample Persint Form for details on the amount and let # of the analysis added to the correct pH for the analysis added to the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for the same persint for

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9/22/2016



ALS Environmental ALS Group USA, Corp 1317 South 13th Avenue Kelso, WA 98626 **T**:+1 360 577 7222 **F**:+1 360 636 1068 www.alsglobal.com

October 03, 2016 Ana

Analytical Report for Service Request No: K1611365

Julie Shumway SGS Environmental Services, Inc. 200 West Potter Drive Anchorage, AK 99518

### RE: 1165638

Dear Julie,

Enclosed are the results of the sample(s) submitted to our laboratory September 23, 2016 For your reference, these analyses have been assigned our service request number **K1611365**.

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. The test results meet requirements of the current NELAP standards, where applicable, and except as noted in the laboratory case narrative provided. For a specific list of NELAP-accredited analytes, refer to the certifications section at www.alsglobal.com. All results are intended to be considered in their entirety, and ALS Group USA Corp. dba ALS Environmental (ALS) is not responsible for use of less than the complete report. Results apply only to the items submitted to the laboratory for analysis and individual items (samples) analyzed, as listed in the report.

Please contact me if you have any questions. My extension is 3364. You may also contact me via email at howard.holmes@alsglobal.com.

Respectfully submitted,

ALS Group USA, Corp. dba ALS Environmental

for

and mallich

Howard Holmes Project Manager

E-955





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### **Table of Contents**

Acronyms Qualifiers State Certifications, Accreditations, And Licenses Chain of Custody General Chemistry

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### Acronyms

ASTM	American Society for Testing and Materials
A2LA	American Association for Laboratory Accreditation
CARB	California Air Resources Board
CAS Number	Chemical Abstract Service registry Number
CFC	Chlorofluorocarbon
CFU	Colony-Forming Unit
DEC	Department of Environmental Conservation
DEQ	Department of Environmental Quality
DHS	Department of Health Services
DOE	Department of Ecology
DOH	Department of Health
EPA	U. S. Environmental Protection Agency
ELAP	Environmental Laboratory Accreditation Program
GC	Gas Chromatography
GC/MS	Gas Chromatography/Mass Spectrometry
LOD	Limit of Detection
LOQ	Limit of Quantitation
LUFT	Leaking Underground Fuel Tank
M MCL	Modified Maximum Contaminant Level is the highest permissible concentration of a substance allowed in drinking water as established by the USEPA.
MDL	Method Detection Limit
MPN	Most Probable Number
MRL	Method Reporting Limit
NA	Not Applicable
NC	Not Calculated
NCASI	National Council of the Paper Industry for Air and Stream Improvement
ND	Not Detected
NIOSH	National Institute for Occupational Safety and Health
PQL	Practical Quantitation Limit
RCRA	Resource Conservation and Recovery Act
SIM	Selected Ion Monitoring
TPH tr	Total Petroleum Hydrocarbons Trace level is the concentration of an analyte that is less than the PQL but greater than or equal to the MDL.

- Inorganic Data Qualifiers
- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- E The result is an estimate amount because the value exceeded the instrument calibration range.
- J The result is an estimated value.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL. DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- $i \,$   $\,$  The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.
- H The holding time for this test is immediately following sample collection. The samples were analyzed as soon as possible after receipt by the laboratory.

### **Metals Data Qualifiers**

- # The control limit criteria is not applicable. See case narrative.
- J The result is an estimated value.
- E The percent difference for the serial dilution was greater than 10%, indicating a possible matrix interference in the sample.
- M The duplicate injection precision was not met.
- N The Matrix Spike sample recovery is not within control limits. See case narrative.
- S The reported value was determined by the Method of Standard Additions (MSA).
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
- DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- W The post-digestion spike for furnace AA analysis is out of control limits, while sample absorbance is less than 50% of spike absorbance.
- i The MRL/MDL or LOQ/LOD is elevated due to a matrix interference.
- X See case narrative.
- + The correlation coefficient for the MSA is less than 0.995.
- Q See case narrative. One or more quality control criteria was outside the limits.

### **Organic Data Qualifiers**

- * The result is an outlier. See case narrative.
- # The control limit criteria is not applicable. See case narrative.
- A A tentatively identified compound, a suspected aldol-condensation product.
- B The analyte was found in the associated method blank at a level that is significant relative to the sample result as defined by the DOD or NELAC standards.
- C The analyte was qualitatively confirmed using GC/MS techniques, pattern recognition, or by comparing to historical data.
- D The reported result is from a dilution.
- $E \qquad \text{The result is an estimated value.}$
- J The result is an estimated value.
- N The result is presumptive. The analyte was tentatively identified, but a confirmation analysis was not performed.
- P The GC or HPLC confirmation criteria was exceeded. The relative percent difference is greater than 40% between the two analytical results.
- U The analyte was analyzed for, but was not detected ("Non-detect") at or above the MRL/MDL.
   DOD-QSM 4.2 definition : Analyte was not detected and is reported as less than the LOD or as defined by the project. The detection limit is adjusted for dilution.
- i The MRL/MDL or LOQ/LOD is elevated due to a chromatographic interference.
- X See case narrative.
- Q See case narrative. One or more quality control criteria was outside the limits.

### Additional Petroleum Hydrocarbon Specific Qualifiers

- F The chromatographic fingerprint of the sample matches the elution pattern of the calibration standard.
- L The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of lighter molecular weight constituents than the calibration standard.
- H The chromatographic fingerprint of the sample resembles a petroleum product, but the elution pattern indicates the presence of a greater amount of heavier molecular weight constituents than the calibration standard.
- O The chromatographic fingerprint of the sample resembles an oil, but does not match the calibration standard.
- Y The chromatographic fingerprint of the sample resembles a petroleum product eluting in approximately the correct carbon range, but the elution pattern does not match the calibration standard.
- Z The chromatographic fingerprint does not resemble a petroleum product.

### ALS Group USA Corp. dba ALS Environmental (ALS) - Kelso State Certifications, Accreditations, and Licenses

Agency	Web Site	Number
Alaska DEC UST	http://dec.alaska.gov/applications/eh/ehllabreports/USTLabs.aspx	UST-040
Arizona DHS	http://www.azdhs.gov/lab/license/env.htm	AZ0339
Arkansas - DEQ	http://www.adeq.state.ar.us/techsvs/labcert.htm	88-0637
California DHS (ELAP)	http://www.cdph.ca.gov/certlic/labs/Pages/ELAP.aspx	2795
DOD ELAP	http://www.denix.osd.mil/edqw/Accreditation/AccreditedLabs.cfm	L14-51
Florida DOH	http://www.doh.state.fl.us/lab/EnvLabCert/WaterCert.htm	E87412
Hawaii DOH	Not available	-
ISO 17025	http://www.pjlabs.com/	L16-57
Louisiana DEQ	http://www.deq.louisiana.gov/portal/DIVISIONS/PublicParticipationandPer mitSupport/LouisianaLaboratoryAccreditationProgram.aspx	03016
Maine DHS	Not available	WA01276
Minnesota DOH	http://www.health.state.mn.us/accreditation	053-999-457
Montana DPHHS	http://www.dphhs.mt.gov/publichealth/	CERT0047
Nevada DEP	http://ndep.nv.gov/bsdw/labservice.htm	WA01276
New Jersey DEP	http://www.nj.gov/dep/oqa/	WA005
North Carolina DWQ	http://www.dwqlab.org/	605
Oklahoma DEQ	http://www.deq.state.ok.us/CSDnew/labcert.htm	9801
Oregon – DEQ (NELAP)	http://public.health.oregon.gov/LaboratoryServices/EnvironmentalLaborator yAccreditation/Pages/index.aspx	WA100010
South Carolina DHEC	http://www.scdhec.gov/environment/envserv/	61002
Texas CEQ	http://www.tceq.texas.gov/field/qa/env_lab_accreditation.html	T104704427
Washington DOE	http://www.ecy.wa.gov/programs/eap/labs/lab-accreditation.html	C544
Wyoming (EPA Region 8)	http://www.epa.gov/region8/water/dwhome/wyomingdi.html	-
Kelso Laboratory Website	www.alsglobal.com	NA

Analyses were performed according to our laboratory's NELAP-approved quality assurance program. A complete listing of specific NELAP-certified analytes, can be found in the certification section at www.ALSGlobal.com or at the accreditation bodies web site.

Please refer to the certification and/or accreditation body's web site if samples are submitted for compliance purposes. The states highlighted above, require the analysis be listed on the state certification if used for compliance purposes and if the method/anlayte is offered by that state.



### Chain of Custody

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

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### SGS North America Inc. CHAIN OF CUSTODY RECORD



Alaska	Maryland
New Jersey	New York
North Carolina	Indiana

West Virgina

www.us.sgs.com

Kentucky

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7/25/16

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### General Chemistry

ALS Environmental—Kelso Laboratory 1317 South 13th Avenue, Kelso, WA 98626 Phone (360)577-7222 Fax (360)636-1068 www.alsglobal.com

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### ALS Group USA, Corp. dba ALS Environmental

Confidential LNG Facilities Groundwater Quality Sampling and Testing Report - Event 2 USAL-FG-GRZZZ-00-002016-004 Rev. 0 16-Dec-16

	Analytica	al Report 16-De	ec-1
Client:	SGS Environmental Services, Inc.	Service Request: K16113	65
Project:	1165638	Date Collected: 09/21/16	5
Sample Matrix:	Water	Date Received: 09/23/16	5
Analysis Method:	SM 10200 H	Units: mg/m3	
<b>Prep Method:</b>	Method	Basis: NA	
	Chloro	phyll A	

Sample Name	Lab Code	Result	MRL	MDL	Dil.	Date Analyzed	Date Extracted	Q	
APT-2-0916	K1611365-001	ND U	1.6	0.7	1	09/29/16 16:52	9/29/16		
MW-138B-0916	K1611365-002	ND U	1.7	0.7	1	09/29/16 16:52	9/29/16		
Method Blank	K1611365-MB	ND U	0.80	0.30	1	09/29/16 16:52	9/29/16		
			ALS dba	Group USA ALS Environ QA/QC Repo	<b>A, Corp.</b> mental	LNG Fa Sampling a USAL-FG-GR	cilities Ground nd Testing Re ZZZ-00-0020	Confidentia dwater Quality port - Event 2 16-004 Rev. ( 16-Dec-16	II 2 2 3
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Client:	SGS Enviro	nmental Services,	Inc.			Service F	Request:	K161136	5
Project:	1165638					Date Ana	alyzed:	09/29/16	
Sample Matrix:	Water					Date Ext	racted:	NA	
		Dup	licate Lab General (	Control Sa Chemistry l	ample Summary Parameters				
Analysis Method:	SM 10200 I	ł				Units:		mg/m3	
Prep Method:	None					Basis:		NA	
						Analysis	Lot:	516618	
	Lab Control Sample K1611365-LCS			Duplicate Lab Control Sample K1611365-DLCS					
Analyte Name	Result	Spike Amount	% Rec	Result	Spike Amoun	t % Rec	% Rec Limits	RPD	RPD Limit
Chlorophyll A	2110	2060	103	2060	2060	100	88-113	3	20



## Laboratory Report of Analysis

To: SLR Alaska-Anchorage 2700 Gambell St Suite 200 Anchorage, AK 99503 (907)222-1112

Report Number: 1165651

Client Project: Kenai Wells Event 2

Dear Jason Gray,

Enclosed are the results of the analytical services performed under the referenced project for the received samples and associated QC as applicable. The samples are certified to meet the requirements of the National Environmental Laboratory Accreditation Conference Standards. Copies of this report and supporting data will be retained in our files for a period of ten years in the event they are required for future reference. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. Any samples submitted to our laboratory will be retained for a maximum of fourteen (14) days from the date of this report unless other archiving requirements were included in the quote.

If there are any questions about the report or services performed during this project, please call Justin at (907) 562-2343. We will be happy to answer any questions or concerns which you may have.

Thank you for using SGS North America Inc. for your analytical services. We look forward to working with you again on any additional analytical needs.

Sincerely, SGS North America Inc	SGS North America Inc. Environmental Services – Alaska Division Project Manager	Justin Nelson 2016.10.15 11:02:54 -08'00'
Justin Nelson	Date	
Project Manager		
Justin.Nelson@sgs.com		
Print Date: 10/15/2016 10:42:4	7AM	

Int Date. 10/15/2010 10.42.4/ Alvi

SGS North America Inc.



Case Narrative

SGS Client: SLR Alaska-Anchorage SGS Project: 1165651 Project Name/Site: Kenai Wells Event 2 Project Contact: Jason Gray

Refer to sample receipt form for information on sample condition.

## APT-2-0916 (1165651001) PS

4500NO3-F - Nitrate/Nitrite - Closing CCV was not analyzed, sample was reanalyzed outside of hold time with QC within criteria and results confirmed in batch 2507.

8270D SIM - Pesticide LCS/LCSD recovery for endosulfan I (50.2%, 56.2%) does not meet QC criteria. Sample was re-extracted outside of hold time with the LCS/LCSD within QC criteria. Sample results are comparable.

## MW-138B-0916 (1165651002) PS

4500NO3-F - Nitrate/Nitrite - Closing CCV was not analyzed, sample was reanalyzed outside of hold time with QC within criteria and results confirmed.

8270D SIM - Pesticide LCS/LCSD recovery for endosulfan I (50.2%, 56.2%) does not meet QC criteria. Sample was re-extracted outside of hold time with the LCS/LCSD within QC criteria. Sample results are comparable.

## LCS for HBN 1744043 [XXX/36385 (1354416) LCS

8270D SIM - Pesticide LCS recovery for endosulfan I (50.2%) does not meet QC criteria.

## LCSD for HBN 1744043 [XXX/3638 (1354417) LCSD

8270D SIM - Pesticide LCSD recovery for endosulfan I (56.2%) does not meet QC criteria.

#### 1165622001(1355996MS) (1355997) MS

200.8LL - Metals MS recoveries for aluminum (419%), calcium (68.1%), and zinc (49.3%) do not meet QC criteria. The sample concentration is 4 times greater than the spike level.

#### 1165622010(1356000MS) (1356001) MS

200.8LL - Metals MS recovery for calcium (57.2%) does not meet QC criteria. The sample concentration is 4 times greater than the spike level.

200.8LL - Metals MS recovery for aluminum (136%) does not meet QC criteria. Post digestion spike was successful.

#### 1165622001MSD (1354483) MSD

8270D SIM - Pesticide surrogate recovery for 2-fluorobiphenyl (51.7%) does not meet QC criteria. 8270D SIM - Pesticide MS recovery for endosulfan I (56.8%) does not meet QC criteria. Refer to the LCS for accuracy requirements.

#### 1165622001(1355996MSD) (1355998) MSD

200.8LL - Metals MSD recoveries for aluminum (316%), calcium (39.5%), and zinc (48.1%) do not meet QC criteria. The sample concentration is 4 times greater than the spike level.

*QC comments may be associated with the field samples found in this report. When applicable, comments will be applied to associated field samples.

Print Date: 10/15/2016 10:42:48AM

SGS North America Inc.

200 West Potter Drive, Anchorage, AK 99518 t 907.562.2343 f 907.561.5301 www.us.sgs.com

Member of SGS Group



Report of Manual Integrations					
Laboratory ID	Client Sample ID	Analytical Batch	Analyte	Reason	
EPA 300.0					
1165651002	MW-138B-0916	WIC5570	Chloride	PNF	
1357605	MB for HBN 1745088 [WXX/11648]	WIC5570	Fluoride	PNF	
1357656	ICB for HBN 1745098 (WIC/5570)	WIC5570	Fluoride	PNF	
1357661	CCV for HBN 1745098 (WIC/5570)	WIC5570	Chloride	PNF	
1357662	CB for HBN 1745098 (WIC/5570)	WIC5570	Chloride	PNF	

Manual Integration Reason Code Descriptions

## Code Description

- O Original Chromatogram
- M Modified Chromatogram
- SS Skimmed surrogate
- BLG Closed baseline gap
- RP Reassign peak name
- PIR Pattern integration required
- IT Included tail
- SP Split peak
- RSP Removed split peak
- FPS Forced peak start/stop
- BLC Baseline correction
- PNF Peak not found by software

All DRO/RRO analysis are integrated per SOP.

Print Date: 10/15/2016 10:42:50AM

SGS North America Inc.



# Laboratory Qualifiers

Enclosed are the analytical results associated with the above work order. All results are intended to be used in their entirety and SGS is not responsible for use of less than the complete report. This document is issued by the Company under its General Conditions of Service accessible at <<u>http://www.sgs.com/en/Terms-and-Conditions.aspx></u>. Attention is drawn to the limitation of liability, indenmification and jurisdiction issues defined therein.

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SGS maintains a formal Quality Assurance/Quality Control (QA/QC) program. A copy of our Quality Assurance Plan (QAP), which outlines this program, is available at your request. The laboratory certification numbers are AK00971 (DW Chemistry & Microbiology) & UST-005 (CS) for ADEC and 2944.01 for DOD ELAP/ISO17025 (RCRA methods: 1020B, 1311, 3010A, 3050B, 3520C, 3550C, 5030B, 5035A, 6020A, 7470A, 7471B, 8021B, 8082A, 8260B, 8270D, 8270D-SIM, 9040C, 9045D, 9056A, 9060A, AK101 and AK102/103). Except as specifically noted, all statements and data in this report are in conformance to the provisions set forth by the SGS QAP and, when applicable, other regulatory authorities.

The following descriptors or qualifiers may be found in your report:

*	The analyte has exceeded allowable regulatory or control limits.
!	Surrogate out of control limits.
В	Indicates the analyte is found in a blank associated with the sample.
CCV/CVA/CVB	Continuing Calibration Verification
CCCV/CVC/CVCA/CVCB	Closing Continuing Calibration Verification
CL	Control Limit
D	The analyte concentration is the result of a dilution.
DF	Dilution Factor
DL	Detection Limit (i.e., maximum method detection limit)
E	The analyte result is above the calibrated range.
F	Indicates value that is greater than or equal to the DL
GT	Greater Than
IB	Instrument Blank
ICV	Initial Calibration Verification
J	The quantitation is an estimation.
JL	The analyte was positively identified, but the quantitation is a low estimation.
LCS(D)	Laboratory Control Spike (Duplicate)
LOD	Limit of Detection (i.e., 1/2 of the LOQ)
LOQ	Limit of Quantitation (i.e., reporting or practical quantitation limit)
LT	Less Than
Μ	A matrix effect was present.
MB	Method Blank
MS(D)	Matrix Spike (Duplicate)
ND	Indicates the analyte is not detected.
Q	QC parameter out of acceptance range.
R	Rejected
RPD	Relative Percent Difference
U	Indicates the analyte was analyzed for but not detected.
Sample summaries which i All DRO/RRO analyses are	nclude a result for "Total Solids" have already been adjusted for moisture content.

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Note:

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Sample Summary						
Client Sample ID	Lab Sample ID	Collected	Received	Matrix		
APT-2-0916	1165651001	09/21/2016	09/22/2016	Water (Surface, Eff., Ground)		
MW-138B-0916	1165651002	09/21/2016	09/22/2016	Water (Surface, Eff., Ground)		
Trip Blank	1165651003	09/21/2016	09/22/2016	Water (Surface, Eff., Ground)		
APT-2-0916	1165651004	09/21/2016	09/22/2016	Water (Surface, Eff., Ground)		
MW-138B-0916	1165651005	09/21/2016	09/22/2016	Water (Surface, Eff., Ground)		
Method	Method Description					
SM21 2320B	Alkalinity as CaCO3 QC					
SM21 4500-NH3 G	Ammonia-N (W) SM21 4500-NH3 G					
EPA 410.4	Chemical Ox	ygen Demand				
SM21 2340B	Dissolved Hardness as CaCO3 ICP-MS-LowLv					
SM 5310B	Dissolved Organic Carbon					
AK102	DRO/RRO Low Volume Water					
AK103	DRO/RRO Low Volume Water					
SM21 4500NO3-F	Flow Injection Analysis					
AK101	Gasoline Range Organics (W)					
EPA 300.0	Ion Chromatographic Analysis (W)					
200.8 Low Level	Metals in Water by 200.8 ICP-MS LL					
200.8 Low Level	Metals in Water by 200.8 ICP-MS LL DIS					
SM21 4500P-B,E	Ortho Phosphorus SM4500P B,E (W)					
8270D SIM (PEST)	Pesticides 8270D SIM GC/MS					
SM21 4500-H B	pH Analysis					
SW8082A	SW8082 PCB's					
SM21 4500-N D	TKN by Phenate (W)					
SM21 2540C	Total Dissolved Solids SM18 2540C					
SM 5310B	Total Organic Carbon					
SM21 4500P-B,E	Total Phosphorus (W)					
SM21 2540B	Total Residue					
SM21 2540D	Total Suspended Solids SM20 2540D					
SM21 2130B	Turbidity Analysis					

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