|            | DOCKET NO. CP17000    | Doc No: USAKE-PT-SRREG-00- |
|------------|-----------------------|----------------------------|
|            | RESOURCE REPORT NO. 2 | 000006-000                 |
| Alaska LNG | Appendix G            | April 14, 2017             |
| PROJECT    | Part 8 of 19          | REVISION: 0                |
|            | Public                |                            |

Part 8 of 19 of Appendix G of Resource Report No. 2

| SOIL              |                                       |                 | DateF                                  |                  | 00-12-            | 200 - W  |  | Soil Pit Required (Y/N)   |  |
|-------------------|---------------------------------------|-----------------|--|------------------|-------------------|--|--|---|--|
| SOIL PROF         | LE DESCRIPTION:                       | (Describe       | to the depth neede                     | d to docur       | nent the          | indicator or o   | confirm the abser  | nce of indicators.)   |  |
| Depth             | Matrix                                |                 | Redox Features                         | X.e              |                   |  |  | i.f   |  |
| (inches)          | Color (moist)                         | %               | Color (moist)                          | %                | Type <sup>1</sup> | Loc <sup>2</sup>   | Texture  | Notes   |  |
| 0-2               |                                       |                 |  |                  |                   |  | -  |   |  |
| 2.4               | 2.5+513                               | ०००             |  |                  |                   |  | SaL  |   |  |
| 4-11              | 515/1                                 | 100             |  |                  |                   |  | Sanz   | Parent material color   |  |
| 1-17              | 5+512                                 | 96              | N410                                   | 2                | D                 | PC   | Sanz   | benses of SIL W/redox   |  |
| 1 234             |                                       |                 | 7.54/6                                 | 2                | <u> </u>          | PL   |  | features associated   |  |
| 724               | 515/2                                 | 180             |  | _                |                   |  | Sand   |   |  |
| 1Type: C=C        | oncentration, D=Depl                  | etion RM        | I=Reduced Matrix (                     | CS=Cover         | ed or Co          | ated Sand G  | Grains <sup>2</sup> Locatio  | n: PL=Pore Lining, M=Matrix.  |  |
|                   | IL INDICATORS                         | etion, rav      | -reduced Matrix,                       | 30-00vci         | Cu or Co          | alca bana c  |  | S FOR PROBLEMATIC HYDRIC SOILS  |  |
| MATERIAL STATES   | listel (A1) N                         |                 | Alaska Gleye                           | d (A13)          | A)                |  |  | Change (TA4) <sup>4</sup> \(\sum_{\text{\tint{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tint{\text{\tint{\text{\tint{\tint{\tint{\tint{\tinite\text{\text{\text{\tinit}\text{\tinite\text{\text{\text{\text{\tinit}\\ \text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\tinithter{\tinithter{\text{\texi}\text{\texi{\texi{\texi{\texi{\tex{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi\tinitte\tint{\ti}\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\t |  |
|                   | don (A2)                              |                 | Alaska Redox                           |                  |                   |  |  | e Swales (TA5)  |  |
|                   | (A3)\                                 |                 | Alaska Gleye                           |                  |                   | 1  |  | x with 2.5Y Hue   |  |
|                   |                                       |                 | . sacra croyer                         | . 5.55 (/        | ·-/               | <del></del>  |  | ed without 5Y Hue or Redder Underlying  |  |
|                   | ulfide (A4) _ N                       |                 |  |                  |                   |  | Layer_ N   |   |  |
|                   | urface (A12) N                        |                 |  | of wat =         | d bud!            | oau oad :  | Other (Explai  |   |  |
|                   | or of nyaropnytic veg<br>problematic. | etation, o      | ne primary indicator                   | or wettan        | a nyarok          | ogy, and an a  | appropriate iands  | cape position must be present unless  |  |
| Give details      | of color change in N                  | otes.           |  |                  |                   |  |  |   |  |
| Restrictive L     | ayer (if present): Typ                | e:\A            |  | Depth (inc       | :hes):            | NA   |  |   |  |
|                   |                                       |                 |  | -                |                   |  |  |   |  |
| Hydric Soil       | Present (Y/N):                        | N               |  |                  |                   |  |  |   |  |
| Notes:            |                                       |                 |  |                  |                   |  |  |   |  |
| 10.00             |                                       |                 |  |                  |                   |  |  |   |  |
|                   |                                       |                 |  |                  | ( 0.1             |  |  |   |  |
|                   |                                       |                 |  |                  |                   |  |  |   |  |
| HYDROLOG          | Y PRIMARY INDICA                      | TORS (a         | ny one indicator is                    | sufficient)      | HE                | SECONDAR   | YINDICATORS  | (2 or more required)  |  |
| Surface Wat       | er (A1)/                              | Sur             | face Soil Cracks (B                    | 6) \             |                   | Water-staine<br>Leaves (B9)  |  | Stunted or Stressed Plants (D1)   |  |
|                   | - 1 (10)                              | Inu             | ndation Visible on A                   | erial Imac       | ion/              |  |  |   |  |
| High Water        | Гable (A2)                            | - (B7           |  |                  |                   | Drainage Patterns (B10)  |  |   |  |
| Saturation (A     | (3) _ N                               |                 | arsely Vegetated<br>acave Surface (B8) |                  |                   | Oxidized Rhizospheres along Living Roots (C3)  |  | Shallow Aquitard (D3)   |  |
|                   |                                       |                 |  | ive Surface (B8) |                   | Presence of Reduced  |  | Microtopographic  |  |
| Water Marks       | (B1)                                  | Mai             | 1 Deposits (B15)                       | neite (R15) + 1  |                   |  | Neducea  | Relief (D4)   |  |
| Sediment De       | eposits (B2) N                        |                 | lrogen Sulfide                         |                  |                   | Salt Deposits  | s (C5)   | FAC-Neutral Test (D5)N  |  |
|                   | , poetto (22) <u>73</u>               |                 | or (C1)/                               |                  |                   |  |  |   |  |
| Drift Deposit     | s (B3)/                               | Dry             | -Season<br>ter Table (C2)              | Ī                |                   | Notes:   | 041  |   |  |
| A11 N4-4          | Count (DA)                            |                 |  | -\-              |                   | 1  |  |   |  |
| Algal Mat or      | Crust (B4)N                           | _   0111        | er (Explain in Notes                   | s):<br>          |                   |  |  |   |  |
| Iron Deposits     | s (B5)/                               |                 |  |                  |                   |  |  |   |  |
| S. A. D. T. C. S. | Charles Ave Barre                     | 100 Y 22 10 1 1 | <b>7.055以前"空影子</b>                     |                  | No.               | A STATE OF THE STA | THE THE PARTY OF T |   |  |
| Surface Wat       | er Present (Y/N): N                   | ) "             | Depth (in): NA                         |                  |                   |  |  |   |  |
| Water Table       | Present (Y/N):                        |                 | Depth (in):                            | 2                | We                | etland Hydro   | ology Present (Y   | /N):N   |  |
|                   | resent (Y/N):<br>billary fringe)      |                 | Depth (in):                            |                  | EC                | :_ NA  |  |   |  |
| Notes:            | January Hillige)                      |                 | 7/ 1/2                                 |                  |                   |  |  |   |  |
| .51001            |                                       |                 |  | **               |                   |  |  |   |  |
|                   |                                       |                 |  |                  |                   |  |  |   |  |
|                   |                                       |                 |  |                  |                   |  |  |   |  |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot,  | M= Matrix  |
|--|--|
| Forested-Evergreen-Needle-leaved   | acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-   |
| Percent Cover (P): Tree (>5 dbh, >6m tall)<br>Dwarf shrub (<0.5m) Tall herb (≥   | Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Moss-Lichen Floating Submerged   |
| Number of Wetland Types (M):   | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even  |
| Vegetation Density/Dominance (P): Sparse<br>80%) Very High Density (80-100%  | e (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-   |
| Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scatter   | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant  | species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none)   | One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): Open Small Scattered Patches   | No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover   |
| Dead Woody Material (P): Low Abundance<br>Abundant (>50% of surface)   | (0-25% of surface) Moderately Abundant (25-50% of surface)   |
| Vegetative Interspersion (P): Low (larger High (small groupings, diverse and interspersion)  |  |
| HGM Class (P): Slope Flat  | Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
|  |  |
| SOIL VARIABLES   |  |
|  | Histosol: Fibric Histosol: Hemic Histosol: Sapric  Mineral: Silty Mineral: Clayey  |
|  |  |
| HYDROLOGIC VARIABLES   | LONG TO THE REPORT OF THE PROPERTY OF THE PROP |
| Inlet/Outlet Class (P): No Inlet/Outlet  | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No It Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Inlet/P   |
| Inlet/Outlet Class (P): No Inlet/Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial  | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outle  |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet   | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outle  |
| Inlet/Outlet Class (P): No Inlet/Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial  Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed,  Evidence of Sedimentation (P): No Evider Created   | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial In   |
| Inlet/Outlet Class (P): No Inlet/Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial  Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed,  Evidence of Sedimentation (P): No Evider Created   | troutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No OutletPerennial Inlet/No OutletPerennial Inlet/No OutletPerennial Inlet/No OutletPerennial Inlet/No OutletPerennial Inlet/No Outlet_Perennial Inlet/No                        |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial  Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent  | toutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No OutletPerennial Inlet/No Outlet_Perennial In                                       |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial  Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Return Interval >5 yrs_Degree of Outlet Restriction (P): No Outfloow Water pH (P): No surface water_Outletent Interval Outletent Interval Ou | toutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/  |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial  Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflood Water pH (P): No surface water Comparison of Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  | toutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/No OutletPerennial Inlet/Perennial Inlet/No OutletPerennial Inlet/No Outle  |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial  Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflood Water pH (P): No surface water Comparison of Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet _   |
| Inlet/Outlet Class (P): No Inlet/Outlet_OutletIntermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial  Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Creater Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Creater Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low   | Intermittent Inlet/Perennial Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial  Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrelief of Wetland Surface (P): Absen  Frequency of Overbank Flooding (P): No Creater Interval >5 yrs  Degree of Outlet Restriction (P): No Outflot  Water pH (P): No surface water Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolate   | Intermittent Inlet/Perennial Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial  Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrelief of Wetland Surface (P): Absen  Frequency of Overbank Flooding (P): No Creater Interval >5 yrs  Degree of Outlet Restriction (P): No Outflot  Water pH (P): No surface water Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolate   | Intermittent Inter |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Outflood Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflood Water pH (P): No surface water Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See  LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolat Only Connected Above Connected  | Intermittent Inter |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial  Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrelief of Wetland Surface (P): Absen Frequency of Overbank Flooding (P): No Creater Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflot  Water pH (P): No surface water Creater Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Sea  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolat Only Connected Above Connected Wetland Land Use: High Intensity (i.e., Watershed Land Use: 0-5% Rural  | th Outlet  |

### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Feature ID: W84 CHOOF | Field Target: 15143 | Date: 7/20/15 |
|-----------------------|---------------------|---------------|
|                       |                     | 60            |

For all items not checked, please provide detailed explanation in the notes section of data form.

### 1. Site Description

- Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included in logbook?

### 2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- Vegetation names are entered legibly for all strata present?
- ☑ Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- Indicator status is correct for each species?
- Dominance Test and Prevalence Index have been completed?

#### 3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

### 4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

#### 5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

### 6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- Each logbook page is initialed and dated?

### 7. Maps

- Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

| X Jennifer                | Anderson | X Jelen          | Re | 7/20 | 115 |
|---------------------------|----------|------------------|----|------|-----|
| Wetland Scientist (print) |          | Signature / Date |    |      |     |

Field Crew Chief (print)

X S Tree 7/20/15

Signature / Date

| SITE DESCRIPTION   | THE RESERVE OF THE PARTY OF  | Service of    | V. P. SHOW THE         | Visit Advisor  | Sin Charles                  |                           |
|--|--|---------------|------------------------|----------------|------------------------------|---------------------------|
| Survey Type: Centerline X Acces                              | ss Road (explain)  | Other (expl   | ain)                   | Fleid Targ     | et: <u>15142</u>             | Map #:(11 Map Date6/18/15 |
| Date: 7/20/15  | Project Name & No.:  | Alaska LNG    | 60418403               |                | Feature Id:                  | W84CH008                  |
| Investigators: Bran Strong                                   | , Jennifer.  | Anderso       | ^                      |                |                              | Team No.: W84             |
| State: Alaska  | Region: Alaska   |               | Milepost: $\checkmark$ | 85.8           |                              |                           |
| Latitude: 64' 24'15.43                                       |  | Longitude     | : 149° 15              | 133.2          | 7                            | Datum: WGS84              |
| Logbook No.: 02  | Logbook Page No.:  |               | Picture No.:           |                |                              | N,S                       |
| SITE PARAMETERS  | <b>经验外部的现代</b>   | White State   |                        |                |                              |                           |
| Subregion: ) Le or   |  |               | Landform (hill         | slope, terrac  | e, hummocks                  | s, etc.): Terrace         |
| Slope (%):   |  |               | Local relief (co       | oncave, con    | vex, none): F                | Tat Hommodig-small        |
| Pre-mapped Alaska LNG/NWI classifica                         | ation: U; 1AZ  |               | Evidence of W          |                |                              |                           |
| Are climatic/hydrologic conditions on the Yes No (if no expl | e site typical for this time<br>ain in Notes) \( \sum_{\cur_{\sum_{\sum_{\sum_{\sum_{\sum_{\sum_{\sum_{\sum_{\sum_{\sum_\sum_{\sum_{\sum_{\sum_{\sum_{\sum_{\sum_\\sum_\\sum_\sum_\\sum_\sum_\\sum_\sum_ | of year?      |                        |                | stances" pre:<br>(If no, exp | sent:<br>plain in Notes.) |
| Are Vegetation, Soil, or Hyd                                 | drologySignificant   | ly Disturbed? | No 🗸                   | _(If yes, exp  | lain in Notes)               |                           |
| Are Vegetation, Soil, or Hyd                                 | drology Naturally F  | roblematic?   | No×                    | _(If yes, exp  | lain in Notes                | .)                        |
| SUMMARY OF FINDINGS  |  |               |                        | STANDA         |                              | <b>经验证的企业</b>             |
| Hydrophytic Vegetation Present? Yes_                         | No   | ls            | the Sampled A          | rea within a   | Wetland?                     | Yes NoX                   |
| Hydric Soil Present? Yes_                                    | No   | _ w           | etland Type: (         | ٠.             |                              | 1                         |
| Wetland Hydrology Present? Yes                               | No 🗴   | AI            | aska Vegetation        | Classification | on (Viereck):                | 142                       |
| Notes and Site Sketch: Please include I                      |  |               |                        |                |                              |                           |
| corridor. Very large who                                     | to spruce in   | arca.         | A COSPIE               | ranko          | mong fl                      | relargest I have          |
| observed in the in   | terior. Partly   | clou 2-       | (65°F.                 | Rain           | over t                       | he past 2 dares.          |
| Dry terrace. Open c  | anopy of la  | rge, L        | real th-1              | PICCL          | A. Ver                       | r sparce understory       |
| with a carpet of   | Haloclonium  | splen 2.      | ens feat               | he no          | 55,                          |                           |
| * 1  |  |               | ,                      | 100            | 4009_0                       | P                         |
| = = = =  | 14.  | §5, 7         | 6                      | 1              | PEMILS!                      | 51.6                      |
|  |  |               | JU                     | 1/1            | ,                            | 115.7                     |
|  | /  |               | PFO4/SS                | 43             |                              |                           |
| U; l   |  | - /-          | 142,1102               | 5              | 7/                           | 1.                        |
| 4  | 185.8 DLHOO  | 6             | 110,110                |                | $\searrow$                   | w All                     |
|  | 1 (1) 2400   | 1/            |                        | - \            |                              | 9 WDE                     |
|  |  | 1/-           | /                      |                | PFOY<br>IAZ,                 |                           |
|  | /  | 1. 1.         | 1                      | 1              | 1116/                        | 106                       |
|  | / - (  |               |                        | 1              |                              |                           |
| 11   | 485.9  |               |                        | )              |                              |                           |



| Miles many supply companies.  | Absolute         | Dominant          | Indicator | Dominance Test worksh                               | eet:                   |                    |
|-------------------------------|------------------|-------------------|-----------|---|------------------------|--------------------|
| Tree Stratum (Plot sizes: 100 | % Cover          | Species?<br>(Y/N) | Status    | No. of Dominant Species to Total Number of Dominant |                        |                    |
| 1. Picea glavca               | 45%              | -1                | FACU      | % Dominant Species that                             |                        |                    |
| 2.                            |                  |                   |           | 70 Dominant opecies that                            | are OBL, I ACVV, OF 17 | 10. <u>201</u> (AL |
| 3.                            |                  |                   |           |   |                        |                    |
| 4.                            | 2 6              |                   |           | Prevalence Index worksl                             | heet:                  |                    |
| Total Cover                   | 4500             |                   |           | Total % Cover of:                                   | Multiply               | by:                |
| 50% of total cover            | : <u>22.5</u> 20 | % of total cov    | rer: 9    | OBL species:  | X1=                    |                    |
| Sapling/Shrub Stratum ( 2 6 ) | Absolute         | Dominant          | Indicator | FACW species:                                       | X 2 =                  | _                  |
|                               | % Cover          | Species?          | Status    | FAC species 22                                      |                        |                    |
|                               |                  | (Y/N)             |           | FACU species_(o\                                    | X4= <u>244</u>         | _                  |
| 1. Picca glaven               | 2%               | 4                 | FACU      | UPL species   |                        |                    |
| 2. Rosa acicularis            | 3/.              | Y                 | FACU      | Column Totals: <u>83</u>                            | (A) 310                | (B)                |
| 3. Linnaea horealis           | 17.              |                   | Facul     | PI = B/A = 3.73                                     |                        |                    |
| 4. V. burnum edule            | 1                |                   | Facu      |   |                        |                    |
| 5. Catanagrostis canadassis   |                  |                   |           |   |                        |                    |
| 6. Salix pseudomontierla      | T                |                   | Fac       |   |                        |                    |
| 7.                            | 3 3              |                   |           |   |                        |                    |
| 8.                            |                  |                   |           |   |                        |                    |
| 9.                            |                  |                   |           |   |                        |                    |
| Total Cover                   | : (0             |                   |           |   |                        |                    |

| VEGETATION (use scientific names of plants | )              |                |                |  |
|--|----------------|----------------|----------------|--|
| Herb Stratum ( 25 )                        | Absolute       | Dominant       | Indicator      | Hydrophytic Vegetation Indicators:   |
|  | % Cover        | Species?       | Status         | N Dominance Test is > 50%  |
| 1.0  |                | (Y/N)          |                | Prevalence Index is ≤3.0   |
| 1. Equisation praterse                     | 20%            | 7              | FAC            | Morphological Adaptations¹ (Provide supporting data in   |
| 2. Cornus canadensis                       | -11/-          | 1              | RACU           | Notes)   |
| 3. Perola minor                            | 17.            |                | Fac            | Problematic Hydrophytic Vegetation¹(Explain)   |
| 4. Geocaulan lividicum                     | 3%             |                | Facul          | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless  |
| 5. Chemerion ansustifolia                  | _              |                | Facu           | disturbed or problematic.  |
| 6. Fause turn arvense                      | 17.            |                | Fac            | Control of the Contro |
| 7. Calamagrostis canadensis                | T              |                | Fal.           | % Bare Ground  |
| 8. Elemus innovatus                        | T              |                |                | % Cover of Wetland Bryophytes  |
| 9.   | 1/             |                |                | Total Cover of Bryophytes  |
| 10, ~                                      |                |                |                | % Cover of Water   |
| 10. Orchid SC                              |                |                |                | Hydrophytic Vegetation Present (Y/N):  |
| Total Cover:                               | 32             |                | 45             | Notes: (If observed, list morphological adaptations below):  |
| 50% of total cover:                        | <u>  (e 20</u> | % of total cov | er: <u>6.4</u> |  |
|  |                |                | 43             | Feather Moss 87  |
|  |                |                |                | higher 3   |

| Donth   | Matrix   |                                 | Redox Features   |   |  |  | confirm the absen                                       |             |   |               |
|---|--|---------------------------------|--|---|--|--|---|-------------|---|---------------|
| Depth<br>(inches)   | Color (moist)  | 1%                              | Color (moist)  | %   | Type <sup>1</sup>  | Loc <sup>2</sup>   | Texture   | Not         | tes   |               |
| 5-4   | Ocioi (moist)  | 170                             | Color (molet)  | - 1 / 1   | 1,700  | 1200   | Toxidio   | - 1100      |   |               |
| 1-5   | 547/1  | 100                             |  |   |  |  | v + Sal   |             |   |               |
| -12   | 2.5-14/3   | 100                             |  |   |  |  | VFSac   |             |   |               |
| 2 600   | 12.34 16.2   | 180                             |  |   |  |  |   |             |   |               |
| 2-22  | 576/1  | 00                              |  |   |  |  | Sand  | Pa          | irent material  | CDLO          |
|   |  |                                 |  |   |  |  |   |             | ariasated Sav   |               |
| 1   |  |                                 |  |   |  | 1 10 16  | 21 11   |             |   |               |
|   | Concentration, D=Depl  | letion, RN                      | 1=Reduced Matri  | x, CS=Cove  | red or Co  | ated Sand C  |   |             | Pore Lining, M=Matrix.  PROBLEMATIC HYDR  | C SOII        |
| TO A SECURIOR DE LA CO  | DIL INDICATORS   | 2 56 15 /                       | Alaska Cla   | d (A12)   | CONTRACTOR OF THE PERSON OF TH | MERCES OF  | THE PERSONAL PROPERTY.                                  | CAMP STREET | THE RESERVE OF THE PARTY OF THE PARTY OF  | C SOIL        |
|   | Histel (A1) N  | -                               |  | yed (A13) _   |  |  | Alaska Color  |             |   |               |
|   | don (A2)   |                                 |  |   |  | 1  | Alaska Alpine   |             |   | -             |
|   | (A3) N   |                                 | Alaska Gle   | yed Pores (A  | 415)   | <u></u>  | Alaska Redox  |             | ut 5Y Hue   | derlyin       |
| Hydrogen S  | ulfide (A4)\   |                                 |  |   |  |  | Layer_ N  | u withot    | ut 31 Tide of Nedder Of   | lucityiii     |
|   | Surface (A12) N  |                                 |  |   |  |  | Other (Explain  |             | tes)<br>sition must be present  |               |
| disturbed or  | problematic.<br>s of color change in N   |                                 |  |   | •  |  | *   | 27 (2)      |   |               |
| Olve detail.  |  |                                 |  | Daniel Co.  | obool:   | . 1. 4   |   |             |   |               |
| Restrictive I   | _ayer (if present): Type   | 1                               |  | _ Depth (in   | cries)/  | J 42   |   |             |   |               |
| Restrictive I  Hydric Soil  Notes:  | _ayer (if present): Type   | 7                               | •>   |   |  |  | RY INDICATORS (   | 2 or mo     | ore required)   |               |
| Restrictive I Hydric Soil Notes: HYDROLO  | _ayer (if present): Typ  | ATORS (a                        | •>   | is sufficient)  |  |  | ed  | 2 or ma     | ore required) Stunted or Stressed Plants (D1)   |               |
| Restrictive I  Hydric Soil  Notes:  HYDROLO  Surface Wa   | Present (Y/N):   | ATORS (a                        | any one indicator<br>rface Soil Cracks<br>ndation Visible o  | is sufficient)<br>(B6) _ 시  |  | SECONDAR<br>Water-staine<br>Leaves (B9)  | ed  |             | Stunted or Stressed   | (D2) <u>k</u> |
| Restrictive I  Hydric Soil  Notes:  HYDROLO  Surface Wa  High Water   | Present (Y/N): GY PRIMARY INDICA   | Su Inu (B)                      | any one indicator<br>rface Soil Cracks<br>ndation Visible o  | is sufficient)<br>(B6) <u>人</u><br>n Aerial Ima                                   | gery [   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Orainage Pa   | tterns (B10) N  |             | Stunted or Stressed Plants (D1)   |               |
| Restrictive I Hydric Soil Notes: HYDROLO Surface Wa High Water Saturation (   | Present (Y/N):  GY PRIMARY INDICA  ter (A1)  | Su Inu (Bi                      | any one indicator rface Soil Cracks Indation Visible o   | is sufficient) (B6) \( \lambda \) n Aerial Imag                                   | gery [   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rh  | tterns (B10) N<br>izospheres along<br>(C3) Reduced      |             | Stunted or Stressed<br>Plants (D1)<br>Geomorphic Position   |               |
| Restrictive I Hydric Soil Notes: HYDROLO Surface Wa High Water Saturation ( Water Mark  | A3) ム」   | Su Inu (B) Sp Co                | any one indicator rface Soil Cracks Indation Visible of Alarsely Vegetated Incave Surface (E   | is sufficient) (B6) \( \lambda \) n Aerial Imag                                   | gery [   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rh<br>Living Roots<br>Presence of<br>ron (C4)               | tterns (B10) N<br>izospheres along<br>(C3) Reduced      |             | Stunted or Stressed Plants (D1) Geomorphic Position Shallow Aquitard (D3)                               | _\/           |
| Restrictive I Hydric Soil Notes: HYDROLO Surface Wa High Water Saturation ( Water Mark Sediment D                                       | A3) ム」 s (B1) 시  | Su Inu (B) Sp Co Ma             | any one indicator rface Soil Cracks indation Visible o r/)   | is sufficient) (B6) \( \sum_{\lambda} \) n Aerial Image (B8) \( \sum_{\lambda} \) | gery [   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rh<br>Living Roots<br>Presence of<br>ron (C4)               | tterns (B10) N<br>izospheres along<br>(C3) Reduced      |             | Stunted or Stressed Plants (D1)  Geomorphic Position Shallow Aquitard (D3) Microtopographic Relief (D4) | _\/           |
| Restrictive I Hydric Soil Notes: HYDROLO Surface Wa High Water Saturation ( Water Mark Sediment D Drift Deposi                          | Table (A2) A3) A  s (B1)   | Su Inu (B) Sp Co Ma Hy Od Dn Wa | any one indicator rface Soil Cracks Indation Visible of real Vegetated Incave Surface (B Incompared to the control of the cont | is sufficient) (B6) \( \text{\lambda} \) n Aerial Image (B8) \( \text{\lambda} \) | gery [   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rh<br>Living Roots<br>Presence of<br>ron (C4)               | tterns (B10) N<br>izospheres along<br>(C3) Reduced      |             | Stunted or Stressed Plants (D1)  Geomorphic Position Shallow Aquitard (D3) Microtopographic Relief (D4) | _\/           |
| Restrictive I Hydric Soil Notes: HYDROLO Surface Wa High Water Saturation ( Water Mark Sediment D Drift Deposi                          | A3) S (B1) eposits (B2)  | Su Inu (B) Sp Co Ma Hy Od Dn Wa | any one indicator rface Soil Cracks Indation Visible of real Surface (B In Deposits (B15) Indrogen Sulfide I | is sufficient) (B6) \( \text{\lambda} \) n Aerial Image (B8) \( \text{\lambda} \) | gery [   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rh<br>Living Roots<br>Presence of<br>ron (C4)               | tterns (B10) N<br>izospheres along<br>(C3) Reduced      |             | Stunted or Stressed Plants (D1)  Geomorphic Position Shallow Aquitard (D3) Microtopographic Relief (D4) | _\/           |
| Restrictive I Hydric Soil Notes: HYDROLO Surface Wa High Water Saturation ( Water Mark Sediment D Drift Deposi Algal Mat or             | A3) A Seposits (B2) A Seposits (B3) A Seposits (B4) A Seposits (B5) A Seposits | Su Inu (Bi Sp Co Ma Dn Wa Ott   | any one indicator rface Soil Cracks Indation Visible of reasely Vegetated Incave Surface (B In Deposits (B15) Indrogen Sulfide Indrogen Sulfid | is sufficient) (B6)   | gery [   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rh<br>Living Roots<br>Presence of<br>ron (C4)               | tterns (B10) N<br>izospheres along<br>(C3) Reduced      |             | Stunted or Stressed Plants (D1)  Geomorphic Position Shallow Aquitard (D3) Microtopographic Relief (D4) | _\/           |
| Restrictive I Hydric Soil Notes: HYDROLO Surface Wa High Water Saturation ( Water Mark Sediment D Drift Deposi Algal Mat or             | A3) S (B1)  r Crust (B4)   | Su Inu (Bi Sp Co Ma Dn Wa Ott   | any one indicator rface Soil Cracks Indation Visible of real Surface (B In Deposits (B15) Indrogen Sulfide I | is sufficient) (B6)   | gery [   | Nater-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rh<br>Living Roots<br>Presence of<br>ron (C4)<br>Salt Deposit<br>Notes: | tterns (B10) N<br>izospheres along<br>(C3) N<br>Reduced |             | Stunted or Stressed Plants (D1)  Geomorphic Position Shallow Aquitard (D3) Microtopographic Relief (D4) | _\/           |
| Restrictive I Hydric Soil Notes: HYDROLO Surface Wa High Water Saturation ( Water Mark Sediment D Drift Deposi Algal Mat or Iron Deposi | A3) A Seposits (B2) A Seposits (B3) A Seposits (B4) A Seposits (B5) A Seposits | Su Inu (Bi Sp Co Ma Dn Wa Ott   | any one indicator rface Soil Cracks Indation Visible of reasely Vegetated Incave Surface (B In Deposits (B15) Indrogen Sulfide Indrogen Sulfid | is sufficient) (B6)   | gery [   | Nater-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rh<br>Living Roots<br>Presence of<br>ron (C4)<br>Salt Deposit<br>Notes: | tterns (B10) N<br>izospheres along<br>(C3) Reduced      |             | Stunted or Stressed Plants (D1)  Geomorphic Position Shallow Aquitard (D3) Microtopographic Relief (D4) | _\/           |

### AQUATIC SITE ASSESSMENT DATA FORM

| Primary Vegetation Type (P):     Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed  |
|--|
| Percent Cover (P): Tree (>5 dbh, >6m tall)       Sapling (<5 dbh, <6m tall)       Tall shrub (2-6m)       Short shrub (0.5-2m)         Dwarf shrub (<0.5m)   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| Vegetation Density/Dominance (P): Sparse (0-20%)       Low Density (20-40%)       Medium Density (40-60%)       High Density (60-80%)  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="#">&lt;25% Scattered/Peripheral Cover</a> 26-75% Scattered or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover  |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface)<br>Abundant (>50% of surface)  |
| Vegetative Interspersion (P):       Low (large patches, concentric rings)       Moderate (broken irregular rings)         High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
|  |
| SOIL VARIABLES   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey   |
|  |
| HYDROLOGIC VARIABLES   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/Perenni  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded  |
| Inlet/Outlet Class (P): No Inlet/Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet_ Perennial Inlet/No Outlet_ Perennial Inlet/Intermittent Outlet_ Perennial Inlet/Perennial Outlet_ Perennial Inlet/No Outlet_ Perennial Inlet/Perennial Outlet_ Perennial Inlet/Perennial Inlet/Perennial Outlet_ Perennial Inlet/Perennial Inlet/No Outlet_ Perennial Inlet/Perennial Inlet/Peren   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermit |
| Inlet/Outlet Class (P): No Inlet/Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet  |

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### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature ID: W84LH008 Field Target: 15142 Date: 7/20/15

For all items not checked, please provide detailed explanation in the notes section of data form.

### 1. Site Description

- Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included in logbook?

### 2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- Vegetation names are entered legibly for all strata present?
- Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- Indicator status is correct for each species?
- Dominance Test and Prevalence Index have been completed?

### 3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

#### 4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

#### 5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

### 6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- Each logbook page is initialed and dated?

### 7. Maps

- Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

| X Junifer Anderson        | Xo On h          | 7/20/15 |
|---------------------------|------------------|---------|
| Wetland Scientist (print) | Signature / Date | 7       |

X Brun Stone X B M 7/20/15
Field Crew Chief (print) Signature / Date

| SITE DESCRIPTION   | · · · · · · · · · · · · · · · · · · ·                                 |                                     |  | Service Co.  |                              |  |
|--|---|-------------------------------------|--|--|------------------------------|--|
| Survey Type: Centerline Acces  | ss Road (explain)   | Other (expl                         | ain)                                     | Field Targ   | et: <u> 5141</u>             | Map #: [ <u>\(\) Map Date: \( \( \) (18 (15 \)</u>                                     |
| Date: 7/20/15  | Project Name & No.:   | Alaska LNG                          | 6 60418403                               | Alexander and                                      | Feature Id:                  | 284 CHO 09   |
| Investigators: Brian Stron   | g Jennifer  | Andrers                             | ~  | 11.  |                              | Team No.: W 84   |
| State: Alaska  | Region: Alaska  |                                     | Milepost: と                              | 185,8  |                              |  |
| Latitude: 64° 24' 14.16  |   | Longitude                           | : 149" 15'                               | 26,93  |                              | Datum: WGS84   |
| Logbook No.: 02  | Logbook Page No.:   | 52                                  | Picture No.:                             | W84-V  | E6-181                       | C-PIT_PLUG NS  |
| SITE PARAMETERS  |   |                                     | New York                                 |  | (A.S.). 对火烧器                 | 物质的基础。   |
| Subregion: Interior  |   |                                     | Landform (hill                           | lslope, terrac                                     | e, hummock                   | s, etc.): Terrace  |
| Slope (%): 1 % with swate  | ~ 3% across   |                                     | Local relief (c                          | oncave, con  | vex, none): $\leq$           | 15htly concave, Hummoch  |
| Pre-mapped Alaska LNG/NWI classifica   | tion:   |                                     | Evidence of V                            |  |                              | 12 ×   |
| Are climatic/hydrologic conditions on the Yes No (if no expl   | e site typical for this time<br>ain in Notes)                         | of year?                            | Are "No<br>Yes                           | ormal Circum                                       | nstances" pre<br>(If no, exp | sent:<br>plain in Notes.)  |
| Are Vegetation, Soil, or Hyd   |   | ly Disturbed                        |  | _(If yes, exp                                      | lain in Notes                |  |
| Are Vegetation, Soil, or Hyd   | drology Naturally F   | Problematic?                        | No                                       | (If yes, ex  | olain in Notes               | .)   |
| SUMMARY OF FINDINGS  | AND AND PROPERTY OF IT  |                                     |  |  | AND A                        |  |
| Hydrophytic Vegetation Present? Yes_   | No  | Is                                  | the Sampled A                            | Area within a                                      | a Wetland?                   | Yes No   |
| Hydric Soil Present? Yes_  | K No  | w                                   | etland Type:                             | PFo4/ss  | યા -                         | C.F.   |
| Wetland Hydrology Present? Yes_  | K No  | A                                   | aska Vegetatio                           | n Classificati                                     | on (Viereck):                | 142,482  |
| Notes and Site Sketch: Please include I corridor. Rain for the particle of the | st two dures Stratified a Slope Hem. F tall. High divi itation. Sever | Dre<br>illuvium<br>PICGLA<br>ersity | Summer<br>I. Sande<br>forest.<br>with a. | Prior of<br>Soils a<br>No Pic<br>Mix of<br>Equised | o rain                       | Partly cloudy 65°F<br>aitified Sil, vfSal<br>bserved. Moderately<br>net footed species |

Page 2 of 4

### WETLAND DETERMINATION DATA FORM

Spinulum annotinum Pannassia Palustas

| No tractical Parada Relationship for the   | CHANGE AND SAME     | ST WEST TES                   | antional and a second | THE REPORT OF THE PARTY OF THE  |
|--|---------------------|-------------------------------|-----------------------|--|
| VEGETATION (use scientific names of plants |                     |                               |                       | The second secon |
| Tree Stratum (Plot sizes: LOO )            | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status   | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: 3 (A)  Total Number of Dominant Species Across All Strata: 7 (B)  |
| 1. Picea glavca 20-do                      | 45%                 | Y                             | Fach                  | % Dominant Species that are OBL, FACW, or FAC: 0.42 (A/B)  |
| 2. Betula nevalaskana 45                   | 1/.                 | -                             | Faell                 | 75 Definition operates that are ODE, 1 AOV, of 1 Ac. (A/D)   |
| 3. \                                       |                     |                               |                       |  |
| 4.   |                     |                               |                       | Prevalence Index worksheet:  |
| Total Cover                                | : 46                |                               |                       | Total % Cover of: Multiply by:   |
| 50% of total cover                         | : <u>23</u> 20      | % of total cov                | er: <u> </u>          | OBL species:X1 =   |
| Sapling/Shrub Stratum ( 2 C )              | Absolute            | Dominant                      | Indicator             | FACW species: 10 X2 = 70   |
|  | % Cover             | Species?                      | Status                | FAC species 34 X3 = 102  |
|  |                     | (Y/N)                         |                       | FACU species 82 X4 = 328   |
| 1. Picea glavea 10-19'                     | 15                  | Y                             | Faell                 | UPL species X 5 =  |
| 2. Larry laricina d'                       | 17-                 |                               | Fae IN                | Column Totals: 129 (A) 453 (B)   |
| 3. Retula nevalaskana                      | 10%                 | Y                             | Facu                  | PI = B/A = _ 3.5\  |
| 4. Salix belsbiana 5-7'                    | 6                   | 1                             | Fal.                  | Vacconum Uliginosa T FOC   |
| 5. Salix Pseudomonticola 4                 | 2                   |                               | Fac                   | Betole slandilosa T Fac  |
| 6. Rhododen Lon govenlandica               | n 7%                |                               | For                   | Alms Incana 2 Fel  |
| 7. Rusa acreularis                         | 5%                  |                               | Facul                 | Salix marthafolia T  |
| 8. Empetrum nigrum                         | 5/                  |                               | Fac                   | Salix glavea T Fol<br>Salix relievata T Fac  |
| 9. Arctous ruber                           | 17-                 | Fac.                          | Fac                   | Salix reliculata TFac  |
| Vaccinium vitis idaca & Total Cover:       | 100 Cd.             | NB)                           | Fac                   | Dasiforia fraticosa T Fac<br>Viburaum edules T Facul   |
| 50% of total cover                         | 30.5 20             | % of total cov                | er: 12.2              | Salix arbusculoidies / Fach  |
| VEGETATION (use scientific names of plants | )                   |                               |                       |  |

| VEGETATION (use scientific names of plants | )        |                 |                  |   |
|--|----------|-----------------|------------------|---|
| Herb Stratum ( 26 )                        | Absolute | Dominant        | Indicator        | Hydrophytic Vegetation Indicators:  |
| 6 . 1 1 . 1                                | % Cover  | Species?        | Status           | Dominance Test is > 50%   |
| Leviscton palustre                         | -        | (Y/N)           | FALW             | Prevalence Index is ≤3.0  |
| 1. Equisation floriation                   |          | 1               | D BL             | Morphological Adaptations¹ (Provide supporting data in                              |
| 2. Rquisetom arverse                       | _ 2      | <u>"</u>        | Fac              | Notes)  |
| 3. Rubus ereticus                          | 1/       |                 | FOL              | Problematic Hydrophytic Vegetation¹ (Explain)                                       |
| 4. Cornus canadensis                       | · 27.    |                 | Faell            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless |
| 5. Valarian caritata                       | +        |                 |                  | disturbed or problematic.   |
| 6. Droscra rotundifolia                    |          |                 |                  | BAYS ILASON DOLLARS ON BY CARREST   |
| 7. Geocaulon lividicum                     | 31.      | N               | Facul            | % Bare Ground   |
| 8. Arctogratis latifolia                   | 17       | 1               | FaiN             | % Cover of Wetland Bryophytes   |
| 9. Calamagrostis canadensis                | 2%       |                 | Fac              | Total Cover of Bryophytes   |
| 10. Mertensca paniculata                   |          | 45              |                  | % Cover of Water  |
| Total Cover:                               | 10       |                 |                  | Hydrophytic Vegetation Present (Y/N):   |
| 500/                                       |          | 0% of total cov | or. 4 11         | Notes: (If observed, list morphological adaptations below):                         |
| (410/00 21                                 | T        |                 | el. <u>-1,-4</u> |   |
| Revisetum scirpoidies                      | Fa       | cu              |                  |   |
| Orchid sp                                  | T        |                 |                  |   |
| Chamerion angustifolia                     | T        |                 |                  | Feather Moss 20   |
| Carex biglown                              | T        |                 | 1 1 9            | Sphannum se 5   |

| SOIL   |  | The state of        | Date Fe  | eature l   |                   |   | AND PRESENT PROPERTY AND ADDRESS OF THE PARTY.   | Soil Pit Required (Y/N)   |
|--|--|---------------------|--|--|-------------------|---|--|---|
| SOIL PROFI   | LE DESCRIPTION: (  | (Describe           | to the depth needed  | d to doc   | ument the         | indicator or  | confirm the absence  | of indicators.)   |
| Depth  | Matrix   |                     | Redox Features   | - 01   | In i              |   |  |   |
| (inches)   | Color (moist)  | %                   | Color (moist)  | %  | Type <sup>1</sup> | Loc²  | Texture  | Notes   |
| 0-4.5  |  |                     |  |  |                   |   |  |   |
| 1.5-5  |  | _                   |  |  |                   |   |  |   |
| 5-9  | 5-15/2   | 82                  | 7.5-ce 4/6   | 6  | C.                | PL  | Loan- Son2   | a few Mn concentrati  |
|  | 25-14/2  | 10                  | N5/0   | 2  | 7                 | PL  | Z S-O-T S-O-TE   | a real forth towards  |
| 7-10.5   | N5/0   | 93                  | 7,5-12 4/6   | 7  | C                 | PL  | SIL  |   |
| 0.5-11   | 2.54 2.5/1   | 100                 | 113110116  | +′   |                   | 7 (   | MKSIL  |   |
| 1-16   | N510   | - (00.              | 7.5-416  | 20   | c                 | PLA   |  | borderline S.L. Piaty   |
|  | oncentration, D=Depl   | etion R             |  |  |                   |   |  | PL=Pore Lining, M=Matrix.   |
|  | IL INDICATORS  | Ottori, Tel         | Treduced Matrix, C   | ALCO CO.   | USE OF BE         | atod Sana C   | The second secon | OR PROBLEMATIC HYDRIC SOIL  |
| A THE PARTY OF THE | A DITTO TO STATE OF S | 32.370/10           | Aloeka Clause  | 1 (442)  | A CONTRACTOR      | SECTION AND ASS.  | THE RESERVE THE PARTY OF THE   | A TAXABLE MANAGEMENT OF THE PROPERTY OF THE PARTY OF THE |
|  | tic Epipedon (A2) Alaska Gleyed (A13) Alaska Redox (A14)   |                     |  | •  |                   | nange (TA4) <sup>4</sup> /  |  |   |
| Histic Epiped  |  |                     |  |  |                   |   |  | wales (TA5) N   |
| Black Histic (   | (A3)   |                     | Alaska Gleyed  | Pores  | (A15)((           |   |  | vith 2.5Y Hue N   |
| Hydrogen Su  | ılfide (A4) _ N  | _                   |  |  |                   |   | Layer_ N   | without 5Y Hue or Redder Underlying   |
| Thick Dark S   | Surface (A12)  |                     |  |  |                   |   | Other (Explain i   | n Notes)  |
| Hydric Soil I  | ayer (if present): Typ   | 7                   |  |  |                   |   |  |   |
| Hydric Soil I  | Present (Y/N):   | 7                   |  |  |                   | . I. I.e. a   | with the s   | havel and may act a   |
| Hydric Soil I<br>Notes: みょ<br>いたいもいと   | Present (Y/N):   | <del>1</del>        | fine muter.  | al wa  | s iden            |   | with the s   | ,   |
| Hydric Soil I<br>Notes: みょ<br>だいけんへん<br>HYDROLOG   | Present (Y/N):   | ATORS (a            | fine muter.  | al wa  | u) s              |   | Y INDICATORS (2 o  | ,   |
| Hydric Soil I<br>Notes: みょ<br>ないもれたも<br>HYDROLOG<br>Surface Wate   | Present (Y/N):   | ATORS (a            | finer western  | sufficience)   | es eden           | SECONDAR<br>Vater-staine<br>Leaves (B9)   | Y INDICATORS (2 o  | or more required) Stunted or Stressed   |
| Hydric Soil I<br>Notes: みょ<br>いたいもんでも<br>HYDROLOG<br>Surface Water T   | Present (Y/N):   | Su Inu (B)          | any one indicator is surface Soil Cracks (Beindation Visible on A  | sufficien  6) N  erial Im  | it) :             | SECONDAR<br>Vater-staine<br>Leaves (B9)<br>Orainage Pa  | tterns (B10) N   | or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)   |
| Hydric Soil I<br>Notes: み+<br>ないけんでも<br>HYDROLOG<br>Surface Wate<br>High Water T<br>Saturation (A  | Present (Y/N):  ~ 30" A lara  BY PRIMARY INDICA  er (A1)  Table (A2)  A3)Y   | Su Inc. (B) Sp Co   | any one indicator is surface Soil Cracks (Boundation Visible on A  | sufficien  6) N  erial Im  | t) s agery [      | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Orainage Pa<br>Oxidized Rhi  | tterns (B10) N  izospheres along (C3) Reduced  | or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  |
| Hydric Soil I  Notes: A+  HYDROLOG  Surface Water  High Water T  Saturation (A   | Present (Y/N):  ~ 30" A lara  BY PRIMARY INDICA  er (A1)  Table (A2)  A3)Y   | Su Int. (B) Sp Co   | any one indicator is surface Soil Cracks (Beindation Visible on A7)  | sufficien  6) N  erial Im  | agery [           | Vater-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rhi<br>Living Roots<br>Presence of<br>ron (C4)                 | tterns (B10) N  izospheres along (C3) Reduced  | or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Humas   |
| Hydric Soil I  Notes: A+  HYDROLOG  Surface Water  High Water T  Saturation (A  Water Marks  | Present (Y/N):  SY PRIMARY INDICA  er (A1)  Table (A2)  A3)  G (B1)  D   | Su Inc. (B7 Sp Co   | any one indicator is surface Soil Cracks (Buindation Visible on A A) A arsely Vegetated incave Surface (B8) and Deposits (B15) and Deposits (B15) and Deposits (B15)   | sufficien  6) _ \( \text{\tin}\text{\tett{\text{\tett{\text{\text{\text{\text{\text{\text{\text{\text{\text{\text{\ti}\text{\text{\text{\text{\text{\texit{\text{\text{\text{\text{\text{\text{\text{\text{\text{\texi}\text{\text{\texit{\texi{\tetitx}\text{\text{\texit{\texit{\texit{\texi\tin}\texict{\text{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\ | agery [           | Vater-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rhi<br>Living Roots<br>Presence of<br>ron (C4)                 | tterns (B10) N zospheres along (C3) Reduced  | or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Hummac Relief (D4)  |
| Hydric Soil I  Notes: A+  Collidary  HYDROLOG  Surface Water  High Water T  Saturation (A  Water Marks  Sediment De  Drift Deposits  | Present (Y/N):  SY PRIMARY INDICA  er (A1)  Table (A2)  (B1)  eposits (B2)  Present (Y/N):  Present (Y/N):  A3   | Su Inu (B7 Sp Co Ma | any one indicator is surface Soil Cracks (Beindation Visible on A A)  arsely Vegetated incave Surface (B8)  arl Deposits (B15)  drogen Sulfide lor (C1)  y-Season  | sufficien 6) _\text{\tiny{\text{\tiny{\text{\tint{\text{\tinit}\text{\text{\text{\text{\text{\text{\text{\texiext{\texit{\text{\texi}\text{\text{\text{\text{\texi}\text{\texit{\texit{\texicl{\tex{\texit{\texi{\texit{\texi{\texi{\texi\texi{\texi}\texit{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{ | agery [           | Vater-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rhi<br>Living Roots<br>Presence of<br>ron (C4)                 | tterns (B10) N zospheres along (C3) Reduced  | or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Hummac Relief (D4)  |
| Hydric Soil I  Notes: A+  CLITECT  HYDROLOG  Surface Water  High Water T  Saturation (A  Water Marks  Sediment De  Drift Deposits  Algal Mat or  | Present (Y/N):  BY PRIMARY INDICA  er (A1)  Table (A2)  (B1)  eposits (B2)  s (B3)   | Su Inu (B7 Sp Co Ma | any one indicator is surface Soil Cracks (Buindation Visible on A A) Ary Arsely Vegetated Incave Surface (B8) and Deposits (B15) Indrogen Sulfide Itor (C1) Indicator (C2) Indicator Table (C2) Indicator Indi | sufficien 6) _\text{\tiny{\text{\tiny{\text{\tint{\text{\tinit}\text{\text{\text{\text{\text{\text{\text{\texiext{\texit{\text{\texi}\text{\text{\text{\text{\texi}\text{\texit{\texit{\texicl{\tex{\texit{\texi{\texit{\texi{\texi{\texi\texi{\texi}\texit{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{ | agery [           | Vater-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rhi<br>Living Roots<br>Presence of<br>ron (C4)                 | tterns (B10) N zospheres along (C3) Reduced  | or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Hummac Relief (D4)  |
| Hydric Soil I  Notes: A+  CELLIFER DE  HYDROLOG  Surface Water  High Water T  Saturation (A  Water Marks  Sediment De  Drift Deposits  Algal Mat or  Iron Deposits   | Present (Y/N):  A 30" A 1676  BY PRIMARY INDICA  er (A1)  Fable (A2)  A3)  G(B1)  Exposits (B2)  Crust (B4)  S (B5)  S (B5)  | Su Inu (B7 Sp Co Ma | any one indicator is surface Soil Cracks (Bellindation Visible on A A A A A A A A A A A A A A A A A A  | sufficien 6) _\text{\tiny{\text{\tiny{\text{\tint{\text{\tinit}\text{\text{\text{\text{\text{\text{\text{\texiext{\texit{\text{\texi}\text{\text{\text{\text{\texi}\text{\texit{\texit{\texicl{\tex{\texit{\texi{\texit{\texi{\texi{\texi\texi{\texi}\texit{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{ | agery [           | Vater-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rhi<br>Living Roots<br>Presence of<br>ron (C4)                 | tterns (B10) N zospheres along (C3) Reduced  | or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Hummac Relief (D4)  |
| Hydric Soil I  Notes: A+  CELLIFER DE  HYDROLOG  Surface Water  High Water T  Saturation (A  Water Marks  Sediment De  Drift Deposits  Algal Mat or  Iron Deposits   | Present (Y/N):   | Su Inu (B7 Sp Co Ma | any one indicator is surface Soil Cracks (Buindation Visible on A A) Ary Arsely Vegetated Incave Surface (B8) and Deposits (B15) Indrogen Sulfide Itor (C1) Indicator (C2) Indicator Table (C2) Indicator Indi | sufficien 6) _\text{\tiny{\text{\tiny{\text{\tint{\text{\tinit}\text{\text{\text{\text{\text{\text{\text{\texiext{\texit{\text{\texi}\text{\text{\text{\text{\texit{\texit{\texict{\texit{\texit{\ticl{\texict{\texi{\texi{\texict{\texi{\texi}\texit{\texit{\texictex{\texit{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{ | agery [           | Vater-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rhi<br>Living Roots<br>Presence of<br>Fron (C4)                | tterns (B10) N zospheres along (C3) Reduced  | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Hummoc Relief (D4)  FAC-Neutral Test (D5)  |
| Hydric Soil I  Notes: A+  CELLIFER DE  HYDROLOG  Surface Water  High Water T  Saturation (A  Water Marks  Sediment De  Drift Deposits  Algal Mat or  Iron Deposits  Surface Water  | Present (Y/N):  A 30" A 1676  BY PRIMARY INDICA  er (A1)  Fable (A2)  A3)  G(B1)  Exposits (B2)  Crust (B4)  S (B5)  S (B5)  | Su Inu (B7 Sp Co Ma | any one indicator is surface Soil Cracks (Bellindation Visible on A A A A A A A A A A A A A A A A A A  | sufficien 6) _\text{\tiny{\text{\tiny{\text{\tint{\text{\tinit}\text{\text{\text{\text{\text{\text{\text{\texiext{\texit{\text{\texi}\text{\text{\text{\text{\texit{\texit{\texict{\texit{\texit{\ticl{\texict{\texi{\texi{\texict{\texi{\texi}\texit{\texit{\texictex{\texit{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{ | agery [           | Vater-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rhi<br>Living Roots<br>Presence of<br>Fron (C4)                | tterns (B10) N zospheres along (C3) Reduced  | or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Hummac Relief (D4)  |
| Hydric Soil I  Notes: A+  ( ( ) 1 + ( ) ( )  HYDROLOG  Surface Wate  High Water T  Saturation (A  Water Marks  Sediment De  Drift Deposits  Algal Mat or  Iron Deposits  Surface Wate  Water Table  Saturation Pi  | Present (Y/N):  SY PRIMARY INDICA  er (A1)  Table (A2)  (B1)  eposits (B2)  Crust (B4)  er Present (Y/N): Y  | Su Inu (B7 Sp Co Ma | any one indicator is surface Soil Cracks (Bellindation Visible on A A)  arsely Vegetated incave Surface (B8) and Deposits (B15) drogen Sulfide for (C1) y-Season ater Table (C2) ther (Explain in Notes)  Depth (in): 3  | sufficien 6) _\text{\tiny{\text{\tiny{\text{\tint{\text{\tinit}\text{\text{\text{\text{\text{\text{\text{\texiext{\texit{\text{\texi}\text{\text{\text{\text{\texit{\texit{\texict{\texit{\texit{\ticl{\texict{\texi{\texi{\texict{\texi{\texi}\texit{\texit{\texictex{\texit{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{ | agery [           | Vater-staine<br>Leaves (B9) Drainage Pa<br>Dxidized Rhi<br>Living Roots Presence of<br>fron (C4) Salt Deposits Notes: | tterns (B10) N zospheres along (C3) Reduced  | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Hummoc Relief (D4)  FAC-Neutral Test (D5)  :   |
| Hydric Soil I  Notes: A+  ( ( ) 1 + ( ) ( )  HYDROLOG  Surface Wate  High Water T  Saturation (A  Water Marks  Sediment De  Drift Deposits  Algal Mat or  Iron Deposits  Surface Wate  Water Table  Saturation Pi  | Present (Y/N):   | Su Inu (B7 Sp Co Ma | any one indicator is surface Soil Cracks (Be indation Visible on Ar)   | sufficien 6) _\text{\tiny{\text{\tiny{\text{\tint{\text{\tinit}\text{\text{\text{\text{\text{\text{\text{\texiext{\texit{\text{\texi}\text{\text{\text{\text{\texit{\texit{\texict{\texit{\texit{\ticl{\texict{\texi{\texi{\texict{\texi{\texi}\texit{\texit{\texictex{\texit{\texi{\texi{\texi{\texi{\texi{\texi{\texi{\texi{ | agery [           | Vater-staine<br>Leaves (B9) Drainage Pa<br>Dxidized Rhi<br>Living Roots Presence of<br>fron (C4) Salt Deposits Notes: | tterns (B10) N  zospheres along (C3) Reduced s (C5) N  | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Hummoc Relief (D4)  FAC-Neutral Test (D5)  :   |

### AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix   |
|---|
| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved       ✓ Forested-Deciduous-Broad-leaved         Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved       Scrub Shrub-Deciduous-Broad-leaved         Scrub Shrub-Evergreen-Broad-leaved       Scrub Shrub-Evergreen-Needle-leaved       Emergent-Non-persistent         Persistent       Aquatic Bed  |
| Percent Cover (P): Tree (>5 dbh, >6m tall)       U(g)       Sapling (<5 dbh, <6m tall)       Tall shrub (2-6m)       Short shrub (0.5-2m)       Short shrub (0.5-2m)       IS         Dwarf shrub (<0.5m)   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even  |
| Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) Very High Density (80-100%)   |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="https://www.energy.com/"></a>  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)   |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover_ &  |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)  |
| Vegetative Interspersion (P): Low (large patches, concentric rings) \( \times \) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope V Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
|   |
| SOIL VARIABLES  |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey  |
| HYDROLOGIC VARIABLES  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Outlet Perennial Outlet Perennial Outlet  |
| Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated X Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded   |
| Evidence of Sedimentation (P): No Evidence Observed & Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment  |
| Created   |
|   |
| Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval >5 yrs   |
| Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow  |
| Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow  Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading Section (Section 2.5) PH Reading Section (Section 2.5) PH Reading Section (Section 3.5) PH Reading |
| Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow  |
| Return Interval >5 yrs  |
| Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow  Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits  Glacial Till/Not Permeable  |
| Return Interval >5 yrs  |
| Return Interval >5 yrs  |
| Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow   Water pH (P): No surface water Circumneutral (5.5-7.4) ✓ Alkaline (>7.4) Acid (<5.5)   |
| Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow   Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5)   |
| Return Interval >5 yrs  |

### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Feature ID: 684 614009 | Field Target: 15 141 | Date: 7(20/ | 15 |
|------------------------|----------------------|-------------|----|
|                        |                      |             |    |

For all items not checked, please provide detailed explanation in the notes section of data form.

### 1. Site Description

- Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included in logbook?

### 2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- ✓ Vegetation names are entered legibly for all strata present?
- ☑ Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- ☑ Indicator status is correct for each species?
- ☑ Dominance Test and Prevalence Index have been completed?

#### 3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

### 4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

#### 5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

### 6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- Each logbook page is initialed and dated?

### 7. Maps

- Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

| X Jennifer Andreson       | X Jefton         | 7/20/5 |
|---------------------------|------------------|--------|
| Wetland Scientist (print) | Signature / Date | 7 - 1  |

Field Crew Chief (print) Signature / Date 7/20/15

| SITE DESCRIPTION   | The Control of the Line of the |                  | ALC: NO.               |               |                     |                         | RAYWA                 |
|--|--|------------------|------------------------|---------------|---------------------|-------------------------|-----------------------|
| Survey Type: Centerline 🗡 Acc  | ess Road (explain)   | Other (expla     | ain)                   | Field Targ    | jet: <u>  오</u> 140 | Map #: <u>\\2_</u> Ma   | p Date: <u>6/18/1</u> |
| Date: 7/20/15  | Project Name & No.:  | Alaska LNG       | IG 60418403 Feature Id |               |                     | :W84LH010               |                       |
| Investigators: Bryan Stro.   | ng Dennifer  | Anderso          | ~                      |               |                     | Team No.: (人)と          | -{                    |
| State: Alaska  | Region: Alaska   |                  | Milepost: ပျ           | 86            |                     |                         |                       |
| Latitude: 64. 24. 04.52  |  | Longitude        | 149.15                 | 40,91         |                     | Datum: WGS84            |                       |
| Logbook No.: 02  | Logbook Page No.: (  |                  |                        |               | 10_VEC              | NEG-PIT                 | PLUG                  |
| SITE PARAMETERS  | CONTRACTOR SECURITION AND ASSESSMENT   | A SAME           | ATTENDED TO            | NE CONT       |                     |                         |                       |
| Subregion: \ \ Luior   |  | Landform (hill   | Islope, terra          | ce, hummock   | is, etc.): Terra    | ce                      |                       |
| Slope (%): 2   |  |                  | Local relief (c        | oncave, cor   | ivex, none):        | Flat Flat               | +                     |
| Pre-mapped Alaska LNG/NWI classifi   | cation: 0;1C2  |                  | Evidence of V          | Vildlife Use: | None e              | bserved                 |                       |
| Are climatic/hydrologic conditions on t<br>Yes No (if no ex  | he site typical for this time  | of year?         | Are "No                | ormal Circur  | nstances" pre       |                         |                       |
| Are Vegetation, Soil, or F   | lydrology Significant  | tly Disturbed?   | No                     | _(If yes, ex  | plain in Notes      | s)                      |                       |
| Are Vegetation, Soil, or H   | lydrology Naturally F  | Problematic?     | No_x                   | _ (If yes, ex | plain in Note       | s.)                     |                       |
| SUMMARY OF FINDINGS  | SHARES SAND  |                  |                        |               |                     |                         |                       |
| Hydrophytic Vegetation Present? Yes  | s NoN  | Is               | the Sampled A          | Area within   | a Wetland?          | Yes                     | No                    |
| Hydric Soil Present? Yes   | No_ N  | w                | etland Type: (         | )             |                     | 5                       | - 20                  |
| Wetland Hydrology Present? Yes   | No N   | — Ala            | aska Vegetatior        | n Classificat | ion (Viereck):      | ICZ Poligon             | 1C3 Plo               |
| Notes and Site Sketch: Please include corridor. 1 C 3 at Point Dor summer up fill drained. Old channels dans now well vege | + most of ar<br>2 dars ago.<br>near by exh.  | Souls f          | 2. Very                | dry to        | reace.              | Rain Past<br>2. Somewho | 2 days                |
| U; ICT PUB/EMI   |  | 1,1cz<br>4010 MD | F                      |               |                     |                         |                       |

| VEGETATION (use scientific names of plants | )                   |                               |                     |  |
|--|---------------------|-------------------------------|---------------------|--|
| Tree Stratum (Plot sizes: (00)             | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: 1 (A)  Total Number of Deminant Species Assess All Status (C) |
| 1. Picca glavca                            | 17                  | Y                             | FACU                | Total Number of Dominant Species Across All Strata: (B)  % Dominant Species that are OBL, FACW, or FAC: (0.10)                               |
| 2. Populus balsanifera                     | 12                  | 4                             | FACU                | % Dominant Species that are OBL, FACW, of FAC: 0.110 (A/B  |
| 3.   |                     |                               |                     |  |
| 4.   | 7 × 1               |                               | -/                  | Prevalence Index worksheet:  |
| Total Cover                                | 29                  | ,                             |                     | Total % Cover of: Multiply by:   |
| 50% of total cover                         | : 14.5 20           | % of total cov                | er: <u>5.8</u>      | OBL species:X 1 =  |
| Sapling/Shrub Stratum ( 26 )               | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species: X2 =<br>FAC species  |
| 1. Picea glavea                            | 10                  |                               | FACU                | FACU species 44  |
| 2. Arctostzphilose uva - ursi              | 35                  | Y                             | MPL                 | Column Totals: 85 (A) 369 (B)  |
| 3. Rose accellans                          | 3                   | 1.41                          | FACU                | PI = B/A = 4,34  |
| 4. Viburnum edule                          | 1                   |                               | FAC                 |  |
| 5 Sherperdia candensic                     | T                   |                               | Facul               | 2 V V  |
| 6. Populus balcanifera                     | T                   |                               | Facul               |  |
| 7. Empetrum nigrum                         | 3                   |                               | FAC                 |  |
| 8.   |                     |                               |                     |  |
| 9.   |                     |                               |                     | V I  |
| Total Cover:                               | 52                  |                               |                     |  |
| 50% of total cover:                        | 20 20               | % of total cov                | er: 10 .4           |  |

| VEGETATION (use scientific names of plants | )        |                |                |   |
|--|----------|----------------|----------------|---|
| Herb Stratum ( 2 6 )                       | Absolute | Dominant       | Indicator      | Hydrophytic Vegetation Indicators:  |
| -  | % Cover  | Species?       | Status         | Dominance Test is > 50%   |
| 101  |          | (Y/N)          | <i>C</i> .     | Prevalence Index is ≤3.0  |
| 1. Calamagrostis canadensis                | _2       | <del> </del>   | FAC            | Morphological Adaptations¹ (Provide supporting data in                              |
| 2. Creocaulon lividicum                    |          | 7              | Faell          | Notes)  |
| 3. Equicetum Praterse                      | T        |                | FORN           | Problematic Hydrophytic Vegetation¹ (Explain)                                       |
| 4. Poa 50                                  | T        |                | (W)            | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless |
| 5. El-inus trachicaulis                    | 1        | 7              | Facu           | disturbed or problematic.   |
| 6. Chamarion angustifoliam                 | T        |                | Faell          |   |
| 7. Carex Conceina                          | T        |                | 0              | 5 % Bare Ground   |
| 8. Dr-1 tropis sp                          | T        |                | 7.             | % Cover of Wetland Bryophytes   |
| 9. Stellaria longipies                     | 7        |                | Fac            | Total Cover of Bryophytes   |
| 10   |          |                |                | % Cover of Water  |
| 10. Hedragen alpinam                       |          |                | Facu           | Hydrophytic Vegetation Present (Y/N):   |
| rotal Cover:                               |          |                |                | Notes: (If observed, list morphological adaptations below):                         |
| 50% of total cover:                        | <u> </u> | % of total cov | er: <u>0.8</u> | , , , , , , , , , , , , , , , , , , ,   |
|  |          |                |                | - II  |
|  |          |                |                | Bre 5   |

|                   |                                      |                                    | 7/20/15                           |                  | 11H010   |                               |   |
|-------------------|--------------------------------------|------------------------------------|-----------------------------------|------------------|--|-------------------------------|---|
| SOIL              | U.S. DESCRIPTION                     |                                    |                                   | eature ID        | At a land to the state of  |                               | Soil Pit Required (Y/N)                   |
|                   | ILE DESCRIPTION:                     | (Describe                          |                                   | to document      | the indicator or   | confirm the absent            | ce of Indicators.)                        |
| Depth<br>(inches) | Matrix                               | 1%                                 | Redox Features                    | % Type           | e <sup>1</sup> Loc <sup>2</sup>  | Tartura                       | Nietos                                    |
|                   | Color (moist)                        | -                                  | Color (moist)                     | % Typ            | e Loc  | Texture S.L                   | Notes                                     |
| 6-1               | 2.5-1 4/3                            | 100                                |                                   | -                |  | + FSaL                        |   |
| 1-2               | 2.37 7/3                             | 100                                |                                   |                  |  | + JaL                         |   |
| 5-24              | 516/1                                | (00)                               |                                   |                  |  | Sand                          | Single Stain 2% fine                      |
| 1 6               |                                      |                                    |                                   |                  |  |                               | savel                                     |
|                   |                                      |                                    |                                   |                  |  |                               |   |
|                   |                                      |                                    |                                   |                  |  |                               |   |
| Type: C=C         | oncentration, D=Dep                  | letion, RM                         | =Reduced Matrix, C                | S=Covered o      | r Coated Sand (  | Grains. <sup>2</sup> Location | n: PL=Pore Lining, M=Matrix.              |
| HYDRIC SO         | IL INDICATORS                        | WEST OF THE                        | Carlo Alexandria                  |                  | Walder Co.   | INDICATORS                    | FOR PROBLEMATIC HYDRIC SOILS <sup>3</sup> |
| listosol or H     | listel (A1)                          | -                                  | Alaska Gleyed                     | I (A13) <i>N</i> |  |                               | Change (TA4) <sup>4</sup>                 |
| listic Epiped     | don (A2)                             |                                    | Alaska Redox                      |                  |  | Alaska Alpine                 | Swales (TA5)                              |
| Black Histic      | (A3)\                                |                                    | Alaska Gleyed                     | Pores (A15)      | N  |                               | with 2.5Y Hue                             |
| Hydrogen Su       | ulfide (A4)                          | _                                  |                                   |                  |  | Alaska Gleyed                 | d without 5Y Hue or Redder Underlying     |
| <br>Γhick Dark S  | Surface (A12)                        |                                    |                                   |                  |  | Other (Explain                | n in Notes)                               |
|                   |                                      | etation, or                        | e primary indicator               | of wetland hy    | drology, and an  | appropriate landsc            | ape position must be present unless       |
|                   | problematic.<br>of color change in N | otes.                              |                                   |                  |  |                               |   |
|                   | ayer (if present): Typ               |                                    | [                                 | Depth (inches    | ):_ ~A~  |                               |   |
|                   |                                      | )                                  |                                   |                  |  |                               |   |
| Hydric Soil       | Present (Y/N):                       | N                                  |                                   |                  |  |                               |   |
| Notes:            |                                      |                                    |                                   |                  |  |                               |   |
|                   |                                      |                                    |                                   |                  |  |                               |   |
|                   |                                      |                                    |                                   |                  |  |                               |   |
| ANDBOI OC         | Y PRIMARY INDICA                     | TOPS (a)                           | w one indicator is s              | ufficient)       | SECONDAR   | VINDICATORS (                 | 2 or more required)                       |
|                   |                                      |                                    |                                   | ,                | Water-staine   |                               | Stunted or Stressed                       |
| Surface Wat       | er (A1)                              | Surf                               | ace Soil Cracks (B                | 3) <u>\</u>      | Leaves (B9)  |                               | Plants (D1)                               |
| High Water 1      | Table (A2)                           |                                    | dation Visible on A               | erial Imagery    | Drainage Pa  | atterns (B10) _ \(\infty\)    | Geomorphic Position (D2)                  |
|                   | 100                                  | - (B7)                             |                                   |                  |  | izospheres along              |   |
| Saturation (A     | (3) <u>N</u>                         | Con                                | rsely Vegetated cave Surface (B8) | N                | Living Roots   |                               | Shallow Aquitard (D3) _ /\dot\            |
| Water Marks       | (B1) ()                              |                                    | Deposits (B15)                    |                  | Presence of  |                               | Microtopographic                          |
| - Valer Marks     | (B1) <u>N</u>                        |                                    |                                   | N                | Iron (C4)  | <u>V)</u>                     | Relief (D4)                               |
| Sediment De       | eposits (B2)/                        | ts (B2) Hydrogen Sulfide Odor (C1) |                                   |                  |  | s (C5) _ <i>N</i>             | FAC-Neutral Test (D5)                     |
|                   | (70)                                 | $\rightarrow$                      | Season                            |                  | Notes:   |                               |   |
| Orift Deposit     | s (B3)                               |                                    | er Table (C2)/                    |                  |  |                               |   |
| Algal Mat or      | Crust (B4)                           | _ Oth                              | er (Explain in Notes              | ):               |  |                               |   |
|                   | (DE)                                 |                                    |                                   |                  | -  |                               |   |
| ron Deposits      | s (B5) <u>\(\lambda\)</u>            |                                    |                                   |                  | THE RESIDENCE OF THE PARTY OF T |                               |   |
| Curfooo Mot       | er Present (Y/N): N                  | The second second                  | Donth (in): 1/                    | E HOHMAN         |  |                               |   |
|                   |                                      |                                    | Depth (in): NA                    | -                | Wetland Hydr   | ology Present (Y/I            | N): N                                     |
| Water Table       | Present (Y/N): 🙏                     |                                    | Depth (in):                       |                  |  | gy . 1000iii (1/i             |   |
| Saturation P      | resent (Y/N):                        |                                    |                                   |                  | - 1 A  |                               |   |
| includes car      | oillary fringe)                      |                                    | Depth (in): NA                    |                  | EC:NA  |                               |   |
| Votes:            |                                      |                                    |                                   |                  |  |                               | , O (1)                                   |
|                   |                                      |                                    |                                   |                  |  |                               |   |
|                   |                                      |                                    |                                   |                  |  |                               |   |
|                   |                                      |                                    |                                   |                  |  |                               |   |

### AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P): Vegetation LackingForested-Deciduous-Needle-leavedForested-Deciduous-Broad-leavedForested-Evergreen-Needle-leavedScrub Shrub-Deciduous-Needle-leavedScrub Shrub-Deciduous-Broad-leavedScrub Shrub-Evergreen-Broad-leavedScrub Shrub-Evergreen-Needle-leavedEmergent-Non-persistentPersistentAquatic Bed   |
| Percent Cover (P): Tree (>5 dbh, >6m tall)         Sapling (<5 dbh, <6m tall)         Tall shrub (2-6m)         Short shrub (0.5-2m)           Dwarf shrub (<0.5m)   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| Vegetation Density/Dominance (P): Sparse (0-20%)       Low Density (20-40%)       Medium Density (40-60%)       High Density (60-80%)  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover  |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)   |
| Vegetative Interspersion (P):       Low (large patches, concentric rings)       Moderate (broken irregular rings)         High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
| SOIL VARIABLES   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey   |
| HYDROLOGIC VARIABLES   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/P |
| Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded  |
| Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)  |
| Frequency of Overbank Flooding (P): No Overbank Flooding       Return Interval 1-2 yrs       Return Interval 2-5 yrs         Return Interval >5 yrs       Return Interval 2-5 yrs       Return Interval 2-5 yrs  |
| Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow   |
| Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading  |
| Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable  |
| Basin Topographic Gradient (M):       Low Gradient (<2%)   |
| LANDSCAPE VARIABLES (M)  |
| Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below   |
| Only Connected Above Connected Upstream & Downstream Unknown   |
| Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)   |
| Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized   |
| Size:         Small (<10 acres)         Medium (10-100 acres)         Large (>100 acres)   |

Bro Shy

GPS Technician QA/QC check

\* Jebin

### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Feature ID: W84 LHO 10 | Field Target: 15140 | Date: 7/20 ( | 15 |
|------------------------|---------------------|--------------|----|
|                        |                     |              |    |

For all items not checked, please provide detailed explanation in the notes section of data form.

### 1. Site Description

- Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included in legbook?

### 2. Vegetation

Lora

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- ☑ Vegetation names are entered legibly for all strata present?
- Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- ☑ Indicator status is correct for each species?
- Dominance Test and Prevalence Index have been completed?

#### 3. Soil

- ☑ Soil profile is complete?
- Appropriate hydric soil indicators are marked?

#### 4. Hydrology

- ☑ Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

### 5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

### 6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- Each logbook page is initialed and dated?

### 7. Maps

- Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

| X Jannifer                | Anderson | X Ochon          | 7/20/15 |
|---------------------------|----------|------------------|---------|
| Wetland Scientist (print) |          | Signature / Date |         |

X Brun Strong X 5 7/20/15
Field Crew Chief (print) Signature / Date

| SITE DESCRIPTION  |                     |                |                | 150               |                   | STATE OF STA |
|---|---------------------|----------------|----------------|-------------------|-------------------|--|
| Survey Type: Centerline 🗶 Acces   | ss Road (explain)   | Other (expla   | ain)           | Field Targ        | et: <u>1520</u> 5 | Map #: <u>≤⁵</u> Map Date: <u>6 / 18/15</u>  |
| Date: 7/21/15   | Project Name & No.: | Alaska LNG     | 60418403       |                   | Feature Id:       | M84LHOII   |
| Investigators: Brown  | g Dennifer          | Ande           | "Sois          |                   |                   | Team No.: ₩84  |
| State: Alaska   | Region: Alaska      |                | Milepost: 4    | 114.7             |                   |  |
| Latitude: 65 17 58.09   |                     | Longitude      | :-148          | 35 57             | .48               | Datum: WGS84   |
| Logbook No.: 02   | Logbook Page No.:   | <b>0</b> 3     | Picture No.:   | WEYLH             | OH - VEC          | S-VEC-PIT-PLUL   |
| SITE PARAMETERS   |                     | Re Invita      |                |                   | W. W. 24          |  |
| Subregion: (nterior highla  | 25~                 |                | Landform (hi   | llslope, terrac   | e, hummocks       | i, etc.): Shoulder slave   |
| Slope (%): 24% massice  |                     |                |                |                   |                   | onvex hummoder smal  |
| Pre-mapped Alaska LNG/NWI classifica  |                     |                |                |                   |                   | bsersed  |
| Are climatic/hydrologic conditions on the Yes No (if no expl  | alm in Blakent      | 100            | Are "N<br>Yes  | ormal Circum      | stances" pres     | sent:<br>olain in Notes.)  |
| Are Vegetation, Soil, or Hyd  |                     | lly Disturbed? |                |                   | lain in Notes)    |  |
| Are Vegetation, Soil, or Hyd  | drology Naturally F | Problematic?   | No_ <u>√</u>   | (If yes, exp      | olain in Notes    | .)   |
| SUMMARY OF FINDINGS   |                     |                | 10000          |                   |                   | O STATE OF MARKET AND ALL  |
| Hydrophytic Vegetation Present? Yes_  | × No                | Is             | the Sampled    | Area within a     | Wetland?          | Yes NoX  |
| Hydric Soil Present? Yes_   | No×_                | w              | etland Type:   | U                 |                   |  |
| Wetland Hydrology Present? Yes_   | NoX                 | Ala            | aska Vegetatio | n Classification  | on (Viereck):     | 112  |
| Notes and Site Sketch: Please include I corridor. PICMAR forest Should erstope. PICMAR Penther wass and lie | 2 25-40'.           | dge Po,        | few sc.        | a conca<br>attere | VE MIC<br>DET     | rosite on a<br>PAP. Carpet of  |
| 1-2-3   | 70-                 | 46.4           | . ;            |                   | E .               | PFOTISSIR  |

| VEGETATION (use scientific names of plants |                     |                               |                     |  |  |  |  |  |  |
|--|---------------------|-------------------------------|---------------------|--|--|--|--|--|--|
| Tree Stratum (Plot sizes: 100)             | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC:  Total Number of Deminant Species Agrees All Strates  |  |  |  |  |  |
| 1. Picca mariana 25-40'                    | 45 /                | -{                            | FarW                | Total Number of Dominant Species Across All Strata:(B)  % Dominant Species that are OBL, FACW, or FAC:(A/B)  |  |  |  |  |  |
| 2. Betola regalasteans                     | 1%                  |                               | Facul               | (ve)   |  |  |  |  |  |
| 3.   |                     |                               |                     |  |  |  |  |  |  |
| 4.1  |                     | 7-7                           | 40                  | Prevalence Index worksheet:  |  |  |  |  |  |
| Total Cover:                               | 46                  | ۲۰                            |                     | Total % Cover of: Multiply by:   |  |  |  |  |  |
| 50% of total cover                         | 23 20               | % of total cov                | er: <u>9, 2</u>     | OBL species:X 1 =  |  |  |  |  |  |
| Sapling/Shrub Stratum ( 26 )               | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species: 59 X 2 = 18  FAC species 70 X 3 = 78  FACU species 13 X 4 = 57   |  |  |  |  |  |
| Bettle neveloskana                         | 37                  |                               | Fac II              | FACU species X 4 = X 5 = |  |  |  |  |  |
| 2. Vaccinium uliquiosa                     | 5%                  |                               | Fac                 | Column Totals: 98 (A) 298 (B)  |  |  |  |  |  |
| 3. Vaccinion whis idage                    | 10%                 | 7                             | Far                 | PI = B/A = 2.53  |  |  |  |  |  |
| 4. Photodendray tomer tosy                 | 7/                  | L i i                         | FORW                |  |  |  |  |  |  |
| 5. Sp. rea stevens                         | 37.                 | J. 1                          | Facul               | *  |  |  |  |  |  |
| 6. Rho Zo Zendron groenlandico             | y 1/.               |                               | Fac .               |  |  |  |  |  |  |
| 72050 acicularis                           | 1%                  |                               | FACU                |  |  |  |  |  |  |
| 8. Ribes histe                             | 20%                 | - 7                           | For.                |  |  |  |  |  |  |
| 9.   |                     |                               |                     |  |  |  |  |  |  |
| Total Cover:                               | - W                 |                               |                     |  |  |  |  |  |  |
| 50% of total cover:                        | 20                  | % of total cov                | er:_(>              |  |  |  |  |  |  |

| Herb Stratum( <u>26</u> )  | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  |
|--|---------------------|-------------------------------|---------------------|--|
| 1. Calamagnotic compositio   | 7/                  | 7                             | Fac<br>Fac W        |  |
| 3. Cornus canadensis 4. Calanggrostis lapponica 5. Aconogonon alaskang | 5%<br>7%            | 7                             | Fac Fac             | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic. |
| 6. Ribres tout. 7. 8.  | -207-6              | (B)                           |                     | % Bare Ground Cover of Wetland Bryophytes  |
| 9.   | 28                  |                               |                     | Total Cover of Bryophytes % Cover of Water Hydrophytic Vegetation Present (Y/N):   |
| Total Cover:<br>50% of total cover:                                    |                     | % of total cov                | rer: <u>(, ()</u>   | Notes: (If observed, list morphological adaptations below):  |

| SOIL   |  |                   | Date Fe   | eature ID_                               |                    |   |   | Soil Pit Required (Y/N)   |
|--|--|-------------------|---|--|--------------------|---|---|---|
| SOIL PROFII  | LE DESCRIPTION:  | (Describe         | e to the depth needed   | d to docun                               | ent the            | indicator or  | confirm the absen                                 |   |
| Depth  | Matrix   | Redox Features    |   |  |                    |   |   |   |
| (inches)   | Color (moist) % Color (moist) % T  |                   | Гуре <sup>1</sup>   | Loc²                                     | Texture            | Notes   |   |   |
| 5-5  | *  |                   |   |  |                    |   |   | 4 = 1   |
| ] cu   | AA   |                   |   | 1 1                                      |                    |   | Cobble/fl   | & Cobble Gravel Stones &  |
| 4-17   | 10-ca 4/6  |                   |   |  |                    | 7   |   |   |
| 1  |  |                   | .9  |  |                    |   | VCBLOOM   | ~65% Cobble and gran  |
|  |  |                   |   |  | 5                  |   | V   | Saturated, No redo  |
|  |  |                   | , I >   |  |                    |   |   | features, No Position   |
|  |  |                   |   |  |                    | 9   |   | altha altha   |
| Type: C=Co   | ncentration, D=Depl  | etion, RM         | M=Reduced Matrix, C   | S=Covere                                 | d or Co            | ated Sand G   | Grains. <sup>2</sup> Location                     | n: PL=Pore Lining, M=Matrix.  |
| IYDRIC SOI   | L INDICATORS   | Colon R           |   | 1 -270                                   |                    |   | INDICATORS  | FOR PROBLEMATIC HYDRIC SOIL   |
| istosol or Hi  | stel (A1)  |                   | Alaska Gleyed   | (A13)                                    | J                  |   | Alaska Color                                      | Change (TA4) <sup>4</sup>   |
| listic Epiped  | on (A2) N  |                   | Alaska Redox  | (A14)/                                   | J                  | 77  | Alaska Alpine                                     | Swales (TA5)  |
| Black Histic (   | A3)  |                   | Alaska Gleyed   | Pores (A                                 | 15)(               |   |   | with 2.5Y Hue   |
| •  | Ifide (A4)   |                   |   | >e: = <sup>'X</sup>                      |                    |   |   | without 5Y Hue or Redder Underlying   |
|  |  |                   |   |  | 17                 |   | Layer_\(\infty\)                                  |   |
|  | urface (A12) <u></u>   |                   |   |  | land of            |   | Other (Explain                                    | ape position must be present unless   |
|  | yer (if present): Typ  | e: <i>NI</i>      |   | Depth (incl                              | 1007               |   |   |   |
| Restrictive La   | Present (Y/N):   |                   |   |  | 7./A               |   | · · · · · · · · · · · · · · · · · · ·             |   |
| Nestrictive La   | Present (Y/N):   | Con Con           |   | - 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- 1- | 7. /A              |   | <u>.</u> 0  | 2 or more required)   |
| Nestrictive La   | Present (Y/N):   | TORS (a           | e ancessate   | ufficient)                               | S                  |   | Y INDICATORS (                                    | 2 or more required) Stunted or Stressed Plants (D1)   |
| Nestrictive La   | Present (Y/N):   | TORS (a           | any one indicator is surface Soil Cracks (B6  | ufficient)                               | S<br>V<br>L        | ECONDAR<br>Vater-staine<br>eaves (B9)   | Y INDICATORS (                                    | Stunted or Stressed   |
| Nestrictive La   | Y PRIMARY INDICA   | Su Inu (B7        | any one indicator is surface Soil Cracks (B6  | ufficient)                               | S V L L COY C      | ECONDAR<br>Vater-staine<br>eaves (B9)<br>trainage Pat   | tterns (B10)                                      | Stunted or Stressed<br>Plants (D1)  |
| Nestrictive La   | Present (Y/N):  Present (Y/N):  Y PRIMARY INDICA  or (A1)  able (A2)  3) | Su Inu (B7 Sp. Co | any one indicator is surface Soil Cracks (B6 indation Visible on Ae arsely Vegetated  | ufficient)  i) \) erial Image            | S V L              | ECONDAR<br>Vater-staine<br>eaves (B9)<br>vrainage Pat   | tterns (B10)                                      | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)   |
| Hydric Soil P<br>Notes: The Hydrocons<br>Hydrocons<br>Hydrocons<br>Surface Water<br>High Water Ta<br>Saturation (AS  | Present (Y/N):  Present (Y/N):  Y PRIMARY INDICA  or (A1)  able (A2)  3) | Su Inu (B7 Sp. Co | any one indicator is surface Soil Cracks (B6 indation Visible on Aer)   | ufficient)  i) \) erial Image            | S V L C C L L P Ir | ECONDAR  Vater-staine eaves (B9) erainage Pate exidized Rhiziving Roots resence of                              | tterns (B10) Nzospheres along (C3) Reduced        | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Small  |
| Iydric Soil Plotes: Purpose Water Water Marks ediment Dep  | Present (Y/N):   | Su Inu (B7 Co Ma  | any one indicator is surface Soil Cracks (B6 indation Visible on Aer) arsely Vegetated incave Surface (B8) rl Deposits (B15)  | ufficient)  i) \) erial Image            | SS V L             | ECONDAR Vater-staine eaves (B9) varinage Pat exidized Rhi iving Roots resence of on (C4)                        | tterns (B10) Nzospheres along (C3) Reduced        | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  Number 1  |
| Hydric Soil P Notes: The Hydrocom Hydrocom Hydrocom Hydrocom Surface Wate High Water Ta Saturation (AS Vater Marks Sediment Dep  | Present (Y/N):   | Su Inu (B7 Sp. Co | any one indicator is surface Soil Cracks (B6 indation Visible on Ae indation Visible on Ae incave Surface (B8)  | ufficient)  i) _ N  erial Image          | SS V L             | Jecondar<br>Vater-staine<br>eaves (B9)<br>Prainage Pat<br>Exidized Rhis<br>iving Roots<br>resence of<br>on (C4) | tterns (B10) Nzospheres along (C3) Reduced        | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  Number 1  |
| Restrictive Land Restri | Present (Y/N):   | Su Inu (B7 Sp. Co | any one indicator is surface Soil Cracks (B6 indation Visible on Ae r)  arsely Vegetated incave Surface (B8)  rl Deposits (B15)  drogen Sulfide or (C1)  r-Season itter Table (C2)                            | ufficient)  i) _ N  erial Image          | SS V L             | Jecondar<br>Vater-staine<br>eaves (B9)<br>Prainage Pat<br>Exidized Rhis<br>iving Roots<br>resence of<br>on (C4) | tterns (B10) Nzospheres along (C3) Reduced        | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  Number 1  |
| Hydric Soil P Notes: P. HydroLogy  Burface Water High Water Ta Saturation (AC Water Marks  Bediment Dep Drift Deposits  Algal Mat or C ron Deposits  | Present (Y/N):   | Su Inu (B7 Sp. Co | any one indicator is surface Soil Cracks (B6 indation Visible on Ae r)  arsely Vegetated incave Surface (B8)  rl Deposits (B15)  drogen Sulfide or (C1)  r-Season itter Table (C2)                            | ufficient)  i) _ N  erial Image          | S V L L P III S N  | Jecondaria Vater-staine eaves (B9) orainage Patividized Rhiziving Roots resence of on (C4) alt Deposits otes:   | tterns (B10) N<br>zospheres along<br>(C3) Reduced | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)  Y  |
| Hydric Soil P Notes: P. Hydric Soil P Notes: P Notes: P. Hydric Soil P Notes:  | Present (Y/N):   | Su Inu (B7 Sp. Co | any one indicator is surface Soil Cracks (B6 indation Visible on Ae arsely Vegetated incave Surface (B8) _ rl Deposits (B15) _ Adrogen Sulfide or (C1) _ / Season inter Table (C2) _ Adres (Explain in Notes) | ufficient)  i) _ N  erial Image          | S V L L P III S N  | Jecondaria Vater-staine eaves (B9) orainage Patividized Rhiziving Roots resence of on (C4) alt Deposits otes:   | tterns (B10) Nzospheres along (C3) Reduced        | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)   The stress of the plants of t |

### AQUATIC SITE ASSESSMENT DATA FORM

|  | M= Matrix  |
|--|--|
| Forested-Evergreen-Needle-leaved   | acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-   |
| Percent Cover (P): Tree (>5 dbh, >6m tall)_<br>Dwarf shrub (<0.5m) Tall herb (≥1   | Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Moss-Lichen Floating Submerged   |
| Number of Wetland Types (M);   | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even  |
| Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)  | e (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-   |
| Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scatter   | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant  | species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none)   | One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): Open Small Scattered Patches   | No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover   |
| Dead Woody Material (P): Low Abundance<br>Abundant (>50% of surface)   | (0-25% of surface) Moderately Abundant (25-50% of surface)   |
| Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers   | e patches, concentric rings) Moderate (broken irregular rings)   |
| HGM Class (P): Slope Flat  | Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
| -3-  |  |
| SOIL VARIABLES   | Library Children Control Contr |
| Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy  | Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Clayey Mineral: Clayey  |
| HYDROLOGIC VARIABLES   | THE PROPERTY OF THE PARTY OF TH |
|  |  |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermitten Inlet/Intermittent Outlet Perennial I  | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No  Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet  |
| Outlet Intermittent Inlet/Intermitten<br>Inlet/Intermittent Outlet Perennial I   | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennia  |
| Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I  Wetland Water Regime (P): Drier: Sea: Wet: Perm. Flooded, Intermittently Exposed,  Evidence of Sedimentation (P): No Evider  | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennia  |
| Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created   | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Sonally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded  |
| Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet   | to Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/  |
| Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Inlet/Intermit   | to Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/  |
| Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Inlet/Inte       | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inl   |
| Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Perennial Inlet/Intermittent Perennial Inlet/Intermittent Perennial Inlet Inle | toutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial OutletPerennial Inlet/Perennial Inlet/Pere                        |
| Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Perennial Inlet/Intermittent Perennial Inlet/Intermittent Perennial Inlet In   | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Per                           |
| Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Perennial Inlet    | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Per                           |
| Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet Inlet Inlet Intermittent Outlet Perennial Intermittent Outlet Intermittent Intermittent Outlet Intermittent Intermittent Outlet Intermittent Intermittent Intermittent Outlet Intermittent Outlet Intermittent Intermittent Outlet Intermittent Interm            | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Per  |
| Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Perennial Inlet Inlet Inlet Inlet Inlet Intermittent Perennial Inlet Inle      | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Inlet/No |
| Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Intermittent Outlet Perennial Intervity Exposed, Evidence of Sedimentation (P): No Evider Created  Microrelief of Wetland Surface (P): Absent Outlet Outlet Outlet Outlet Prequency of Overbank Flooding (P): No Created Outlet Restriction (P): No Outfloom Outlet Perennial Intervity Outlet Outlet Perennial Intervity Outlet                | to Outlet  |
| Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Council Intermittent Outlet Council Intermittent Outlet Intermittent Intermittent Intermittent Intermittent Outlet Intermittent In                | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Inlet/No |

### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature ID: W84LHOLL Field Target: (53-05 Date: 7/21/15 For all items not checked, please provide detailed explanation in the notes section of data form.

#### 1. Site Description

Site description, site parameters and summary of findings are complete?

A detailed site sketch is included in legbook?

### 2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- Vegetation names are entered legibly for all strata present?
- S Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- Indicator status is correct for each species?
- Dominance Test and Prevalence Index have been completed?

#### 3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

### 4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

#### 5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

### 6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- Each logbook page is initialed and dated?

### 7. Maps

- Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

### 8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

☐ Two photos were taken for each Observation Point (vegetation/site overview)?

Wetland Scientist (print)

X

Signature / Date

7/21/15

Field Crew Chief (print)

ignature / Date

| Survey Type: Centerline _ Acce                                   | ess Road (explain)   | Other (expl    | ain)           | Field Targ       | et:15211                              | Map #: <u>49</u> Map Date: <u>6/18/</u> |
|--|----------------------|----------------|----------------|------------------|---------------------------------------|---|
| Date:7/21/15   | Project Name & No.:  | Alaska LNG     | 60418403       |                  | Feature Id                            | W84CH012                                |
| Investigators: Brean Stron                                       | Sensfer              | Anders         | 51             |                  | ·                                     | Team No.: 84                            |
| State: Alaska  | Region: Alaska       |                | Milepost: Ц    | 14,2             | -                                     |   |
| Latitude: 65°18'24.99  | ·                    | Longitude      | :1480 35       | 156.7            | 7                                     | Datum: WGS84                            |
| Logbook No.: 02  | Logbook Page No.:    |                |                |                  |                                       | 5- VEG - PIT PLUG                       |
| NITE DADAMETERS  |                      |                |                |                  | 115.                                  |   |
| Subregion: L. )  |                      |                | Landform (bil  | lelone terrac    | e hummock                             | s, etc.): R. 452                        |
| Subregion: Interior Ityshlani<br>Slope (%): 5                    | 25                   | -              |                |                  |                                       |   |
| Pre-mapped Alaska LNG/NWI classific                              | ation: ( )           |                | Evidence of 1  | Wildlife I lee   | , , , , , , , , , , , , , , , , , , , | lat to Slightly convex hummonly sma     |
| Are climatic/hydrologic conditions on the                        |                      | of year?       |                | ormal Circum     |                                       | bserved hummocky sma<br>sent:           |
| YesXNo(if no exp   | plain in Notes) Drus | ummer          | Yes            | No               | (If no, ex                            | plain in Notes.)                        |
| Are Vegetation, Soil, or Hy                                      |                      | tly Disturbed? | No_K           | _(If yes, exp    | lain in Notes                         | )                                       |
| Are Vegetation, Soil, or Hy                                      | /drology Naturally F | Problematic?   | No_×           | _ (If yes, exp   | olain in Notes                        | 5.)                                     |
| SUMMARY OF FINDINGS  |                      | Alklis:        | Service of the | N. A.            |                                       |   |
| Hydrophytic Vegetation Present? Yes_                             | No                   | ls             | the Sampled A  | Area within a    | Wetland?                              | Yes No<                                 |
| Hydric Soil Present? Yes_  | No                   | _ w            | etland Type: ( | ) **             |                                       |   |
| Vetland Hydrology Present? Yes_                                  | No                   | — АІ           | aska Vegetatio | n Classification | on (Viereck):                         | 142                                     |
| Notes and Site Sketch: Please include corridor: Dre Black Sprace | forest on a r        | LLAP,          | lack Spr       | ince are         | 25-4:<br>AN MO                        | 5' Understone of Pici                   |
| 9  |                      |                |                | 4                |                                       |   |

| Stratum (Plot sizes: [00] | Absolute<br>% Cover                              | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | No. of Dominant Species th                         | nat are OBL, FACW, o |     |
|---------------------------|--|-------------------------------|---------------------|--|----------------------|-----|
| ricca mariana             | 45/  | y                             | Fac W               | Total Number of Dominant % Dominant Species that a |                      |     |
|                           |  | 1                             |                     | , a seriment operate and a                         |                      | .0  |
|                           |  |                               | 1                   |  |                      |     |
|                           |  |                               |                     | Prevalence Index worksh                            | eet:                 |     |
| Total Cove                | r: <u>45                                    </u> |                               |                     | Total % Cover of:                                  | Multiply             | by: |
| 50% of total cove         | er: <u>22.5</u> 20                               | % of total cov                | er:                 |  | X 1 =                | _   |
| ling/Shrub Stratum ( 22 ) | Absolute<br>% Cover                              | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species: 70  FAC species 10                   | _X3=_137_            | _   |
| ices merions              | 25%  | V                             | FORW                | UPL species  |                      |     |
| accinion olyinosany       | 3/.  |                               | For                 | Column Totals: 120                                 |                      |     |
| iccinion vitu idaes       | 107  | X                             | Fa.c.               | PI = B/A =   |                      |     |
| odođendron graculandica   | m 11/2   |                               | Fac                 |  |                      |     |
| nes wirder                | 17   |                               |                     |  |                      |     |
|                           |  |                               |                     |  |                      |     |
|                           |  |                               |                     |  |                      |     |
|                           |  |                               |                     |  |                      |     |
|                           |  |                               |                     |  |                      |     |
| Total Cove                | r: <u>39</u>                                     |                               |                     |  |                      |     |
| 50% of total cove         | r: 19 5 20                                       | % of total cov                | er: 7.8             |  |                      |     |

| Herb Stratum ()                                    | Absolute | Dominant          | Indicator | Hydrophytic Vegetation Indicators:   |
|--|----------|-------------------|-----------|--|
|  | % Cover  | Species?<br>(Y/N) | Status    | Dominance Test is > 50%  |
| 1. Calanagrostis la provica                        | 307      | y -               | Fac       | Prevalence Index is ≤ 3.0  |
| 1. Calamograstis lapponica<br>2. Cornus canadensis | 10/      | Ý                 | Facu      | Morphological Adaptations <sup>1</sup> (Provide supporting data in Notes)                          |
| 3. (scacaulon ) widicom                            | 21       |                   | FAELL     | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 4.   |          |                   |           | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless                |
| 5.   |          |                   |           | disturbed or problematic.  |
| 6.   |          |                   |           | SANGER LANGE CONTRACTOR OF STREET  |
| 7.   |          |                   |           | % Bare Ground  |
| 8.   |          | -                 |           | % Cover of Wetland Bryophytes  |
| 9.   |          | -                 |           | Total Cover of Bryophytes  |
| 10.  |          |                   |           | % Cover of Water   |
| Total Cover:<br>50% of total cover:                |          | % of total cov    | er:_8,    | Hydrophytic Vegetation Present (Y/N):  Notes: (If observed, list morphological adaptations below): |
|  |          |                   |           |  |
| 0  |          |                   |           | Teather Mass 90  |

|  |  | 4000                                    |  |                                 | D                               |  |   | Soil Pit Required (Y/  | /IN/_    |
|--|--|---|--|---------------------------------|---------------------------------|--|---|--|----------|
| SOIL PROF  | ILE DESCRIPTION:   | (Describe                               | to the depth needs   | ed to doc                       | ument the i                     | indicator or c   | confirm the abser   | nce of indicators.)  |          |
| Depth  | Matrix   |   | Redox Features   |                                 |                                 |  |   |  |          |
| (inches)   | Color (moist)  | %                                       | Color (moist)  | %                               | Type <sup>1</sup>               | Loc <sup>2</sup>   | Texture   | Notes  |          |
| 0.4  |  |   |  |                                 |                                 |  |   | *  |          |
| 4-13   | 2.5-1 5/4  | 97                                      | 101251c  | 2                               | C                               | M  |   | Rield capacity - No  | eer      |
|  | 7.5.1  | 1                                       | 2.545/1  | 1                               | D                               | PL   |   | ALD TO CONTINUE OF THE   |          |
| 13-17  | 2.5-1 5/4  | = -                                     | 2.71.211   |                                 |                                 | 1 - 1 -  |   | Scasonal frost. la   |          |
| 13 1   | 2.3(71   |   |  |                                 |                                 |  |   | 2000000 4 1024 16  | ررد      |
| 17-24  | 2.545/4  | 100                                     |  |                                 |                                 |  |   | Talik material   | 10.      |
| 24-25+   |  | 100                                     | *  |                                 |                                 |  |   | dry-non-frozen   | _        |
|  | oncentration, D=Dep  |   | M=Reduced Matrix   | CS-Cov                          | ered or Co:                     | ated Sand G  | rains <sup>2</sup> l ocatio   | n: PL=Pore Lining, M=Matrix.   |          |
|  | IL INDICATORS  | iotion, rui                             | i–r toddoed ividitix,  | 00=001                          | CICG OF COL                     | alou oanu o  |   | S FOR PROBLEMATIC HYDRIC   | SOI      |
| The second   | listel (A1) _ N  |   | Alaska Gleye   | d (A12)                         | A )                             |  |   | Change (TA4) <sup>4</sup>  | 301      |
|  |  | -                                       |  |                                 |                                 |  |   |  |          |
|  | don (A2) _ 시   |   | Alaska Redo  |                                 |                                 |  |   | e Swales (TA5) <u>\( \)</u>  |          |
| Black Histic   | (A3) <u>N</u>  |   | Alaska Gleye   | d Pores                         | (A15)                           | <u> </u>   |   | x with 2.5Y Hue N  |          |
| Hydrogen St  | ulfide (A4) N  |   |  |                                 |                                 |  | Alaska Gleye  | d without 5Y Hue or Redder Unde  | erlyii   |
| Thick Dark S   | Surface (A12)  |   |  |                                 |                                 |  | Other (Expla  | in in Notes)   |          |
|  |  | etation. o                              | ne primary indicato  | r of wetla                      | and hydrolo                     | gv. and an a   |   | cape position must be present unl  | less     |
| disturbed or   | problematic.   |   | in primary indicate  |                                 | aya.o.o                         | gy, and an a   | ppropriate failed   | cape pooliton made be process and  |          |
| *Give details  | of color change in N<br>ayer (if present): Typ   | lotes.                                  | -  |                                 |                                 |  |   |  |          |
|  |  |   |  |                                 |                                 |  |   |  |          |
|  |  | C                                       |  |                                 |                                 |  |   |  |          |
| Notes:SIS  | Present (Y/N):   |   | slightly s   | +                               | 1. Pe2s                         | of con   | an surf   | ace but are not sate<br>2 days ago. Showers  | 0 × 6,0  |
| Notes: SID   | hlty plastic<br>interiors, N.  | car f                                   |  | Pine.                           |                                 |  |   | ace but are not sat<br>2 days ago. Showers   | 0 × 6,   |
| Notes: SID   | hlty plastic   | car f                                   |  | Pine.                           |                                 |  |   | 2 days ago. Showers  (2 or more required)  | OF<br>Ge |
| Notes: SID   | hlty plastic<br>interiors, N.  | and car f                               |  | sufficien                       | t) S                            |  | Y INDICATORS  |  | 0 °      |
| Notes: Signary Policy P | hlty plastic<br>interiors, N.  | ATORS (a                                | ny one indicator is face Soil Cracks (E  | sufficien                       | t) S                            | SECONDARY<br>Vater-stained<br>eaves (B9)   | Y INDICATORS  | (2 or more required)  Stunted or Stressed Plants (D1)  |          |
| Notes: Signary Policy P | hlty plastic<br>interiors, No<br>BY PRIMARY INDICA<br>er (A1) N  | ATORS (a Su Inu (B7                     | iny one indicator is<br>face Soil Cracks (E  | sufficien<br>36)N               | t) S                            | SECONDARY<br>Vater-stained<br>eaves (B9) _<br>Orainage Patt  | Y INDICATORS  If \( \lambda \)  terns (B10) \( \lambda \right)  cospheres along | (2 or more required)  Stunted or Stressed Plants (D1)  | 2)       |
| HYDROLOG Surface Water 1   | hlty plastic<br>interiors, No.<br>BY PRIMARY INDICA<br>er (A1) N<br>Table (A2) N   | Sur Inu (B7 Sp. Co                      | face Soil Cracks (Endation Visible on Analysis)  | sufficien<br>36) N<br>Aerial Im | t) S                            | SECONDARY Vater-stained eaves (B9) _ Orainage Patt Oxidized Rhiz   | terns (B10) _ \( \) cospheres along (C3) _ \( \)                                | (2 or more required)  Stunted or Stressed Plants (D1) Geomorphic Position (D2)   | 2)       |
| HYDROLOG Surface Wat High Water T Saturation (A  | hlty plastic<br>interiors, No.<br>BY PRIMARY INDICA<br>er (A1) N<br>Table (A2) N   | Sur Inu (B7 Co                          | face Soil Cracks (Endation Visible on Analysis)  | sufficien<br>36) N<br>Aerial Im | t) S V L agery C L P In         | Vater-stained<br>eaves (B9)<br>Orainage Patt<br>Oxidized Rhiz<br>iving Roots (<br>Presence of Fron (C4)      | terns (B10) _ \( \) cospheres along (C3) _ \( \)                                | (2 or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2  Shallow Aquitard (D3)  Microtopographic          | 2)_      |
| HYDROLOG Surface Wat High Water T Saturation (A  | er (A1) N Table (A2) N  (B1) N  Poposits (B2) N  | Sullinu (B7 Co                          | ray one indicator is face Soil Cracks (E ndation Visible on A )  | sufficien<br>36) N<br>Aerial Im | t) S  V L agery C L F III       | Vater-stained<br>eaves (B9)<br>Orainage Patt<br>Oxidized Rhiz<br>iving Roots (<br>Presence of Fron (C4)      | terns (B10) N<br>cospheres along (C3) Reduced                                   | Stunted or Stressed Plants (D1) Geomorphic Position (D2 Shallow Aquitard (D3) Microtopographic Relief (D4)                       | 2)_      |
| HYDROLOG Surface Wat High Water T Saturation (A Water Marks Sediment De  | er (A1) N Table (A2) N  (B1) N  Poposits (B2) N  | Sur Sur Space Co                        | riny one indicator is  face Soil Cracks (E  Indation Visible on A  arsely Vegetated Incave Surface (B8)  If Deposits (B15)  Irrogen Sulfide  | sufficien 36)                   | t) S  V L agery C L F III       | Vater-stained eaves (B9) _ Orainage Patt Oxidized Rhiz iving Roots ( Presence of Fron (C4)                   | terns (B10) N<br>cospheres along (C3) Reduced                                   | Stunted or Stressed Plants (D1) Geomorphic Position (D2 Shallow Aquitard (D3) Microtopographic Relief (D4)                       | 2)_      |
| HYDROLOG Surface Wat High Water T Saturation (A Water Marks Sediment De  | Primary Indication of the property of the prop | Sur Sur Space Co                        | riny one indicator is face Soil Cracks (E Indation Visible on A )  | sufficien 36)                   | t) S  V L agery C L F III       | Vater-stained eaves (B9) _ Orainage Patt Oxidized Rhiz iving Roots ( Presence of Fron (C4)                   | terns (B10) N<br>cospheres along (C3) Reduced                                   | Stunted or Stressed Plants (D1) Geomorphic Position (D2 Shallow Aquitard (D3) Microtopographic Relief (D4)                       | 2)_      |
| HYDROLOG Surface Wat High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits  | EY PRIMARY INDICA  er (A1) N  Table (A2) N  (B1) N  eposits (B2) N  Crust (B4) N  s (B5) N   | Sur | face Soil Cracks (Endation Visible on A)  Narsely Vegetated neave Surface (B8)  If Deposits (B15)  Grogen Sulfide or (C1)  Season ter Table (C2)  The season ter (Explain in Note of the season | sufficien 36)                   | t) S  V L agery C L F III       | Vater-stained eaves (B9) _ Orainage Patt Oxidized Rhiz iving Roots ( Presence of Fron (C4)                   | terns (B10) N<br>cospheres along (C3) Reduced                                   | Stunted or Stressed Plants (D1) Geomorphic Position (D2 Shallow Aquitard (D3) Microtopographic Relief (D4)                       | 2)_      |
| HYDROLOG Surface Wat High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits  | Primary Indication of the property of the prop | Sur | riny one indicator is face Soil Cracks (E Indation Visible on A )  | sufficien 36)                   | t) S                            | Vater-stained eaves (B9) Orainage Patt Oxidized Rhiz iving Roots (Presence of Fron (C4) Salt Deposits lotes: | terns (B10) N<br>cospheres along (C3) N<br>Reduced                              | Stunted or Stressed Plants (D1) Geomorphic Position (D2 Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) | 2)_      |
| HYDROLOG Surface Wat High Water T Saturation (A Water Marks Sediment De Drift Deposite Algal Mat or Iron Deposite Surface Wat  | EY PRIMARY INDICA  er (A1) N  Table (A2) N  (B1) N  eposits (B2) N  Crust (B4) N  s (B5) N   | Sur | face Soil Cracks (Endation Visible on A)  Narsely Vegetated neave Surface (B8)  If Deposits (B15)  Grogen Sulfide or (C1)  Season ter Table (C2)  The season ter (Explain in Note of the season | sufficien 36)                   | t) S                            | Vater-stained eaves (B9) Orainage Patt Oxidized Rhiz iving Roots (Presence of Fron (C4) Salt Deposits lotes: | terns (B10) N<br>cospheres along (C3) Reduced                                   | Stunted or Stressed Plants (D1) Geomorphic Position (D2 Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) | 2)_      |
| HYDROLOG Surface Wat High Water T Saturation (A Water Marks Sediment De Drift Deposite Algal Mat or Iron Deposite Surface Wate Water Table Saturation P  | er (A1) N  Table (A2) N  Exposits (B2) N  Crust (B4) N  Exposit (Y/N): N  Exposit (Y/N): N   | Sur | riny one indicator is  face Soil Cracks (E  Indation Visible on A  I | sufficien 36) J Aerial Im N     | t) S  Agery C  L  F  II  S  Wet | Vater-stained eaves (B9) Orainage Patt Oxidized Rhiz iving Roots (Presence of Fron (C4) Salt Deposits lotes: | terns (B10) N<br>cospheres along (C3) N<br>Reduced                              | Stunted or Stressed Plants (D1) Geomorphic Position (D2 Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) | 2)       |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix   |
|---|
| Primary Vegetation Type (P):       Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved         Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved         Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed   |
| Percent Cover (P):         Tree (>5 dbh, >6m tall)         Sapling (<5 dbh, <6m tall)   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even  |
| Vegetation Density/Dominance (P):         Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%)   |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="25">25% Scattered/Peripheral Cover</a> 26-75% Scattered or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)   |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover   |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)  |
| Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings)  High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
|   |
| SOIL VARIABLES  |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey  |
|   |
| HYDROLOGIC VARIABLES  |
| HYDROLOGIC VARIABLES  Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/Perenn  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet_ Perennial Inlet/No Outlet_ Perennial Inlet/Intermittent Outlet_ Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Outlet_ Perennial Inlet/Perennial Inlet/Pere        |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet_ Perennial Inlet/Perennial Inl                            |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Ou   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Pere  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/In            |
| Inlet/Outlet Class (P): No Inlet/Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermitent Inlet/Intermittent |
| Inlet/Outlet Class (P): No Inlet/Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet   |
| Inlet/Outlet Class (P): No Inlet/OutletNo Inlet/Intermittent OutletIntermittent Inlet/Intermittent OutletPerennial Intermittent Inlet/Intermittent OutletPerennial Intermittent OutletPerennial Intermittent OutletPerennial Intermittent OutletPerennial Intermittent OutletPerennial Interval   |
| Inlet/Outlet Class (P): No Inlet/Outlet   |

Page 4 of 4

### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature ID: W34 LHO(2 Field Target: 15211 For all items not checked, please provide detailed explanation in the notes section of data form. 1. Site Description Site description, site parameters and summary of findings are complete? A detailed site sketch is included in-logbook? 2. Vegetation At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Regulation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed? 3. Soil Soil profile is complete? Appropriate hydric soil indicators are marked? 4. Hydrology Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present? 5. Functions and Values Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland? 6. Field Logbook Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated? 7. Maps

Wetland boundaries have been corrected if necessary?

Maps are initialed and dated?

### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☐ Two photos were taken for each Observation Point (vegetation/site overview)?

Wetland Scientist (print)

Wetland Scientist (print)

Signature / Date

7/21/15

Dryan From

Field Crew Chief (print)

Signature / Date

| SITE DESCRIPTION   |                               | The State of the S |                          | ACT DE LOS         | X III             | 1  |
|--|-------------------------------|--|--------------------------|--------------------|-------------------|--|
| Survey Type: Centerline 🗴 Acces  | ss Road (explain)             | Other (expla   | ain)                     | Field Targ         | et: <u>1520</u> 6 | Map #: い <u>くっと</u> Map Date: <u>らんり</u> |
| Date: 7/21/15  | Project Name & No.:           | Alaska LNG   | Feature Id:              | W84LH013           |                   |  |
| Investigators: Brace Strong  | , Dennifer ,                  | Anders   | july,                    |                    |                   | Team No.: ₩ 84                           |
| State: Alaska  | Region: Alaska                |  | Milepost: と              | Milepost: 413.7    |                   |  |
| Latitude: 65 18 45.27  | itude: 65 18 45.27 Long       |  |                          |                    |                   | Datum: WGS84                             |
| Logbook No.: 02  | Logbook Page No.:             | -3   | Picture No.:             | MEGLHO             | N _ VCC           | LUEN_PIT_PLUG                            |
| SITE PARAMETERS  |                               | 46. Sept   | 17.117 IV.               | THE SALE           | - Room            |  |
| Subregion: Interior Itighlan   | 57                            |  | Landform (hil            | Islope, terrac     | e, hummocks       | s, etc.): Saddle/Footslere               |
| Slope (%): 47 measured   |                               | ¥(   |                          |                    |                   | - lat Hummock-imple                      |
| Pre-mapped Alaska LNG/NWI classifica   |                               | 142  | Evidence of V            | Wildlife Use:      | Beer see          | id, moore sign                           |
| Are climatic/hydrologic conditions on the Yes 🔨 No (if no expl   |                               |  | Аге "М                   |                    | stances" pre      |  |
| Are Vegetation, Soil, or Hyd   | ain in Notes)                 | ly Disturbed?  |                          |                    | lain in Notes)    |  |
| Are Vegetation, Soil, or Hyd   |                               | Problematic?   | No_X                     | (If yes, exp       | olain in Notes    | .)                                       |
| SUMMARY OF FINDINGS  | Sent to National              | W. W.  |                          | Falleri            |                   |  |
| Hydrophytic Vegetation Present? Yes_   | × No                          | ls   | the Sampled A            | Area within a      | Wetland?          | Yes No                                   |
| Hydric Soil Present? Yes_  | No                            | _   w  | etland Type:             | non-we             | tlend             | A 21                                     |
| Wetland Hydrology Present? Yes_  | 4 No                          | — Al   | aska Vegetatio           | n Classification   | on (Viereck):     | 142                                      |
| Notes and Site Sketch: Please include Ecorridor.  Transitional Site with a frost table a and free water due to earlier in the week | + 11.5. No pos<br>heary rains | histic.  | slightly eaction a past. | thixotro<br>to all | ha alph           | ca. Soil is slowly permial               |

| Tree Stratum (Plot sizes: _/ 000 ) | Absolute<br>% Cover | Dominant<br>Species? | Indicator     | Dominance Test workshe     |                        |
|------------------------------------|---------------------|----------------------|---------------|----------------------------|------------------------|
| 2007/2004 New or 48-00000000       | 70 00101            | (Y/N)                | Ottatas       | No. of Dominant Species th |                        |
| 1. Picea Mariana                   | 30%                 | Y                    | Fach          | Total Number of Dominant   |                        |
| 2.                                 |                     | -365                 | in the second | % Dominant Species that a  | Ire OBL, FACW, or FAC: |
| 3.                                 |                     |                      |               |                            |                        |
| 4.                                 |                     |                      |               | Prevalence Index worksh    | eet:                   |
| Total Cover                        | 30                  |                      |               | Total % Cover of:          | Multiply by            |
| 50% of total cover                 | :_15 20             | % of total cov       | rer:(         | OBL species:               | X 1 =                  |
| Sapling/Shrub Stratum ( 25 )       | Absolute            | Dominant             | Indicator     | FACW species: 50           | X 2 = 1(8              |
|                                    | % Cover             | Species?             | Status        | FAC species 31             | X3=73                  |
| 13                                 |                     | (Y/N)                |               | FACU species 6             | X4=24                  |
| 1. Picea Mariana                   | 25%                 | 7                    | Facw          | UPL species                | X 5 =                  |
| 2. Vaccinum uliginosum             | 7/.                 |                      | FOX           | Column Totals: 96          |                        |
| 3. R. ho do den dron goenlandicun  | 3/_                 |                      | Fac           | PI = B/A =                 | JA                     |
| 4. Spirea Stevensin                | 5%                  | 2:                   | FOCU          |                            |                        |
| 5. Vaccinion vitis- idaea          | 3%                  |                      | Foc           |                            |                        |
| 6. to tentos                       |                     |                      |               |                            |                        |
| 7. Rhododondaux toprentosur        | 17                  |                      | Fac W         |                            |                        |
| 8.                                 |                     |                      |               |                            |                        |
| 9.                                 |                     |                      |               |                            |                        |
| Total Cover                        | 44                  |                      |               |                            |                        |
| 50% of total cover                 | : 22 _ 20           | % of total cov       | er: 8 8       |                            |                        |

| Herb Stratum ( 2.5 )                            | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%   |
|---|---------------------|-------------------------------|---------------------|---|
| 1. Equisation selvaticum<br>2. Rubus chamemarus | 37.                 | У                             | Fac<br>Fac IN       | Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  |
| 4. Carex biglowii                               | 6/.                 | 7                             | Fac                 | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  1 Indicators of hydric soil and wetland hydrology must be present unless |
| 5. Ococadon for Learn<br>6.                     | 17-                 |                               | Facil               | disturbed or problematic.   |
| 7.,<br>8.                                       |                     |                               |                     | % Bare Ground % Cover of Wetland Bryophytes   |
| 9.  |                     |                               |                     | Total Cover of Bryophytes % Cover of Water  |
| Total Cover                                     |                     | l<br>% of total cov           | rer: 4.4            | Hydrophytic Vegetation Present (Y/N):  Notes: (If observed, list morphological adaptations below):                                  |
|   |                     |                               |                     | Feather Mose<br>Polathachum gr  |

Oi

| SOIL SOIL PROFILE Depth (inches)  |  |                                     | Date Feature ID  | 110                                    | 13   | Electronia.  | Soil Pit Required (Y/N)  |
|---|--|-------------------------------------|--|--|--|--|--|
| Depth   | E DESCRIPTION: (   | Describe                            | to the depth needed to docum   | ent the inc                            | licator or c   | onfirm the absen   |  |
|   | Matrix   |                                     | Redox Features   |  |  |  |  |
|   | Color (moist)  | %                                   | Color (moist) % T  | ype <sup>1</sup>                       | Loc <sup>2</sup>   | Texture  | Notes  |
| 7-4   | ,  |                                     | · /  | ,                                      |  |  |  |
| 1-5   | 2.5-12,5/1   | (00                                 |  |  |  | MKS.Z  |  |
|   | 10-124/3   | 100                                 |  |  |  | SIL  |  |
|   | 2.5-15/3   | 88                                  | 5-15/1 5   | D                                      | $\sim$   | Loam   | a few fine ice leases  |
|   | 7.01 -1.1  | 100                                 | 10-125/6 7   | C                                      | M  |  | Sticky plastic thirotrop   |
| 1.5-20  | 2.575/3  | 94                                  | 545/1 3  | D                                      | M  | Loan   | a few gravels Soft f   |
|   |  |                                     | 10x5/6 3   |  | M  |  |  |
| Type: C=Cond  | centration, D=Deple  | etion, RM                           | =Reduced Matrix, CS=Covere   | or Coate                               | d Sand Gr  | ains. <sup>2</sup> Location  | n: PL=Pore Lining, M=Matrix.   |
| HYDRIC SOIL   | INDICATORS   |                                     | CYLER SON FEBRUARY   | d so die                               |  | INDICATORS   | FOR PROBLEMATIC HYDRIC SOILS   |
| listosol or Histo   | el (A1) N  |                                     | Alaska Gleyed (A13)  | J                                      |  | Alaska Color   | Change (TA4)⁴ <i>\</i>   |
| Histic Epipedon   | n (A2) _ N   |                                     | Alaska Redox (A14)   | J                                      |  | Alaska Alpine  | Swales (TA5)   |
| Black Histic (A3  | 3)N  |                                     | Alaska Gleyed Pores (A1  | 5) <u>N</u>                            |  | Alaska Redox   | with 2.5Y Hue _\( \square\)  |
| Hydrogen Sulfic   | de (A4) <u>N</u>   |                                     |  |  |  |  | d without 5Y Hue or Redder Underlying  |
| hick Dark Surf  | face (A12)   |                                     |  |  |  | Other (Explain   | n in Notes)  |
|   |  | etation, o                          | ne primary indicator of wetland  | hydrology                              | , and an ar  |  | cape position must be present unless   |
| disturbed or pro  | oblematic.   |                                     |  | , 0,                                   | Administration Comments  |  | The second secon |
| Give details of   | color change in No   | otes.                               | + feelele Depth (inch  | 98). 11                                | _  |  |  |
| he last<br>tree wat   | for days, er over the  | May<br>MAEY                         | contribute to sat  | uratio                                 | 1. No  | to recent  | es. Persistend rain fell ov<br>reaction to alpha alpha<br>rains  |
| HYDROLOGY   | PRIMARY INDICA   | TORS (a                             | ny one indicator is sufficient)  | SEC                                    | CONDARY  | INDICATORS (   | 2 or more required)  |
| Surface Water (   | (A1)   | Sur                                 | face Soil Cracks (B6) <u>л</u>   | War<br>Lea                             | ter-stained<br>ves (B9) _  | N  | Stunted or Stressed Plants (D1)  |
|   |  |                                     |  |  |  |  | riants (DT) _79  |
| ligh Water Tab  | ole (A2)/_   | Inui<br> -   (B7                    | ndation Visible on Aerial Image )  | Dra                                    | inage Patte  | erns (B10) <u>\lambda</u>  |  |
| High Water Tab  |  | - (B7<br>Spa                        |  | Oxid                                   |  | osphereş along   |  |
| Saturation (A3)   | 7  | Spa<br>Cor                          | arsely Vegetated   | Oxid<br>Livid                          | dized Rhize  | ospheres along<br>C3)<br>educed  | Geomorphic Position (D2)   |
|   | 7<br>31) N   | - (B7<br>Spa<br>Cor<br>Mar<br>- Hyc | arsely Vegetated acave Surface (B8)  Deposits (B15)  drogen Sulfide or (C1)  | Oxid<br>Livin<br>Pre<br>Iron           | dized Rhizeng Roots (General Reports of Reposits of Re | cospheres along<br>C3)<br>educed<br>(C5)   | Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)   |
| Saturation (A3) Water Marks (B  | 91)  | Mai Hyc Odc                         | arsely Vegetated ncave Surface (B8)  The Deposits (B15)  Irogen Sulfide  | Oxid<br>Livii<br>Pre<br>Iron<br>Salt   | dized Rhizeng Roots (Casence of Richard (C4)   | educed  (C5) A   | Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)   |
| Saturation (A3) Water Marks (B Sediment Depo Drift Deposits (B                                  | 91)  | Mar<br>Hyc<br>Odd<br>Dry<br>War     | arsely Vegetated acave Surface (B8)  Deposits (B15)  Irogen Sulfide or (C1)  | Oxid<br>Livii<br>Pre<br>Iron<br>Salt   | dized Rhizeng Roots (Casence of Richard (C4)   | educed  (C5) A   | Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  |
| Saturation (A3)  Water Marks (B  Sediment Depo  Drift Deposits (B                               | 91)  | Mar<br>Hyc<br>Odd<br>Dry<br>War     | arsely Vegetated acave Surface (B8)  The Deposits (B15)  Trogen Sulfide ar (C1)  Season ter Table (C2)                             | Oxid<br>Livii<br>Pre<br>Iron<br>Salt   | dized Rhizeng Roots (Casence of Richard (C4)   | educed  (C5) A   | Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)   |
| Saturation (A3) Water Marks (B Sediment Depo Drift Deposits (E Algal Mat or Cru ron Deposits (E | B3) _ N _ ust (B4) _ N   | Mar Hyco Odc Dry Wa Oth             | arsely Vegetated acave Surface (B8)  If Deposits (B15)  Arrogen Sulfide  For (C1)  Season  ter Table (C2)  For (Explain in Notes): | Oxid<br>Livii<br>Pre<br>Iron<br>Salt   | dized Rhizeng Roots (Casence of Richard (C4)   | educed  (C5) A   | Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)   |
| Saturation (A3) Water Marks (B Sediment Depo Drift Deposits (E Algal Mat or Cru                 | 91)  | Mar Hyco Odc Dry Wa Oth             | arsely Vegetated acave Surface (B8)  The Deposits (B15)  Trogen Sulfide ar (C1)  Season ter Table (C2)                             | Oxide Living Present Income Salt Not A | dized Rhizzeng Roots (in sence of Ric (C4)   | educed  (C5) A  control contro | Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)  Ver Massive Loan in the  |
| Saturation (A3) Water Marks (B Sediment Depo Drift Deposits (E Algal Mat or Cru ron Deposits (E | Desits (B2) N Desits (B2) N Desits (B4) N De | Mar Hycoodc Dry War Oth             | arsely Vegetated acave Surface (B8)  If Deposits (B15)  Arrogen Sulfide  For (C1)  Season  ter Table (C2)  For (Explain in Notes): | Oxide Living Present Income Salt Not A | dized Rhizzeng Roots (in sence of Ric (C4)   | educed  (C5) A   | Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)  Ver Massive Loan in the  |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P): Vegetation Lacking       Forested-Deciduous-Needle-leaved       Forested-Deciduous-Broad-leaved         Forested-Evergreen-Needle-leaved       Scrub Shrub-Deciduous-Broad-leaved       Scrub Shrub-Deciduous-Broad-leaved         Scrub Shrub-Evergreen-Broad-leaved       Scrub Shrub-Evergreen-Needle-leaved       Emergent-Non-persistent       Emergent-Persistent   |
| Percent Cover (P):         Tree (>5 dbh, >6m tall)         Sapling (<5 dbh, <6m tall)  |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| Vegetation Density/Dominance (P): Sparse (0-20%)       Low Density (20-40%)       Medium Density (40-60%)       High Density (60-80%)         80%)       Very High Density (80-100%)       —   |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="#">&lt;25% Scattered/Peripheral Cover</a> 26-75% Scattered or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover  |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface)<br>Abundant (>50% of surface)  |
| Vegetative Interspersion (P):       Low (large patches, concentric rings)       Moderate (broken irregular rings)         High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
|  |
| SOIL VARIABLES   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Histosol: Sa |
|  |
| HYDROLOGIC VARIABLES   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial I   |
| Wetland Water Regime (P); Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded  |
| Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)  |
| Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 y |
| Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow   |
| Water pH (P): No surface water         Circumneutral (5.5-7.4)         Alkaline (>7.4)         Acid (<5.5)         pH Reading  |
| Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits<br>Glacial Till/Not Permeable   |
| Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%)   High Gradient (≥2%)   |
| Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring   |
| LANDSCAPE VARIABLES (M)  |
|  |
| Wetland Juxtaposition:       Wetland Isolated       Wetlands within 400m, Not Connected       Only Connected Below         Only Connected Above       Connected Upstream & Downstream       Unknown  |
| Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)   |
| Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized   |
| Size:         Small (<10 acres)         Medium (10-100 acres)         Large (>100 acres)   |

Crew Chief QA/QC check:

GPS Technician QA/QC check

Page 4 of 4

### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

|    | items not checked, please provide detailed explanation in the notes section of data form.   |
|----|---|
|    |   |
| 1. | Site Description  |
|    | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included in logbook?   |
| 2. | Vegetation  |
|    | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?   |
|    | Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed? |
| 3. | Soil  |
|    | Soil profile is complete?  Appropriate hydric soil indicators are marked?   |
| 4. | Hydrology   |
|    | Appropriate hydrology indicators are marked?  Surface water, water table, and saturation depths are recorded if present?  |
| 5. | Functions and Values  |
|    | ➤ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?  |
| 6. | Field Logbook   |
|    | Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?  |
| 7. | Maps  |
|    | Wetland boundaries have been corrected if necessary?  Maps are initiated and dated?   |

#### 8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

☐ Two photos were taken for each Observation Point (vegetation/site overview)?

Welland Scientist (print)

Netland Scientist (print)

X

Signature / Dalle

Field Crew Chief (print)

Signature / Date

| Survey Type: Centerline Access Road (coplain). Other (explain). Pield Target: \$2.9 Map #: N. AMAP Date: \$6/15/15/15/15/15/15/15/15/15/15/15/15/15/   | SITE DESCRIPTION                     |                      |                  | Service State of |                  |                |                           |
|--|--------------------------------------|----------------------|------------------|------------------|------------------|----------------|---------------------------|
| Team No.: W84    State: Alaska   Region: Alaska   Milepost: 4/13.5   Datum: WGS84    Latitude: 65 19 04.27   Longitude: -148 35 15.66   Datum: WGS84    Logbook No.: 02   Logbook Page No.: 03   Picture No.: W84 LHOT4   No.: W84 LHOT4   No.: W85 LHOT4   No.: W8   | Survey Type: Centerline 🔀 Acce       | ss Road (explain)    | Other (expla     | ain)             | Field Targ       | et: 15210      | Map #: AAMap Date:6/15/15 |
| State: Alaska  Region: Alaska  Milepost: 413.5  Longitude: -148 35 15.66  Datum: WGS84  Logbook No.: 62  Logbook Page No.: 03  Picture No.: 24 LHOLY No.: 25 PTT PLUG  SITE PARAMETERS  Subregion: 1-40-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1  | Date: 7/21/15                        | Project Name & No.:  | Alaska LNG       | 60418403         |                  | Feature Id:    | MENTHON                   |
| State: Alaska  Region: Alaska  Latitude: GS 19 04.27  Logbook Page No.: 03  Picture No.: W84LHOL4 WCG VEGS PIT PLUG  SITE PARAMETERS  Subregion: (Atcres I fyndlands Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey Ording.  Milepost: 413.5  Longitude: 148 35 15.66  Datum: WGS84  Longbook No.: 02  Logbook Page No.: 03  Picture No.: W84LHOL4 WCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 WCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 04  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 03  Picture No.: W84LHOL4 VCG VEGS PIT PLUG  Logbook Page No.: 048 PIT Plug  Logbook Pa | Investigators: Branches Stra         | us Dennifer          | Ander            | 300              |                  |                | Team No.: いかし             |
| Logbook No.: 62   Logbook Page No.: 03   Picture No.: W84 [ HOLY NEG NEG PIT PLUG   SITE PARAMETERS   Subregion:   Atcres   High Logs   Landform (hillslope, terrace, hummocks, etc.): Shoulder Slage   Slope (%): 1570   Local relief (concave, convex, none):   Convex   Hummocks, etc.): Shoulder Slage   Pre-mapped Alaska LNG/NWI classification:   Colored   Evidence of Wildlife Use:   None   Convex   Hummocks, etc.): Shoulder Slage   Are climatic/hydrologic conditions on the site typical for this time of year?   Yes No (if no explain in Notes)   None   Notes   None   None   Notes   None   None   Notes   None   None   Notes   None     |                                      |                      |                  |                  | 13.5             |                |                           |
| Logbook No.: 62   Logbook Page No.: 03   Picture No.: W84 [ HOLY NEG NEG PIT PLUG   SITE PARAMETERS   Subregion:   Atcres   High Logs   Landform (hillslope, terrace, hummocks, etc.): Shoulder Slage   Slope (%): 1570   Local relief (concave, convex, none):   Convex   Hummocks, etc.): Shoulder Slage   Pre-mapped Alaska LNG/NWI classification:   Colored   Evidence of Wildlife Use:   None   Convex   Hummocks, etc.): Shoulder Slage   Are climatic/hydrologic conditions on the site typical for this time of year?   Yes No (if no explain in Notes)   None   Notes   None   None   Notes   None   None   Notes   None   None   Notes   None     | Latitude: 65 19 0427                 |                      | Longitude        | :-148 33         | 5 15.66          |                | Datum: WGS84              |
| Subregion: Interior Italians  Landform (hillslope, terrace, hummocks, etc.): Shoulder Slage  Slope (%): 157.  Local relief (concave, convex, none): Convex Italians Concerns C | Logbook No.: 62                      | Logbook Page No.:    |                  |                  |                  |                | G_VEG_PIT_ PLUG           |
| Subregion: Interior Italians  Landform (hillslope, terrace, hummocks, etc.): Shoulder Slage  Slope (%): 157.  Local relief (concave, convex, none): Convex Italians Concerns C | SITE PARAMETERS                      | 45514,7800           |                  |                  |                  | A PROPERTY AND |                           |
| Local relief (concave, convex, none): Convex   Nome  | Subregion: Interior Itinhlan         | 2 2                  |                  | Landform (hil    | Islope, terrac   | e, hummocks    | s, etc.): Shoulder Slope  |
| Pre-mapped Alaska LNG/NWI classification:    C   |                                      |                      |                  |                  |                  |                |                           |
| Are climatic/hydrologic conditions on the site typical for this time of year? YesNo(if no explain in Notes)  | Pre-mapped Alaska LNG/NWI classifica | ation: () ` ( C (    |                  | Evidence of V    | Vildlife Use:    | None .         | observe)                  |
| Are Vegetation, Soil, or Hydrology Significantly Disturbed? No (If yes, explain in Notes)  Are Vegetation, Soil, or Hydrology Naturally Problematic? No (If yes, explain in Notes.)  SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No   Hydric Soil Present? Yes No Wetland Type:  Wetland Hydrology Present? Yes No Alaska Vegetation Classification (Viereck):   C 2  Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor.  Mixtle Forcest. PICMAR and BRITINGO TESTINGO and all PICGA 30-35'  BRITINGO Lawre very offen/sparcetr leaved canagers. Point more of from field.   |                                      |                      |                  | Are "N           | ormal Circum     | stances" pre   | sent:                     |
| Are Vegetation, Soil, or Hydrology Naturally Problematic? No (If yes, explain in Notes.)  SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes No  |                                      |                      |                  |                  | 2.7              |                |                           |
| Hydrophytic Vegetation Present? Yes X No Is the Sampled Area within a Wetland? Yes No X  Hydric Soil Present? Yes No X  Wetland Type:  Wetland Hydrology Present? Yes No X  Alaska Vegetation Classification (Viereck): 1 C 2  Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor.  Mixed Forest, Picman and Britished, Between Canarias, Point More from field  Britished have very offen/sparcety leaved canarias, Point More from field  |                                      |                      |                  |                  |                  |                |                           |
| Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No X  Hydric Soil Present? Yes No X  Wetland Type:  Wetland Hydrology Present? Yes No X  Alaska Vegetation Classification (Viereck): 1 C 2  Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor.  Mixed Forest, Picman and Branco, Bearness, Point More of From Field  Branco Line very open/sparcety leaved canage is, Point More of From Field  |                                      | Glology Ivaturally F | Toblematic!      | 140              | _ (11 yes, ext   | Jan III NOLES  |                           |
| Hydric Soil Present? YesNoX  |                                      | No                   | ls               | the Sampled A    | Area within a    | Wetland?       | Yes No                    |
| Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor.  MIXEL FOREST. PICMAR of BRITIED, BETNED we also tall Picker 30-35'  BRITINGO Line very open/sparcety leaved canopies, Point moved from field   |                                      |                      | w                | etland Type:     | U                |                |                           |
| BRINGO LANE VERY OPEN/Sparcety leaved canopies, Point moves from field   | Wetland Hydrology Present? Yes_      | No                   | — Ala            | aska Vegetation  | n Classification | on (Viereck):  | 102                       |
|  | BRINGO LINE VERY                     | OPEN/Sparcely        | BETNEC<br>Leaved | RETA             | 120 ~            | -25            | 'tall PICGLA 30-35"       |
|  |                                      |                      | 21               |                  |                  |                |                           |

| VEGETATION (use scientific names of plants | )                   |                               |                     |   |
|--|---------------------|-------------------------------|---------------------|---|
| Tree Stratum (Plot sizes: ( )              | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC:  Total Number of Dominant Species Across All Strata: |
| 1. Picea Marjana                           | 26%                 | 4                             | FARW                | % Dominant Species that are OBL, FACW, or FAC: (A   |
| 2. Betula nevalaskana                      | 307.                | 4                             | FACU                | 70 Dominant Species that are ODL, I AOW, OT AO.   |
| 3. Picea glassa                            | 5                   |                               | FACU                |   |
| 4. <i>Ú</i>                                |                     |                               |                     | Prevalence Index worksheet:   |
| Total Cover:                               |                     |                               | ***                 | Total % Cover of: Multiply by:  |
| 50% of total cover:                        | 27,5 20             | % of total cov                | rer:/ (             | OBL species:X 1 =   |
| Sapling/Shrub Stratum ( 2.5 )              | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species: $3 \times X2 = 60$ FAC species $X3 = 269$   |
| 1. Pizea Mariana                           | 10%                 |                               | FACW                | FACU species       4       X 4 = 6         UPL species       X 5 = 6  |
| 2. Betala Acoplastana                      | 2%                  |                               | FACU                | Column Totals: (A) 473 (B)  |
| 3. Vaccinim vitis idas                     | 80/                 | 4                             | FAC                 | PI = B/A = 3.07   |
| 1. Salix scooleriana                       |                     |                               |                     |   |
| 5. 12 hododen dran gran landicum           | 37                  |                               | FAC                 |   |
| 3. Vaccinium ulizinosum                    | T                   |                               |                     |   |
| Picea struca                               | 37                  |                               | FACU                |   |
| 3. Spirmela Stevenili                      | _17                 |                               | FACU                | ,   |
| 9.   |                     |                               |                     |   |
| Total Cover:                               |                     |                               |                     |   |
| 50% of total cover:                        |                     | % of total cov                | er: 20.2            |   |
| /EGETATION (use scientific names of plants |                     |                               |                     |   |
| Herb Stratum ( 2C )                        | Absolute            | Dominant                      | Indicator           | Hydrophytic Vegetation Indicators:  |
| incorporate 2 into                         | % Cover             | Species?<br>(Y/N)             | Status              | Dominance Test is > 50%   |
| 1. Calamagnostis lapponica                 | :37.                | 7                             | FAC                 | Prevalence Index is ≤ 3.0   |
| 2. Symulom anotinum                        | nuga-               | 1                             |                     | Morphological Adaptations <sup>1</sup> (Provide supporting data in Notes)   |
| 3.   |                     |                               |                     | Problematic Hydrophytic Vegetation¹ (Explain)   |
| 4.   |                     |                               |                     | Indicators of hydric soil and wetland hydrology must be present unless  |
| 5.   |                     |                               |                     | disturbed or problematic.   |
| 6.   |                     |                               |                     |   |
| 7.   |                     |                               |                     | % Bare Ground   |
| 8.   |                     |                               |                     | % Cover of Wetland Bryophytes   |
| 9.   |                     |                               |                     | Total Cover of Bryophytes   |
| 10,  |                     |                               |                     | % Cover of Water  |
| Total Cover:                               | 3                   |                               |                     | Hydrophytic Vegetation Present (Y/N):   |
| 50% of total cover:                        |                     | % of total cov                | er: 0. 0            | Notes: (If observed, list morphological adaptations below):   |
|  |                     |                               |                     | present (   |

| COU DECE   | E DECODIFICAL (   |   |   | ID                |  |                    |   |
|--|---|---|---|-------------------|--|--------------------|---|
|  | 4   | Describe  | to the depth needed to do   | cument th         | ne indicator or  | confirm the absenc | e of indicators.)   |
| Depth  | Matrix  | -   | Redox Features  | T                 | Τ .  |                    |   |
| (inches)   | Color (moist)   | %   | Color (moist) %   | Type <sup>1</sup> | Loc <sup>2</sup>   | Texture            | Notes   |
| 0-4  |   | 4   |   |                   | _  |                    |   |
| 4-5  | 10 m 2/1  | 602   |   |                   |  | S.L                |   |
| 5-6  | 2.575/1   | 00  |   |                   |  | 810                |   |
| 6-10   | 10-45/6   | 100   |   |                   |  | SIL                | -5 -  |
| 0-17   | 2.575/4   | (69)  |   |                   |  | SIL                | gravels ~5%   |
| 17-20  | 2.5-1 4/4   | 100   |   | -                 |  | VG5.L              | Pine smurels - shale  |
| 20-24+   |   | ution DNA   | Baland Maria CO C   | 1                 | 2 1 12 14  | CRAVEL             | Broken bedrock  |
|  |   | etion, RM   | =Reduced Matrix, CS=Cov   | ered or (         | Coated Sand C  |                    | PL=Pore Lining, M=Matrix.   |
| ALCOHOLD BY THE MANAGEMENT   | LINDICATORS   | 100   | Selection Besides   |                   | e pair   |                    | FOR PROBLEMATIC HYDRIC SOI  |
| Histosol or Hi   |   |   | Alaska Gleyed (A13)   |                   |  |                    | Change (TA4)4   |
| Histic Epipedo   |   |   | Alaska Redox (A14)  |                   |  |                    | Swales (TA5) 1  |
| Black Histic (/  | A3)N  |   | Alaska Gleyed Pores   | (A15)             | N  |                    | with 2.5Y Hue   |
| Hydrogen Sul   | fide (A4) _ N   |   |   | ×                 |  | Alaska Gleyed      | without 5Y Hue or Redder Underlying   |
| Thick Dark Su  | urface (A12) N  |   |   |                   |  | Other (Explain     | in Notes)   |
| Hydric Soil P  | yer (if present): Type  | e:  | Depth (   | nches):_          | NA   | +                  |   |
| Hydric Soil P  | 1   | e:  | Depth (   | nches):_          | 0 1  |                    |   |
| Hydric Soil P<br>Notes:  | Present (Y/N): _\bullet   | +   | Depth (   |                   |  | Y INDICATORS (2    | or more required)   |
| Hydric Soil P<br>Notes:  | Present (Y/N):  | TORS (ar  | ny one indicator is sufficier<br>ace Soil Cracks (B6)   | t)                |  | d ,                | or more required) Stunted or Stressed Plants (D1)   |
| Hydric Soil P Notes: HYDROLOGY   | Present (Y/N): _\begin{align*} Y PRIMARY INDICA  r (A1) _\begin{align*}   | TORS (ar<br>Surf<br>Inun<br>(B7)  | ny one indicator is sufficier<br>ace Soil Cracks (B6)<br>dation Visible on Aerial Im  | t)                | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Drainage Pa   | d                  | Stunted or Stressed   |
| Hydric Soil P Notes:  HYDROLOGY Surface Wate   | Present (Y/N):\(\frac{1}{2}\)  PRIMARY INDICA  r (A1)\(\frac{1}{2}\)  able (A2)\(\frac{1}{2}\)                      | Surf Inun (B7)  | ny one indicator is sufficier<br>ace Soil Cracks (B6)<br>dation Visible on Aerial Im  | t)                | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Drainage Pa<br>Oxidized Rhi<br>Living Roots                             | tterns (B10)       | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  |
| Hydric Soil P Notes:  HYDROLOGY Surface Wate High Water Ta Saturation (A3  | Present (Y/N): Y PRIMARY INDICATOR  or (A1)  able (A2)  B) N  | TORS (ar<br>Surf<br>Inun<br>(B7)<br>Spa<br>Con<br>Marl                                | oy one indicator is sufficier ace Soil Cracks (B6) dation Visible on Aerial Im rely Vegetated cave Surface (B8) Deposits (B15)                            | t)                | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rhi Living Roots Presence of                                | tterns (B10)       | Stunted or Stressed Plants (D1) Geomorphic Position (D2)  |
| Hydric Soil P Notes:  HYDROLOGY Surface Wate High Water Ta   | Present (Y/N):  | TORS (ar<br>Surf<br>Inun<br>(B7)<br>Spa<br>Con<br>Marl<br>Hyd                         | oy one indicator is sufficier ace Soil Cracks (B6) dation Visible on Aerial Im  | t)                | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rhi Living Roots Presence of Iron (C4) Salt Deposits        | tterns (B10)       | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic                                    |
| Hydric Soil P Notes:  HYDROLOGY Surface Wate High Water Ta Saturation (A3 Water Marks ( Sediment Dep   | Present (Y/N): N  | TORS (ar Surf Inun (B7) Spa Con Marl Hydi Odo Dry-                                    | ace Soil Cracks (B6) dation Visible on Aerial Im sely Vegetated cave Surface (B8) Deposits (B15)  | t)                | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rhi Living Roots Presence of Iron (C4)                      | tterns (B10)       | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)                        |
| Hydric Soil P Notes:  HYDROLOGY Surface Wate High Water Ta Saturation (A3 Water Marks ( Sediment Dep   | Present (Y/N): N  | TORS (ar<br>Surf<br>Inun<br>(B7)<br>Spa<br>Con<br>Marl<br>Hydr<br>Odo<br>Dry-<br>Wate | oy one indicator is sufficier ace Soil Cracks (B6) dation Visible on Aerial Im sely Vegetated cave Surface (B8) Deposits (B15) ogen Sulfide r (C1) Season | t)                | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rhi Living Roots Presence of Iron (C4) Salt Deposits        | tterns (B10)       | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)                        |
| Hydric Soil P Notes:  HYDROLOGY Surface Wate High Water Ta Saturation (A3 Water Marks ( Sediment Dep   | Present (Y/N): N  | TORS (ar<br>Surf<br>Inun<br>(B7)<br>Spa<br>Con<br>Marl<br>Hydr<br>Odo<br>Dry-<br>Wate | ace Soil Cracks (B6) dation Visible on Aerial Im sely Vegetated cave Surface (B8) Deposits (B15) logen Sulfide r (C1) Season er Table (C2)                | t)                | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rhi Living Roots Presence of Iron (C4) Salt Deposits        | tterns (B10)       | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)                        |
| Hydric Soil P Notes:  HYDROLOGY Surface Wate High Water Ta Saturation (A3 Water Marks ( Sediment Dep Drift Deposits Algal Mat or C Iron Deposits | Present (Y/N): N  | Surf Inun (B7) Spa Con Marl Hyd Odo Dry- Wat  | ace Soil Cracks (B6) dation Visible on Aerial Im sely Vegetated cave Surface (B8) Deposits (B15) logen Sulfide r (C1) Season er Table (C2)                | agery             | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rhi Living Roots Presence of Iron (C4) Salt Deposits Notes: | tterns (B10)       | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5) |
| Hydric Soil P Notes:  HYDROLOGY Surface Wate High Water Ta Saturation (A3 Water Marks ( Sediment Dep Drift Deposits Algal Mat or C Iron Deposits | Present (Y/N):N  PRIMARY INDICA  Tr (A1)N  able (A2)N  (B1)N  cosits (B2)N  Crust (B4)N  (B5)N  The Present (Y/N):N | TORS (ar Surf Inun (B7) Spa Con Marl Hydi Odo Dry- Wat                                | oy one indicator is sufficier ace Soil Cracks (B6) dation Visible on Aerial Im  | agery             | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rhi Living Roots Presence of Iron (C4) Salt Deposits Notes: | tterns (B10)       | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5) |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, I  | M= Matrix  |
|--|--|
| Forested-Evergreen-Needle-leaved   | acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-   |
| Percent Cover (P): Tree (>5 dbh, >6m tall)_<br>Dwarf shrub (<0.5m) Tall herb (≥1   | Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Moss-Lichen Floating Submerged   |
| Number of Wetland Types (M):   | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even  |
| Vegetation Density/Dominance (P): Sparse<br>80%) Very High Density (80-100%)   | e (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-<br>)  |
| Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scatter   | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant  | species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none)   | One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): Open Small Scattered Patches   | No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover   |
| Dead Woody Material (P): Low Abundance<br>Abundant (>50% of surface)   | (0-25% of surface) Moderately Abundant (25-50% of surface)   |
| Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers   | e patches, concentric rings) Moderate (broken irregular rings)sed)   |
| HGM Class (P): Slope Flat  | Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
|  |  |
| SOIL VARIABLES   |  |
| Soil Factors (P): Soil Lacking<br>Mineral: Gravelly Mineral: Sandy   | Histosol:FibricHistosol:HemicHistosol: Sapric<br>Mineral: SiltyMineral: Clayey   |
|  |  |
| HYDROLOGIC VARIABLES   |  |
| Inlet/Outlet Class (P): No Inlet/Outlet  | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No  at Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Pe   |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial   | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial                      |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Eviden   | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial                      |
| Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Inlet/Intermittent Inlet/Outlet Perennial Inlet/Outlet Perennial Intermittent Inlet/Intermittent Inlet/In                    | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No   |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial  Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrelief of Wetland Surface (P): Absent  | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial  Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No C Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflood   | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/N   |
| Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet_ Perennial Inlet/Intermittent Outlet_ Perennial Inlet/Intermittent Outlet_ Perennial Inlet/Intermittent Outlet_ Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Intermittent Intermittent Outlet Intermittent Intermittent Outlet Intermittent Intermittent Outlet Intermittent Intermitt        | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Inlet In | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Per                           |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Inlet In | th Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Per  |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Inlet/Intermittent Outlet Inlet/Intermittent Intervity Intervity Intervity Intervity Intervity Intervity Intervity Index Outlet Inlet/Intervity Index Outlet Inlet/Intervity Index Outlet Inlet/Intervity Index Outlet  | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inl                                |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Wetland Water Regime (P): Drier: Sea Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absen Frequency of Overbank Flooding (P): No Creater Interval >5 yrs Degree of Outlet Restriction (P): No Outflot Water pH (P): No surface water Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Set  LANDSCAPE VARIABLES (M) Wetland Juxtaposition: Wetland Isolate  | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Out |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet Inle                                | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Inlet/No Out |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet Inle                                | Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Out |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Intermittently Exposed,  Evidence of Sedimentation (P): Divided Created  Microrelief of Wetland Surface (P): Absent Prequency of Overbank Flooding (P): No Condition Interval >5 yrs Perennial Interval >   | Intermittent Inter |

Crew Chief QA/QC check:

QA/QC check: 2

### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Feature | 1D: W84LH014 Field Target: 15210 Date: 7/21/15  |
|---------|---|
|         | tems not checked, please provide detailed explanation in the notes section of data form.                                |
|         |   |
| 1.      | Site Description  |
| ••      |   |
|         | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included in legbook? |
| 2.      | Vegetation  |
|         | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?                     |
|         | Vegetation names are entered legibly for all strata present?  |
|         | Cover calculations are complete and correct?  All dominant species have been determined and recorded per strata?        |
|         | Indicator status is correct for each species?   |
|         | Dominance Test and Prevalence Index have been completed?  |
| 3.      | Soil  |
| ,       | Soil profile is complete? Appropriate hydric soil indicators are marked?  |
| 4.      | Hydrology   |
|         | Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present? |
| 5.      | Functions and Values  |
| *       | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?                          |
| 6.      | Field Logbook   |
|         | Notes have been recorded at each site, including general description, sketch, and                                       |
|         | accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?                      |
| 7.      | Марѕ  |
|         | ☑ Wetland boundaries have been corrected if necessary? ☒ Maps are initialed and dated?                                  |

### 8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

☐ Two photos were taken for each Observation Point (vegetation/site overview)?

| X Jenni fer Anderson      | X         | 2      | Dom | 7/24 | 115 |
|---------------------------|-----------|--------|-----|------|-----|
| Wetland Scientist (print) | Signature | / Date |     |      |     |

X Bream Strong X Bully 7/21/15
Field Crew Chief (print) Signature / Date

| SITE DESCRIPTION  |   |             | A TOTAL STATE OF  |                  | W. 1750.         |                            |
|---|---|-------------|-------------------|------------------|------------------|----------------------------|
| Survey Type: Centerline_X_ Acces  | ss Road (explain)   | Other (ex   | plain)            | Field Targe      | et: <u>15207</u> | Map #: 46 Map Date: 6/18/5 |
| Date: 7/22 / 15   | Project Name & No.:   | Alaska Li   | IG 60418403       |                  | Feature Id:      | : M84 LH015                |
| Investigators: Brean Stone  | Jan. for  | Ande        | 1500              |                  |                  | Team No.: WS4              |
| State: Alaska   | Region: Alaska  |             | Milepost: 4       | 109.55           |                  | 727.                       |
| Latitude: 65 21 55.67   |   | Longitu     | de:_148 3         | 6 07.9           | <u> </u>         | Datum: WGS84               |
| Logbook No.: 62   | Logbook Page No.:   | o-\<br>-    | Picture No.:      | WEULHE           | 15_VE            | G-VEG-PIT-PLUG             |
| SITE PARAMETERS   |   | A. PAY      |                   |                  | in the state of  | WHO ENVENIENCE IN          |
| Subregion: Interior Highlan   | 2s  |             | Landform (hil     | Islope, terrace  | e, hummock       | s, etc.): Backglore        |
| Slope (%): 15 measures As   |   |             | Local relief (c   | concave, conve   | ex, none):⊴      | lightly convex             |
| Pre-mapped Alaska LNG/NWI classifica  |   |             |                   |                  |                  | - Squirel middley          |
| Are climatic/hydrologic conditions on the Yes No (if no expl  | e site typical for this time ain in Notes) $\gamma_{c_{1}}$ | of year?    | Are "No           | ormal Circums    | stances" pre     | sent:<br>plain in Notes.)  |
| Are Vegetation, Soil, or Hyd  | drologySignificant  | ly Disturbe | d? No <u>×</u>    | _(If yes, expla  | ain in Notes     | )                          |
| Are Vegetation, Soil, or Hyd  | drology Naturally F   | Problematio | ? No <u>×</u>     | _ (If yes, expla | ain in Notes     | 5.)                        |
| SUMMARY OF FINDINGS   |   |             |                   |                  |                  | 12 等制 不动物的 法处              |
| Hydrophytic Vegetation Present? Yes_  | No  | _           | s the Sampled A   | Area within a    | Wetland?         | Yes No                     |
| Hydric Soil Present? Yes_   | NoX   |             | Wetland Type: (   | )                |                  | 1.00                       |
| Wetland Hydrology Present? Yes_   | NoX   | _           | Alaska Vegetatior | n Classification | n (Viereck):     | 1 A 2                      |
| Notes and Site Sketch: Please include I corridor. PICMAR Forest Say longs co-January openings between col | - fairly Lens<br>Some large                                 | Se Pic      | MAR with          | n trees          | 20-40<br>en25    | of Pichan mills            |

| VEGETATION (use scientific names of plants      |                     | 5 (1) F (2)                   |                     |   | STATE OF THE PARTY |  |  |  |
|---|---------------------|-------------------------------|---------------------|---|--|--|--|--|
| VEGETATION (use scientific flames of plants     | denema zna          |                               |                     |   |  |  |  |  |
| Tree Stratum (Plot sizes: 100 )                 | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FACT Total Number of Dominant Species Agrees All Strates. |  |  |  |  |
| 1. Picea Mariana                                | 55%                 | Y                             | FORN                | Total Number of Dominant Species Across All Strata: 4 % Dominant Species that are OBL, FACW, or FAC: 15%                            |  |  |  |  |
| 1. Picea mariana<br>2. Betula resalaskana<br>3. | 3/                  | 7                             | Facu                | 76 Dominant Species that ai   | TE OBL, FACW, OF FAC(A   |  |  |  |
| 3.  |                     |                               |                     |   |  |  |  |  |
| 4.  |                     |                               |                     | Prevalence Index workshe  | eet:   |  |  |  |
| Total Cover:                                    | 58                  |                               |                     | Total % Cover of:   | Multiply by:   |  |  |  |
| 50% of total cover:                             | 29 20               | % of total cov                | er: <u>  </u>  ,    | OBL species:  | X 1 =  |  |  |  |
| Sapling/Shrub Stratum ( 26 )                    | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status | FACW species: 75  FAC species 20  |  |  |  |  |
|   |                     | (Y/N)                         |                     | FACU species 13   |  |  |  |  |
| 1. Picca Mariana                                | 20%                 | У                             | FarW                | UPL species   |  |  |  |  |
| 2. Rho Zaden Iron grown landicum                | 57.                 |                               | Fac                 | Column Totals: 10 %   | (A) 2102 (B)   |  |  |  |
| 3. Vaccinium vitis - idaca                      | 5%                  |                               | Far.                | PI = B/A = 2.42   |  |  |  |  |
| 4. R. buck trist                                | 21.                 |                               | Fac                 |   |  |  |  |  |
| 5. Vaccinium obserosom                          | 11/                 |                               | Fac                 |   |  |  |  |  |
| 6. Pasa accoleris                               | 17-                 |                               | Facu                |   |  |  |  |  |
| 7. Spirea stevensil                             | 21                  |                               | Fac 11              |   |  |  |  |  |
| 8. Linnala prealis                              | T                   |                               |                     |   |  |  |  |  |
| 9.  |                     |                               |                     |   |  |  |  |  |
| Total Cover:                                    | 36                  |                               |                     |   |  |  |  |  |
| 50% of total cover:                             | 18 20               | % of total cov                | er:_7.2_            |   |  |  |  |  |
| VEGETATION (use scientific names of plants)     |                     |                               |                     |   |  |  |  |  |

| VEGETATION (use scientific names of plant |          | ASSESSMENT OF THE                     |           |   |
|---|----------|---------------------------------------|-----------|---|
| Herb Stratum ( 26 )                       | Absolute | Dominant                              | Indicator | Hydrophytic Vegetation Indicators:  |
|   | % Cover  | Species?<br>(Y/N)                     | Status    | Dominance Test is > 50%   |
| 1. Cornus canadansis                      | 27       | (17.17)                               | Facul     | Prevalence Index is ≤ 3.0   |
| 2. Ceocasion lividicim                    | 5%       | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | Faell     | Morphological Adaptations <sup>1</sup> (Provide supporting data in Notes)           |
| 3. Calamagostis tapponica                 | 7%       | <b>Y</b>                              | Fac.      | Problematic Hydrophytic Vegetation¹ (Explain)                                       |
| 4.  |          |                                       |           | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless |
| 5.  |          |                                       |           | disturbed or problematic.   |
| 6.  |          | e" I                                  |           |   |
| 7.  |          |                                       |           | % Bare Ground   |
| 8.  |          |                                       |           | % Cover of Wetland Bryophytes   |
| 9.  | 3        |                                       |           | Total Cover of Bryophytes   |
| 10.                                       |          |                                       |           | % Cover of Water  |
| Total Cover: 14                           |          |                                       |           | Notes: (If observed, list morphological adaptations below):                         |
|   |          |                                       |           | Feather Mse   |

|   |   | 11 000 - 20                                     | Date Feature   |                   |   | THE RESERVE   | Soil Pit Requi  | V/////            |  |
|---|---|---|--|-------------------|---|---|---|-------------------|--|
| SOIL PROF   | ILE DESCRIPTION:  | (Describe                                       | to the depth needed to do  | cument th         | e indicator or  | confirm the absen   | ce of indicators.)  |                   |  |
| Depth   | Matrix  |   | Redox Features   |                   |   |   | (*)   |                   |  |
| (inches)  | Color (moist)   | %   | Color (moist) %  | Type <sup>1</sup> | Loc <sup>2</sup>  | Texture   | Notes   |                   |  |
| 0-6   |   |   |  |                   |   |   |   |                   |  |
| 6-8   | 10-12 3/2   | (00)  |  |                   |   | SiL   |   |                   |  |
| 8-11  | 25-14/1   | ගෙ  |  |                   |   | 5.6   |   |                   |  |
| 1-19  | 3-16/3  | 601   |  |                   |   | Loam  | SBIC Structure  | Pravel            |  |
| 19-27   | 515/2   | 600   |  |                   |   | Loam  | Bravel ~ 5%   |                   |  |
|   |   |   |  |                   |   |   |   |                   |  |
| A   |   |   |  |                   |   |   |   |                   |  |
|   |   | etion, RM                                       | =Reduced Matrix, CS=Co   | vered or C        | Coated Sand G   | Grains. <sup>2</sup> Location   | n: PL=Pore Lining, M=Mat  | trix.             |  |
| HYDRIC SO   | IL INDICATORS   |   |  | 0.000             |   | INDICATORS  | FOR PROBLEMATIC HY  | YDRIC SOIL        |  |
| Histosol or H   | fistel (A1)   |   | Alaska Gleyed (A13)  | _ N               |   | Alaska Color  | Change (TA4) <sup>4</sup>   |                   |  |
| Histic Epiped   | don (A2)  |   | Alaska Redox (A14)   | N                 | Alaska Alpine Swales (TA5)  |   |   |                   |  |
| Black Histic (  | (A3)  | 5   | Alaska Gleyed Pores  | s (A15)           | 5) N Alaska Redox with 2.5Y Hue N   |   |   |                   |  |
| Hydrogen Su   | ulfide (A4)   |   | - A  |                   | Alaska Gleyed without 5Y Hue or Redder Underly  |   |   | er Underlyin      |  |
|   | Surface (A12)   |   |  |                   | Layer_ N  |   |   |                   |  |
|   | . ,   | ntation or                                      | o primon indicator of  |                   |   | Other (Explain  | in Notes) []<br>ape position must be pres   |                   |  |
|   | Present (Y/N):  | N   | 0". No saturation  | (inches):_        |   | Pertures  |   |                   |  |
|   | Present (Y/N):  | N   |  |                   |   | Pendures  |   | 2                 |  |
| Notes: 🔎  | Present (Y/N):  | 1v 3  |  | V Na              | rezox l   | *   | ? or more required)   | BOEVE             |  |
| Notes: ,,,  | Present (Y/N):  | TORS (ar  | 0". No saturation  | nt)               | rezox l   | Y INDICATORS (2   | e or more required) Stunted or Stresser Plants (D1)   | ed                |  |
| Notes: ,,,  HYDROLOG  Surface Wate  | Present (Y/N):  | Surl<br>Surl<br>(B7)                            | ny one indicator is sufficient ace Soil Cracks (B6)  | nt)               | SECONDAR' Water-stained Leaves (B9) Drainage Pat  | Y INDICATORS (2   | Stunted or Stresse<br>Plants (D1)   |                   |  |
| Notes: ,,  HYDROLOG  Surface Water T  | Present (Y/N):  Frost Imple  BY PRIMARY INDICA  er (A1)  Fable (A2)   | Surfiner (B7) Spa                               | ny one indicator is sufficient ace Soil Cracks (B6)  | nt)               | SECONDAR Water-stained Leaves (B9) Drainage Pat Oxidized Rhiz Living Roots  | Y INDICATORS (2  d  terns (B10) _ \( \)  zospheres along (C3) _ \( \) | Stunted or Stresser Plants (D1) Geomorphic Posit Shallow Aquitard   | ion (D2) <i>f</i> |  |
| HYDROLOG Surface Water High Water T Saturation (A   | Present (Y/N):  Frost de ble  Y PRIMARY INDICA  er (A1)  Table (A2)  A3)  | Surface (B7) Spa Con Mar                        | ny one indicator is sufficient ace Soil Cracks (B6) Addition Visible on Aerial Impresely Vegetated cave Surface (B8) ADDeposits (B15)  | nt)               | SECONDAR' Water-stained Leaves (B9) Drainage Pat Oxidized Rhiz  | Y INDICATORS (2 d terns (B10)   | Stunted or Stresse<br>Plants (D1)<br>Geomorphic Posit   | ion (D2) <i>f</i> |  |
| HYDROLOG Surface Water High Water T Saturation (A   | Present (Y/N):  Frost de ble  Y PRIMARY INDICA  er (A1)  Table (A2)  A3)  | Surface (B7) Space (Con Marie Hydo Oddo         | ny one indicator is sufficient ace Soil Cracks (B6) Adation Visible on Aerial Increase Surface (B8) Deposits (B15) Nogen Sulfider (C1) N   | nt)               | SECONDAR  Water-stained Leaves (B9)  Drainage Pat  Oxidized Rhiz Living Roots  Presence of Iron (C4)  Salt Deposits   | Y INDICATORS (2 d tterns (B10) zospheres along (C3) Reduced           | Stunted or Stresser Plants (D1) Geomorphic Posit Shallow Aquitard (   | ion (D2) <i>1</i> |  |
| HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De   | Present (Y/N):  Fresh In bloc  BY PRIMARY INDICA  er (A1)  Fable (A2)  (B1)  posits (B2)  | Surface (B7) Spa Con Mar Hyd Oddo Dry-          | ny one indicator is sufficient ace Soil Cracks (B6) Adation Visible on Aerial Impresely Vegetated cave Surface (B8) Deposits (B15)   | nt)               | SECONDAR' Water-stained Leaves (B9) Drainage Pat Oxidized Rhiz Living Roots Presence of F Iron (C4)                   | Y INDICATORS (2 d tterns (B10) zospheres along (C3) Reduced           | Stunted or Stresser Plants (D1) Geomorphic Posit Shallow Aquitard Microtopographic Relief (D4)                      | ion (D2) <i>1</i> |  |
| HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits                              | Present (Y/N):  Fresh In bloc  BY PRIMARY INDICA  er (A1)  Fable (A2)  (B1)  posits (B2)  | Surface (B7) Space Con Mari Hydodo Dry-Wat      | ny one indicator is sufficient ace Soil Cracks (B6) Addition Visible on Aerial Interest (B8) Addition Visible on Aerial | nt)               | SECONDAR  Water-stained Leaves (B9)  Drainage Pat  Oxidized Rhiz Living Roots  Presence of Iron (C4)  Salt Deposits   | Y INDICATORS (2 d tterns (B10) zospheres along (C3) Reduced           | Stunted or Stresser Plants (D1) Geomorphic Posit Shallow Aquitard Microtopographic Relief (D4)                      | ion (D2) <i>1</i> |  |
| HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits                              | Present (Y/N):  Fresh this control of the present (Y/N):  BY PRIMARY INDICA  er (A1)  Fable (A2)  (B1)  posits (B2)  Crust (B4)  Crust (B4) | Surface (B7) Space Con Mari Hydodo Dry-Wat      | ny one indicator is sufficient ace Soil Cracks (B6) Addition Visible on Aerial Impressly Vegetated cave Surface (B8) Appropriate (B15) Appropriate (C1) Appropriate (C1) Appropriate (C2) Appropr | nt)               | SECONDAR  Water-stained Leaves (B9)  Drainage Pat  Oxidized Rhiz Living Roots  Presence of Iron (C4)  Salt Deposits   | Y INDICATORS (2 d tterns (B10) zospheres along (C3) Reduced           | Stunted or Stresser Plants (D1) Geomorphic Posit Shallow Aquitard Microtopographic Relief (D4)                      | ion (D2) <i>1</i> |  |
| HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or G               | Present (Y/N):  Fresh this control of the present (Y/N):  BY PRIMARY INDICA  er (A1)  Fable (A2)  (B1)  posits (B2)  Crust (B4)  Crust (B4) | Surfice (B7) Spa Con Mari Hyd Odo Dry- Wat Othe | ny one indicator is sufficient ace Soil Cracks (B6) Addition Visible on Aerial Impressly Vegetated cave Surface (B8) Appropriate (B15) Appropriate (C1) Appropriate (C1) Appropriate (C2) Appropr | nt)               | SECONDAR Water-stainer Leaves (B9) Drainage Pat Oxidized Rhiz Living Roots Presence of Iron (C4) Salt Deposits Notes: | terns (B10) _ N_zospheres along (C3) _ N                              | Stunted or Stresser Plants (D1)  Geomorphic Posit  Shallow Aquitard (Microtopographic Relief (D4)  FAC-Neutral Test | ion (D2) <i>1</i> |  |
| HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or G Iron Deposits | Present (Y/N):  Frost   | Surfice (B7) Spa Con Mari Hyd Odo Dry-Wat       | ny one indicator is sufficient ace Soil Cracks (B6) dation Visible on Aerial Impresely Vegetated cave Surface (B8) Deposits (B15) fogen Sulfide r (C1) Season for Table (C2) for (Explain in Notes):   | nt)               | SECONDAR Water-stainer Leaves (B9) Drainage Pat Oxidized Rhiz Living Roots Presence of Iron (C4) Salt Deposits Notes: | Y INDICATORS (2 d tterns (B10) zospheres along (C3) Reduced           | Stunted or Stresser Plants (D1)  Geomorphic Posit  Shallow Aquitard (Microtopographic Relief (D4)  FAC-Neutral Test | ion (D2) <i>1</i> |  |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, I  | ∕l= Matrix   |
|--|--|
| Forested-Evergreen-Needle-leaved   | acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-   |
| Percent Cover (P): Tree (>5 dbh, >6m tall)_<br>Dwarf shrub (<0.5m) Tall herb (≥1   | Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Moss-Lichen Floating Submerged   |
| Number of Wetland Types (M):   | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even  |
| Vegetation Density/Dominance (P): Sparse<br>80%) Very High Density (80-100%)   | (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-   |
| Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered   | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant  | species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) _   | One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): Open Small Scattered Patches_  | No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover   |
| Dead Woody Material (P): Low Abundance<br>Abundant (>50% of surface)   | (0-25% of surface) Moderately Abundant (25-50% of surface)   |
| Vegetative Interspersion (P): Low (large<br>High (small groupings, diverse and interspers  | patches, concentric rings) Moderate (broken irregular rings)   |
| HGM Class (P): Slope Flat  | Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
|  |  |
| SOIL VARIABLES   | Histosol:FibricHistosol:HemicHistosol: Sapric  |
| Soil Factors (P): Soil Lacking<br>Mineral: Gravelly Mineral: Sandy   |  |
| HYDROLOGIC VARIABLES   |  |
|  | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No   |
|  | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial   |
| Wetland Water Regime (P): Drier: Seas<br>Wet: Perm. Flooded, Intermittently Exposed,   | sonally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded  |
| Evidence of Sedimentation (P): No Evider<br>Created  | ce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment   |
| Microrelief of Wetland Surface (P): Absent   | Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)   |
| Frequency of Overbank Flooding (P): No C<br>Return Interval >5 yrs   | Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs  |
| Degree of Outlet Restriction (P): No Outfloo   | W Restricted Outflow Unrestricted Outflow  |
| The company of the control of the co | Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading   |
| Glacial Till/Not Permeable   | (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits  |
| Basin Topographic Gradient (M): Low<br>Evidence of Seeps and Springs (P): No Se  | Gradient (<2%) High Gradient (≥2%) eps or Springs Seeps Observed Intermittent Spring Perennial Spring  |
| The section of the se | aspects of the second of the s |
| LANDSCAPE VARIABLES (M)  | A THE RESERVE OF THE PROPERTY  |
| Wetland Juxtaposition: Wetland Isolat Only Connected Above Connected   | ed Wetlands within 400m, Not Connected Only Connected Below dd Upstream & Downstream Unknown   |
| Wetland Land Use: High Intensity (i.e.,  | ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)   |
|  |  |
| Watershed Land Use: 0-5% Rural   | 5-25% Urbanized 25-50% Urbanized >50% Urbanized  |

1

Page 4 of 4

#### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature ID: W84CHOIS Field Target: 152 For all items not checked, please provide detailed explanation in the notes section of data form 1. Site Description Site description, site parameters and summary of findings are complete?

A detailed site sketch is included in logbook? 2. Vegetation At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed? 3. Soil Soil profile is complete? Appropriate hydric soil indicators are marked? 4. Hydrology Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present? 5. Functions and Values Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland? 6. Field Logbook Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated? 7. Maps Wetland boundaries have been corrected if necessary?

Maps are initialed and dated?

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☐ Two photos were taken for each Observation Point (vegetation/site overview)?

| X Jennifer                | Anderson X Op Ols | 7/22/15                               |
|---------------------------|-------------------|---------------------------------------|
| Wetland Scientist (print) | Signature / Date  | , , , , , , , , , , , , , , , , , , , |

1 Srean Strong

Field Crew Chief (print)

Signature / Date

| SITE DESCRIPTION   |  |              |                         |                | The Contract       |   |
|--|--|--------------|-------------------------|----------------|--------------------|---|
| Survey Type: Centerline Acce   | ess Road (explain)                               | Other (expl  | ain)                    | Field Tare     | jet: <u>15 208</u> | Map #: 45 Map Date: 6/18/15   |
| Date: 7/22/15  | Project Name & No.:                              | Alaska LNC   | 60418403                | -              | Feature Id:        | W84LH016  |
| Investigators: BS, JA  | -  |              |                         |                |                    | Team No.: W84   |
| State: Alaska  | Region: Alaska                                   | 4            | Milepost: <             | 109.3          |                    |   |
| Latitude: 65° 22.06.43   | 12   | Longitude    | :148° 36'               | 32.78          |                    | Datum: WGS84  |
| Logbook No.: 02  | Logbook Page No.: ¿                              |              |                         |                |                    | tiPlug AS   |
| SITE PARAMETERS  |  |              |                         | No. 1 Page     | 5419E (1)          |   |
| Subregion: Soul central  |  |              | Landform (hil           | Islope, terra  | ce, hummocks       | s, etc.): 1, terflure   |
| Slope (%): 5% West as p  | cot  | 41           | Local relief (c         | oncave, cor    | vex, none):_S      | lightly convex, hummocky  |
| Pre-mapped Alaska LNG/NWI classific  |  | 1A2          | Evidence of V           | Vildlife Use:  | Vone of            | escued  |
| Are climatic/hydrologic conditions on the  | e site typical for this time                     | of year?     |                         | ormal Circun   | nstances" pre      | sent:   |
| Are Vegetation, Soil, or Hy  |  |              |                         |                | lain in Notes      | olain in Notes.)  |
| Are Vegetation, Soil, or Hy  |  | Problematic? |                         |                | olain in Notes     |   |
| SUMMARY OF FINDINGS  | rationally i                                     | A Section    | The little of           | _ (II yee, ex  | Table 1            |   |
| Hydrophytic Vegetation Present? Yes_   | × No   | Is           | the Sampled A           | Area within    | a Wetland?         | Yes No  |
| Hydric Soil Present? Yes_  | NoX_   | w            | etland Type: (          | ĵ -            |                    | 9   |
| Wetland Hydrology Present? Yes_  | No   | — А          | aska Vegetatior         | n Classificati | on (Viereck):      | 142   |
| Notes and Site Sketch: Please include corridor. Slightly convex is 15-3" DBH. A bit of la clomps. Carpet of feet CORCAN, Dry Summer. | nterflue (ac<br>vering of PIEM<br>ther moss, Spa | ross sle     | terstory                | sc star        | is of to           | ichare mostly 15-25" +<br>enings between dense<br>never, callat, wear |
| PFOUL/SSIB PSSILEMIR L. MCZ, MAS Slope Ham U   | IA3 LHOID C<br>PASSIA<br>PSSIA<br>PSSIA<br>PSSIA | +            | 1 / 1 / 1 / 2 HO U; 1 A |                | PSS4/              |   |

| VEGETATION (use scientific names of plants | )                   |                               |                     |   |
|--|---------------------|-------------------------------|---------------------|---|
| Tree Stratum (Plot sizes:(o o)             | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: _3 (A) |
| 1. Picea mariama                           | 25/                 | Y                             | Fae W               | Total Number of Dominant Species Across All Strata: 4 (B)                             |
| 2.   |                     |                               | -                   | % Dominant Species that are OBL, FACW, or FAC:(A/B)                                   |
| 3.   |                     |                               |                     |   |
| 4.   |                     |                               |                     | Prevalence Index worksheet:   |
| Total Cover:<br>50% of total cover:        |                     | % of total cov                | ver: 5              | Total % Cover of: Multiply by:  OBL species: X 1 =                                    |
| Sapling/Shrub Stratum ( 26 )               | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species: 55  |
| 1. Vaccioium vitis Hala                    | 7/.                 |                               | Fac                 | UPL speciesX 5 =  |
| 2. Photodorde un general de la cum         | 5%                  |                               | Fac                 | Column Totals: (A) (B)  |
| 3 Rasa orientaria                          | 5%                  |                               | For U               | PI = B/A = _ Q . 47 .   |
| 4. linnaca borralis                        | -I-                 |                               | Fac U.              |   |
| 5. Alous virdes frutuosa                   | 11/2                |                               | For                 |   |
| 6. Vaccinium ilginosum                     | 7                   |                               | Fac                 | *   |
| Picea mariaña                              | 30%                 | 7                             | FACIN               |   |
| 8. Spaulum apportmum                       | T                   |                               | PAC                 |   |
|  | 7150                |                               |                     |   |
| Total Cover:                               |                     |                               | 01.                 |   |
| 50% of total cover:                        |                     | of total cov                  | er:                 |   |
| VEGETATION (use scientific names of plants |                     |                               |                     |   |
| Herb Stratum ( 26 )                        | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Provious Index is < 3.0  |
| 1 Cornus cana depisis                      | 21.                 |                               | Fact                | Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in     |
| 2. Calarmanchis Jamina                     | 7:12                | 7                             | Face                | Notes)  |
| 3. George Ron Ludium                       | 3                   | Ý                             | Facul               | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                             |
| 4 are togros tos latifilia                 | 7                   |                               | Fachl               | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless   |
| 5. Equisedum arreinse                      | T                   |                               | Fac                 | disturbed or problematic.   |
| 6. Egusetum sylvaticum                     | T                   |                               | Fac                 |   |
| 7. Equication praterie                     | T                   |                               | FAC                 | % Bare Ground   |
| 8.   |                     |                               |                     | % Cover of Wetland Bryophytes   |
| 9.   |                     |                               |                     | Total Cover of Bryophytes   |
| 10.  |                     |                               |                     | Cover of Water  |
| Total Cover:                               | 12                  |                               |                     | Hydrophytic Vegetation Present (Y/N):   |
| 50% of total cover:                        | (e) 20°             | % of total cov                | er: 2, 4            | Notes: (If observed, list morphological adaptations below):                           |

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|  |   |             | 7/22/15               |                    | W841              | 4016         |  | N  |  |  |
|--|---|-------------|-----------------------|--------------------|-------------------|--------------|--|--|--|--|
| SOIL   |   |             | 7                     | ature l            | D                 | _ 2          |  | Soil Pit Required (Y/N)                                      |  |  |
| SOIL PROFIL  | E DESCRIPTION: (  | (Describe t | to the depth needed   | to doc             | ument the         | indicator co | onfirm the abser                                     | nce of indicators.)  |  |  |
| Depth  | Matrix  |             | Redox Features        |                    |                   |              |  |  |  |  |
| (inches)   | Color (moist)   | %           | Color (moist)         | %                  | Type <sup>1</sup> | Lake.        | Texture  | Notes  |  |  |
| 0-9  |   |             |                       |                    |                   |              |  |  |  |  |
| 9-11   | 10-12 2/2   | 100         |                       |                    |                   |              |  |  |  |  |
| 11-16  | 2.5-14/2  | 94          | 7,5424/6              | 6                  | C                 | M            | Loam   | Plastic-Sight, Moist not                                     |  |  |
|  |   |             |                       |                    |                   |              |  | Saturated Charcoal fraga                                     |  |  |
|  |   |             |                       |                    |                   |              |  |  |  |  |
| 6-21   | 2.5/4/2   | 97          | 7.5TR 416             | 3                  | C                 | M            | Loan   | fine Plate, Seasonal fros.                                   |  |  |
| 21-25  | 516/2   | 100         |                       |                    |                   |              | VESAL  | borderline Sil Fine Pla                                      |  |  |
|  | ncentration, D=Depl   | etion, RM:  | =Reduced Matrix, C    | S=Cov              | ered or Co        | ated ad Gr   |  | n: PL=Pore Lining, M=Matrix. ナムいたい                           |  |  |
| HYDRIC SOIL  | . INDICATORS  |             | Thister Boat          | 1.12               |                   | 1            | INDICATORS FOR PROBLEMATIC HYDRIC SOILS <sup>3</sup> |  |  |  |
| Histosol or His  | stel (A1) <u>(</u>  |             | Alaska Gleyed         | (A13) <sub>-</sub> | 7.7               |              | Alaska Color Change (TA4)4                           |  |  |  |
| Histic Epipedo   | on (A2)   |             | Alaska Redox          | (A14) _            | N                 |              | Alaska Alpine Swales (TA5)                           |  |  |  |
| Black Histic (A  | (3)   |             | Alaska Gleyed         | Pores              | (A15)^            | )            | Alaska Redox with 2.5Y Hue N                         |  |  |  |
| Hydrogen Sulf  | fide (A4)   | -           |                       |                    |                   |              |  | Alaska Gleyed without 5Y Hue or Redder Underlying Layer      |  |  |
| Thick Dark Su  | rface (A12)   |             |                       |                    |                   |              |  | in in Notes) N   |  |  |
| disturbed or pr<br><sup>4</sup> Give details of                | roblematic.<br>of color change in No<br>yer (if present): Typ | otes        |                       |                    |                   |              |  | cape position must be present unless  from 21-25+ Pernefrost |  |  |
|  | resent (Y/N):   |             |                       | Ala d              | ine pl            | at 7 51      | ructure  | Do saturation Ala Bositive                                   |  |  |
| toha at  | pha cenetic   | ), II-      | 16" not far           | fin                | freid.            | capacit      | ٠٠.  | No saturation. No positive                                   |  |  |
| HYDROLOGY PRIMARY INDICATORS (any one indicator is sufficient) |   |             |                       |                    |                   |              |  |  |  |  |
| HYDROLOGY  | PRIMARY INDICA  | TORS (ar    | y one indicator is su | ufficient          | t) S              | SECTIARY     | INDICATORS   | (2 or more required)   |  |  |

| Surface Water (A1) Surface Soil Cracks (B6) Number of Part of Sparsely Vegetated Concave Surface (B8) Number of Sparsely Vegetated Concave Sparsely Vegetated Number of Sparsely Vegetated Number o | Waterined Leave 99)  | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic  |  |  |
|--|--|---|--|--|
| Saturation (A3) Sparsely Vegetated Concave Surface (B8) N  Water Marks (B1) Marl Deposits (B15) Hydrogen Sulfide Odor (C1) Drift Deposits (B3) Dry-Season Water Table (C2) N   | Oxidia Rhizospheres along Living lots (C3)  Present of Reduced Iron (C)  Salt Agasits (C5) | Shallow Aquitard (D3) \( \frac{1}{2} \)  Microtopographic Moderate Relief (D4) \( \frac{1}{2} \)  Number to the shallow Aquitard (D3) \( \frac{1}{2} \) |  |  |
| Water Marks (B1)  Sediment Deposits (B2)  Drift Deposits (B3)  Concave Surface (B8)  Marl Deposits (B15)  Hydrogen Sulfide Odor (C1)  Dry-Season Water Table (C2)  | Present of Reduced Iron (C)  Salt Aprils (C5)  | Microtopographic Relief (D4)  |  |  |
| Sediment Deposits (B2) N Hydrogen Sulfide Odor (C1) N Dry-Season Water Table (C2)  | Salt Apsits (C5)   | Relief (D4) / hummock   |  |  |
| Drift Deposits (B3) Dry-Season Water Table (C2)  |  | FAC-Neutral Test (D5)   |  |  |
| Water Table (C2)   | Notes:   |   |  |  |
|  | Notes:   |   |  |  |
| Algal Mat or Crust (B4) Other (Explain in Notes): [  |  |   |  |  |
| Iron Deposits (B5)   | ì  |   |  |  |
|  |  |   |  |  |
| Surface Water Present (Y/N): $\lambda$ Depth (in): $\lambda \lambda$   | Wetlanddrology Present (Y/N):  |   |  |  |
| Water Table Present (Y/N): Depth (in):   |  |   |  |  |
| Saturation Present (Y/N): (includes capillary fringe)  |  |   |  |  |
| Notes:   | 7  | *1  |  |  |

## AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M   | ⇒ Matrix  |
|---|---|
| Forested-Evergreen-Needle-leaved  | cking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent- |
| Percent Cover (P): Tree (>5 dbh, >6m tall)_<br>Dwarf shrub (<0.5m) Tall herb (>1r           | Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Moss-Lichen Floating Submerged  |
| Number of Wetland Types (M):  | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| Vegetation Density/Dominance (P): Sparse 80%)Very High Density (80-100%)_                   | (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-  |
| Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere                     | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or d or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant s   | species) Medium (5-25 species) High (>25)   |
| Presence of Islands (M): Absent (none)  | One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): Open Small Scattered Ratches                      | No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover  |
| Dead Woody Material (P): Low Abundance (<br>Abundant (>50% of surface)                      | (0-25% of surface) Moderately Abundant (25-50% of surface)  |
| Vegetative Interspersion (P): Low (large<br>High (small groupings, diverse and interspers   | patches, concentric rings) Moderate (broken irregular rings)ed)ed   |
| HGM Class (P): Slope Flat   | Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
|   |   |
| SOIL VARIABLES  |   |
| Soil Factors (P): Soil Lacking<br>Mineral: Gravelly Mineral: Sandy_                         | Histosol: Fibric Histosol: Hemic Histosol: Sapric  Mineral: Silty Mineral: Clayey   |
|   |   |
| HYDROLOGIC VARIABLES  |   |
| Inlet/Outlet Class (P): No Inlet/Outlet Intermittent Inlet/Intermittent Outlet Perennial Ir | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet                                  |
| Wet: Perm. Flooded, Intermittently Exposed, S   |   |
| Evidence of Sedimentation (P): No Evidence<br>Created                                       | ce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment  |
| Microrelief of Wetland Surface (P): Absent  | Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)  |
| Frequency of Overbank Flooding (P): No O Return Interval >5 yrs                             | verbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs  |
| Degree of Outlet Restriction (P): No Outflow  |   |
|   | ircumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading   |
| Glacial Till/Not Permeable  | (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits   |
| Basin Topographic Gradient (M): Low<br>Evidence of Seeps and Springs (P): No See            | Gradient (<2%) High Gradient (≥2%) eps or Springs Seeps Observed Intermittent Spring Perennial Spring   |
|   |   |
| LANDSCAPE VARIABLES (M)   |   |
| Wetland Juxtaposition: Wetland Isolate Only Connected Above Connecte                        | ed Wetlands within 400m, Not Connected Only Connected Below<br>d Upstream & Downstream Unknown  |
| Wetland Land Use: High Intensity (i.e.,   | ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)  |
| Watershed Land Use: 0-5% Rural  | 5-25% Urbanized 25-50% Urbanized >50% Urbanized   |
| Size: Small (<10 acres) Medi  | um (10-100 acres) Large (>100 acres)  |

s recrifician QA/QC check.

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#### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature ID: W 84LHOLL Field Target: 1526X For all items not checked, please provide detailed explanation in the notes section of data form. 1. Site Description Site description, site parameters and summary of findings are complete? A detailed site sketch is included in logbook? 2. Vegetation At least 80% of onsite vegetation has been keyed to species, or collected for later identification? Vegetation names are entered legibly for all strata present? Ex Cover calculations are complete and correct? All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed? 3. Soil Soil profile is complete? Appropriate hydric soil indicators are marked? 4. Hydrology Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present? 5. Functions and Values ▼☑ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland? 6. Field Logbook Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate? Each logbook page is initialed and dated? 7. Maps Wetland boundaries have been corrected if necessary?

Maps are initialed and dated?

### 8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

☐ Two photos were taken for each Observation Point (vegetation/site overview)?

X Jennifer M X July 7/22/15
Wetland Scientist (print)

Signature / Date

1 Brean Strong

Signature / Dat

| SITE DESCRIPTION   |   |  |  | TELEVISION AT  |                      |                            |  |
|--|---|--|--|--|----------------------|----------------------------|--|
| Survey Type: Centerline 📉 Acces  | ss Road (explain)   | Other (expla   | uin)   | Field Target:  | 15209                | Map #: 44 Map Date: 418/15 |  |
| Date: 7/22/15  | Project Name & No.:   | Alaska LNG   | 60418403   | F  | eature ld:           | WE424017                   |  |
| Investigators: BS , JA   |   |  | =27  |  | 185                  | Team No.: (284             |  |
| State: Alaska  | Region: Alaska  |  | Milepost:  | 109,0  |                      | ·                          |  |
| Latitude: 65 22 21,11  |   | Longitude  | -148 36  | 31.72  |                      | Datum: WGS84               |  |
| Logbook No.: 02  | Logbook Page No.:   | es   | Picture No.:   | W842H01  | 17 VEC               | VEG PIT PLUG               |  |
| SITE PARAMETERS  |   |  |  | No. 3 US   | JEV STAR             | MADAS WESTERNAME OF ST     |  |
| Subregion: Interest Highland   | 52  |  | Landform (hillslope, terrace, hummocks, etc.): ۲-۵۵+5(۵۴-6   |  |                      |                            |  |
| Slope (%):8% measured as   |   | Local relief (c  | oncave, conve  | k, none): S  | sightly concare Homm |                            |  |
| Pre-mapped Alaska LNG/NWI classifica   |   | 2.1A3  | Evidence of V  |  |                      | 41071                      |  |
| Are climatic/hydrologic conditions on the site typical for this time of year?  Yes No (if no explain in Notes)   |   |  |  |  |                      |                            |  |
| Are Vegetation, Soil, or Hyd   | drology Significant   | tly Disturbed?   | No_ ×_   | _(If yes, explai   | n in Notes)          |                            |  |
| Are Vegetation, Soil, or Hyd   | drology Naturally F   | oroblematic?   | No   | _ (If yes, explai  | in in Notes          | .)                         |  |
| SUMMARY OF FINDINGS  |   | Part a   |  |  | nary E               |                            |  |
| Hydrophytic Vegetation Present? Yes_   | Υ No  | Is   | the Sampled A  | Area within a W  | /etland?             | Yes No                     |  |
| Hydric Soil Present? Yes_  | Y No  | , w  | Wetland Type: PSS4/13  |  |                      |                            |  |
| Wetland Hydrology Present? Yes_  | No  | Ala  | Alaska Vegetation Classification (Viereck): {{ A Z , { A 3}} |  |                      |                            |  |
| Notes and Site Sketch: Please include I corridor. Footslope. Eventy of P Gelisol Water Seeping 320ms. Dry summer A Crossawater in floenced. Polygon as a small streem term thank outlet. | distributed<br>ICMAR-Sap 3<br>over frost tall<br>couple days of<br>No ostlet to | PICMAN<br>1-12 tall<br>the has<br>rain es<br>Polition<br>ma spec<br>est simi | 1. Stunte<br>fairly h<br>arlier in<br>as Jran                | -30' fall<br>2 Picmar<br>15h Ec<br>the week<br>M. Adjace | with 2 , of V        |                            |  |
|  |   |  | 354/13<br>AZ,1A3   |  |                      |                            |  |

| VEGETATION (use scientific names of plants | s)                  |                               |                     |  |
|--|---------------------|-------------------------------|---------------------|--|
| Tree Stratum (Plot sizes: (00)             | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC:                           |
| 1. Picea Mastana                           | 10%                 | 7                             | Fac W               | Total Number of Dominant Species Across All Strata: 5 % Dominant Species that are OBL, FACW, or FAC: 167 |
| 3.   |                     |                               |                     |  |
| 4.   |                     | Y                             |                     | Prevalence Index worksheet:  |
| Total Cover:                               | 0.0                 |                               |                     | Total % Cover of: Multiply by:   |
| 50% of total cover                         | :_5 20              | % of total cov                | rer:2               | OBL species:X 1 =  |
| Sapling/Shrub Stratum ( 26 )               | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species: X 2 = 10 7  FAC species X 3 = 176  FACU species X 4 =                                      |
| 1. Picea Mariana                           | 30%                 | Y                             | Far W               | UPL speciesX 5 =   |
| 2. Alms virtes fraticosa                   | 2/                  | ,                             | FOR                 | Column Totals: 08 (A)  |
| 3. 12 ho dad endran soenlandium            | 25%                 | Y                             | Fac                 | PI = B/A = 2.52  |
| 4. Vaccinium vitis - Ederes                | 7/                  | -                             | Fac                 | Dosiphora Patricesa T  |
| 5. Veretmum Ulginoss                       | 71:                 |                               | Fac                 |  |
| 6. Empetrum nyrum                          | } Z-                |                               | Fac                 |  |
| 7. Salix sladen                            | -                   |                               | Fac                 |  |
| 8.72 bus trust                             | and and             |                               | Free                |  |
| 9. Petula neoclasicana                     | T                   |                               | Fac II              |  |
| Total Cover:                               |                     |                               |                     |  |
| 50% of total cover:                        | 3kc 20              | % of total cov                | er: 14 4            |  |

| VEGETATION (use scientific names of plants | )        |                    | BUTTER    |   |
|--|----------|--------------------|-----------|---|
| Herb Stratum ( 2C )                        | Absolute | Dominant           | Indicator | Hydrophytic Vegetation Indicators:  |
| ×  | % Cover  | Species?<br>(Y/N)  | Status    | Dominance Test is > 50%   |
| 1. Calamagnostis canadansis                | 15       | y                  | Fac       | Prevalence Index is ≤ 3.0   |
| 2. Teulous chamamarus                      | 10       | Y                  | Fac W     | Morphological Adaptations¹ (Provide supporting data in Notes)                       |
| 3. Arctagrosts latifiles                   | 1        |                    | For W     | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                           |
| 4. Colomagnostis lapponica                 | 7        |                    | Fac       | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless |
| 5. Equisation scrippidies                  | T        | :                  | FORM      | disturbed or problematic.   |
| 6. Drosera robundifolia                    | -        |                    | leta      |   |
| 7. Georgian lividican                      | er Arre  | i i                | Facu      | % Bare Ground   |
| 8.   | •        |                    |           | % Cover of Wetland Bryophytes   |
| 9.   |          |                    | la:       | Total Cover of Bryophytes   |
| 10.  |          |                    |           | % Cover of Water  |
| Total Cover:                               | - 26 -   |                    |           | Hydrophytic Vegetation Present (Y/N):   |
| 50% of total cover:                        |          | % of total cov     | er: 5 2   | Notes: (If observed, list morphological adaptations below):                         |
|  |          | , , o or lotal oov |           | Sphoonum 7<br>Feather Mass 25   |
|  |          |                    |           |   |

| SOIL  |  |  | Date Fe   | ature I        | D   |  |   | Soil Pit Required (Y/N)   |
|---|--|--|---|----------------|---|--|---|---|
|   | II E DESCRIPTION: /  | Docariba   | e to the depth needed   |                |   | ndicator or  | confirm the about                           |   |
|   |  | Describe   |   | 10 000         | ument the i                                   | nuicator or t  | Commit the abser                            | ce of indicators.)  |
| Depth<br>inches)  |  |  | Redox Features  |                |   | Loc <sup>2</sup>   | Toxturo                                     | Notes   |
|   | Color (moist)  | %  | Color (moist)   | %              | Type <sup>1</sup>                             | LOC  | Texture                                     | Notes   |
| 2-6   |  | -  |   | -              |   |  |   |   |
| 2 - 1   |  | _  |   | -              |   | -  |   | free water at 28,5"   |
| -16+  |  | -  |   | -              |   | -  |   | frozen sapric materia   |
|   |  | -  |   | -              | -   | -  |   |   |
|   |  | -  |   | +-             |   | +  |   |   |
|   |  | _  | - 1   | -              |   | -  | 8   |   |
| T C. C  | Innontration D Donl  | otion Di   | A. Dadwaad Matrix Cl  | C Cov          | arad ar Car                                   | ated Cond C  | roine <sup>2</sup> l contin                 |   |
|   |  | ellon, Ri  | M=Reduced Matrix, C   | S=COV          | ered or Coa                                   | aled Sand G  |   | FOR PROBLEMATIC HYDRIC SOILS  |
|   | IL INDICATORS  |  | Alaska Olassa   | (440)          | The Sall of                                   | - CO 11  |   |   |
|   | distel (A1)  | £  | Alaska Gleyed   |                | - 1   |  |   | Change (TA4) <sup>4</sup>   |
|   | don (A2)   |  | Alaska Redox (  |                |   |  |   | Swales (TA5)  |
| 3lack Histic  | (A3)   |  | Alaska Gleyed   | Pores          | (A15)   | .)   |   | with 2.5Y Hue   |
| Hydrogen S  | ulfide (A4)  | -  |   |                |   |  | Layer()                                     | d without 5Y Hue or Redder Underlying   |
| <br>Γhick Dark §  | Surface (A12)  |  |   |                |   |  |   | n in Notes) 👌   |
| One indicat   | or of hydrophytic vege   | etation, o   | one primary indicator o   | of wetla       | and hydrolo                                   | gy, and an a   | appropriate lands                           | cape position must be present unless  |
| disturbed or  | problematic.   |  |   |                |   |  |   | 4.4   |
| Restrictive L   | aver (if present): Typ   | e: De  | rmatrost D  | epth (i        | nches):                                       | 1  |   |   |
|   | Present (Y/N):   |  |   |                |   |  |   |   |
| Notes:  |  |  | 5   |                |   |  |   |   |
| Notes:  |  |  | any one indicator is su   | ufficien       |   |  |   | 2 or more required)   |
| Notes:  |  | TORS (   | 5   | ١              | · - v   | ECONDAR<br>Vater-staine<br>eaves (B9)  | d   | 2 or more required)  Stunted or Stressed Plants (D1)  |
| Notes:  HYDROLOG  Gurface Wa  | GY PRIMARY INDICA  | TORS (   | any one indicator is surface Soil Cracks (B6<br>undation Visible on Ae  | <u>, ,,</u>    | agery [                                       | Vater-staine<br>eaves (B9)<br>Orainage Pat   | d<br>_ <i>kJ</i><br>tterns (B10) <i>k</i> _ | Stunted or Stressed Plants (D1)   |
| Notes:  HYDROLOG  Gurface Water   | GY PRIMARY INDICA  | Su Su Int  | any one indicator is surface Soil Cracks (B6<br>undation Visible on Ae  | rial Im        | agery C                                       | Vater-staine<br>eaves (B9)<br>Prainage Pat<br>Oxidized Rhi   | d<br><i>x_J</i>                             | Stunted or Stressed Plants (D1)   |
| HYDROLOG Surface Wa High Water Saturation (A  | ter (A1)  Table (A2)   | Su Su International Su Sp Co   | any one indicator is surface Soil Cracks (B6<br>undation Visible on Ae<br>7)  | rial Im        | agery C                                       | Vater-staine<br>eaves (B9)<br>Prainage Pat<br>Oxidized Rhi   | tterns (B10) zospheres along (C3)           | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)   |
| HYDROLOG<br>Gurface War<br>High Water<br>Gaturation (A  | ter (A1)  Table (A2)   | Su International Survey (B) Sp Co  | any one indicator is surface Soil Cracks (B6<br>undation Visible on Ae<br>7) arsely Vegetated<br>uncave Surface (B8)  | rial Im        | agery C                                       | Vater-staine eaves (B9) Prainage Pate District Pater P | tterns (B10) zospheres along (C3)           | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic  |
| HYDROLOG  Gurface Water  Gaturation (A  Water Marks  Gediment D   | ter (A1)\ Table (A2)  A3)  s (B1)\ eposits (B2)\   | Sulphin Sp. Co. Ma. Hy. Oc. Dr.  | any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7) arrsely Vegetated oncave Surface (B8) arl Deposits (B15) arl Deposits (B15) arrogen Sulfide dor (C1)   | rial Im        | agery C                                       | Vater-staine eaves (B9) Drainage Pat Dxidized Rhi iving Roots Presence of ron (C4)   | tterns (B10)                                | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)  The frost Jables at ~S |
| HYDROLOG  Gurface Water  Gaturation (A  Water Marks  Gediment D  Drift Deposi   | ter (A1)\ Table (A2)  A3)  s (B1)\ eposits (B2)\   | Su Su International Su   | any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7) varsely Vegetated uncave Surface (B8) arl Deposits (B15) underdrogen Sulfide dor (C1)  | ار<br>wrial Im | agery C                                       | Vater-staine eaves (B9) Drainage Pat Dxidized Rhi iving Roots Presence of ron (C4)   | tterns (B10)                                | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)                         |
| HYDROLOG  Gurface Water  Gaturation (A  Water Marks  Gediment D  Drift Deposit  | Table (A2)  S (B1)  Eposits (B2)  A3)  A3)   | Su Su International Su   | any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7)  parsely Vegetated oncave Surface (B8)   | ار<br>wrial Im | agery C                                       | Vater-staine eaves (B9) Drainage Pat Dxidized Rhi iving Roots Presence of ron (C4)   | tterns (B10)                                | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)  The frost Jables at ~S |
| HYDROLOG Surface Water Gaturation (A Water Marks Gediment D Drift Deposit   | Table (A2)  S (B1)  Eposits (B2)  Crust (B4)   | Su Su International Su   | any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7)  parsely Vegetated oncave Surface (B8)   | ار<br>wrial Im | agery C                                       | Vater-staine eaves (B9) Drainage Pat Dxidized Rhi iving Roots Presence of ron (C4)   | tterns (B10)                                | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)  The frost Jables at ~S |
| HYDROLOG  Gurface Water  Gaturation (A  Water Market  Gediment De  Drift Deposit  Algal Mat or  ron Deposit                           | Table (A2)  S (B1)  Eposits (B2)  Crust (B4)   | Sulpha Su | any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7)  parsely Vegetated oncave Surface (B8)   | ار<br>wrial Im | agery C C L S S S S S S S S S S S S S S S S S | Vater-staine eaves (B9) Drainage Par Dixidized Rhi iving Roots Presence of ron (C4) Salt Deposits  | tterns (B10)                                | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)  FAC-Neutral Test (D5)  |
| HYDROLOG  Gurface Water  Gaturation (A  Water Market  Gediment De  Orift Deposit  Algal Mat or  ron Deposit  Gurface Water            | Table (A2)  S (B1)  eposits (B2)  ts (B3)  Crust (B4)  s (B5)  | Sulpha Su | any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7) parsely Vegetated procave Surface (B8) arl Deposits (B15) drogen Sulfide dor (C1) y-Season ater Table (C2)   | ار<br>wrial Im | agery C C L S S S S S S S S S S S S S S S S S | Vater-staine eaves (B9) Drainage Par Dixidized Rhi iving Roots Presence of ron (C4) Salt Deposits  | tterns (B10)                                | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)  FAC-Neutral Test (D5)  |
| HYDROLOG  Gurface Water  Gaturation (A)  Water Market  Sediment Deposit  Algal Mat or  ron Deposit  Gurface Water Table  Saturation F | ter (A1)\ Table (A2)  B (B1)\  eposits (B2)\  ts (B3)\  Crust (B4)\  s (B5)\  ter Present (Y/N):                 | Sulpha Su | any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7) parsely Vegetated procave Surface (B8) arl Deposits (B15) drogen Sulfide dor (C1) y-Season ater Table (C2) her (Explain in Notes)                  | ار<br>wrial Im | agery C L F III                               | Vater-staine eaves (B9) Drainage Par Dividized Rhi iving Roots Presence of con (C4) Salt Deposits Lotes:   | tterns (B10)                                | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)  FAC-Neutral Test (D5)  |
| HYDROLOG  Gurface Water  Gaturation (A  Water Market  Gediment Deposit  Algal Mat or  Iron Deposit  Gurface Water Table  Saturation F | ter (A1)\ Table (A2)  A3)\  s (B1)\ eposits (B2)\ ts (B3)\ Crust (B4)\ s (B5)\ ter Present (Y/N): Present (Y/N): | Sulpha Su | any one indicator is surface Soil Cracks (B6 undation Visible on Ae 7)  parsely Vegetated oncave Surface (B8)  arl Deposits (B15)  drogen Sulfide for (C1)  y-Season ater Table (C2)  her (Explain in Notes)  Depth (in): | ار<br>wrial Im | agery C L F III                               | Vater-staine eaves (B9) Drainage Par Dividized Rhi iving Roots Presence of con (C4) Salt Deposits Lotes:   | tterns (B10)                                | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)  FAC-Neutral Test (D5)  |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed   |
| Percent Cover (P): Tree (>5 dbh, >6m tall)         IO         Sapling (<5 dbh, <6m tall)         IO         Tall shrub (2-6m)         IO         Short shrub (0.5-2m)         IO         Short shrub (0.5-2m)         IO         IO         Moss-Lichen         IO         Floating         Submerged  |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even   |
| Vegetation Density/Dominance (P):         Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%)  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="https://www.cover.or.open.water-width-nice-wid&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;Plant Species Diversity (P): Low (&lt; 5 plant species) Medium (5-25 species) High (&gt;25)&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;Presence of Islands (M): Absent (none) One or Few Several to Many N/A&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover&lt;&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (&gt;50% of surface)&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;SOIL VARIABLES  Out to a control of the control of&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric X  Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;x&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;HYDROLOGIC VARIABLES&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;HYDROLOGIC VARIABLES       Inlet/Outlet Class (P): No Inlet/Outlet ★ No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/Intermittent Outlet Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Outlet Pere&lt;/td&gt;&lt;/tr&gt;&lt;tr&gt;&lt;td&gt;Inlet/Outlet Class (P): No Inlet/Outlet &lt;a href=" mointermittent"="">Mointet/Outlet</a> No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial |
| Inlet/Outlet Class (P): No Inlet/Outlet _K No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inle  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perenn   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermitte   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Out  |
| Inlet/Outlet Class (P): No Inlet/Outlet  No Inlet/Intermittent Outlet  Intermittent Inlet/Intermittent Inlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Out  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermit   |
| Inlet/Outlet Class (P): No Inlet/Outlet ★ No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inle  |
| Inlet/Outlet Class (P): No Inlet/Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Intermittent Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Intermittent Inlet/   |

GPS Technician QA/Q0

Page 4 of 4

#### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature ID: W84LH017 Field Target: 1500 Date: 7/02/15

For all items not checked, please provide detailed explanation in the notes section of data form.

#### 1. Site Description

Site description, site parameters and summary of findings are complete?

A detailed site sketch is included in logbook?

#### 2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- Vegetation names are entered legibly for all strata present?
- Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- Indicator status is correct for each species?

#### 3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

#### 4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

#### 5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

#### 6. Field Logbook

Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?

Each logbook page is initialed and dated?

#### 7. Maps

Wetland boundaries have been corrected if necessary?

Naps are initialed and dated?

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☐ Two photos were taken for each Observation Point (vegetation/site overview)?

X Jenni Ser Andron X Jeffer 7/22/15
Wetland Scientist (print)
Signature / Date

1 Drew Othrone

Field Crew Chief (print)

Signature / Date

| CITE DEPODIDION  |  |               | to the transit                           |                             | Mary many | F. S. EZHVIVI V. V. PREME                                    |
|--|--|---------------|--|-----------------------------|-----------|--|
| SITE DESCRIPTION   |  | OH CHILD      |  | Service America             | C211      |  |
| Survey Type: Centerline X Acces  |  |               | ain)                                     | Field Target:               |           | Map #: 43 Map Date: 6(18/15                                  |
| Date: 7/22/15  | Project Name & No.:  | Alaska LNG    | 60418403                                 | Fe                          | ature Id: | M8454018   |
| Investigators: 75 JA   |  |               |  | 2                           |           | Team No.: しょし  |
| State: Alaska  | Region: Alaska   |               | Milepost: 4                              | 08.80                       |           |  |
| Latitude: 65 22 32.84  |  | Longitude     | -148 36                                  | 44.26                       |           | Datum: WGS84   |
| Logbook No.: 02  | Logbook Page No.:  | 05            | Picture No.:                             | M84LH018_                   | VEC.      | VGO PIT-POUG   |
| SITE PARAMETERS  |  | Teorion, S    |  |                             | No Pay    |  |
| Subregion: Interior Highlan  | 125  |               | Landform (hill                           | slope, terrace, h           | ummocks   | i, etc.): Swite on a footslop                                |
| Slope (%): 6 Aspect W  |  |               |  |                             |           | lightly concave Hunnos                                       |
| Pre-mapped Alaska LNG/NWI classifica   | tion:  |               | Evidence of V                            | Vildlife Use: 🔎             | 51 C. E   | ubserved modern  |
| Are climatic/hydrologic conditions on the Yes_k No (if no expl   | site typical for this time<br>ain in Notes)                  | of year?      |  | ormal Circumstar<br>No(     |           |  |
| Are Vegetation, Soil, or Hyd   | Irology Significant  | ly Disturbed? | No_X                                     | _(If yes, explain           | in Notes) |  |
| Are Vegetation, Soil, or Hyd   | drology Naturally F  | Problematic?  | No×                                      | _ (If yes, explain          | in Notes. | )  |
| SUMMARY OF FINDINGS  |  |               |  |                             |           |  |
| Hydrophytic Vegetation Present? Yes_   | No   | Is            | the Sampled A                            | rea within a We             | etland?   | Yes No   |
| Hydric Soil Present? Yes_  | √ No   | w             | etland Type:                             | PSS4/F04                    | IB        |  |
| Wetland Hydrology Present? Yes_  | / No   | — Ala         | aska Vegetation                          | Classification (V           | √iereck): | EAN, SAII  |
| Notes and Site Sketch: Please include D<br>corridor. Small spring in<br>Moss with standing in<br>the footslope in an<br>At the point describ<br>to occur from poorly<br>into Mixed Shrib-selse | plot with strator, EC33 rea, Permafrong a subtle expressed s | and sure      | water du<br>obable :<br>Mower à<br>perma | scontinuous flut/s wer much | lose of t | nings in sphynim<br>complex throughout<br>the area at 12-14" |
|  |  |               | PS<br>II A<br>S I                        | A HOUR SHIPPUS — 2.1 A3     | - 1/      | FO4/SSIB<br>AZ,11 AZ   |

Errophorum vonath

| VEGETATION (use scientific names of plants | 3)   |                               |                     |  |
|--|--|-------------------------------|---------------------|--|
| Tree Stratum (Plot sizes: 100 )            | Absolute<br>% Cover                            | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: (4) (  Total Number of Dominant Species Across All Strata: (4) (  |
| 1. Picea marana                            | 10   | Y                             | Far W               | % Dominant Species that are OBL, FACW, or FAC: \\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\\  |
| 2.   |  |                               |                     | 76 Dominant Species that are OBL, FACW, of FAC. 1007 (A  |
| 3.   |  |                               |                     |  |
| 4.   |  |                               |                     | Prevalence Index worksheet:  |
| Total Cover:                               | :_10   |                               |                     | Total % Cover of: Multiply by:   |
| 50% of total cover                         | : <u>    5                                </u> | % of total cov                | rer:                | OBL species:X 1 =  |
| Sapling/Shrub Stratum ( 26 )               | Absolute<br>% Cover                            | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species: $48$ $x_2 = 96$ FAC species $46$ $x_3 = 138$ FACU species $8$ $x_4 = 32$   |
| 1. Picea mariana                           | 25   | 4                             | FACW                | UPL species X 5 =  |
| 2. Betala repalastana                      | 17.  |                               | For U               | Column Totals: 10 3 (A) 26 7 (B)   |
| 3. Salix Polches                           | 16%  | 1                             | FacW                | PI = B/A =   |
| 1. Rhododendron joenlandicum               |  |                               | Fac                 |  |
| 5. Vaccinium iliginosum                    | 21   |                               | Fac                 | Between mana To  |
| 3. Vaccinium Vites idaco                   | 7%   |                               | Fac                 |  |
| 7. Chancolophue calipulata                 | ai/  |                               | FacW                |  |
| 8. Vacanium oxycocous                      | 17 -   |                               | OBL                 |  |
| 9520sa aciouleris                          | 37   |                               | Facu                |  |
| Total Cover:                               |  |                               |                     | 2 _ 0  |
| 50% of total cover:                        | : <u> 29</u> 20                                | % of total cov                | er: <u>  .(e</u>    |  |
| VEGETATION (use scientific names of plants |  |                               |                     | AND ALL AND SECTION OF THE SECTION O |
| Herb Stratum ( 2 <sup>C</sup> )            | Absolute<br>% Cover                            | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  |
| 1. Calamagastis canadensis                 | L4"/   |                               | Fac                 | Prevalence Index is ≤ 3.0<br>Morphological Adaptations¹ (Provide supporting data in  |
| 2. Agrastis latifolia                      | 17-  |                               | FAC IN              | Notes)   |
| 3. Equisation salvations                   | 25%  | Y                             | Fac                 | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 4. Cavischin acverse                       | 17.  | -                             | Fac                 | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless  |
| 5. Crusetum seropoidies.                   | 3  |                               | Facu                | disturbed or problematic.  |
| 6. Equisation *                            |  |                               |                     |  |
| 7. Dasse ( d. ) Cl.                        | V/-  |                               | - CA. 1             | % Bare Ground  |

Feather mass St Licher 10

Hydrophytic Vegetation Present (Y/N): \_

% Cover of Wetland Bryophytes
Total Cover of Bryophytes

% Cover of Water

Notes: (If observed, list morphological adaptations below):

|  |  |                                    | Date Fo  | eature l                           | D                     |  |  | Soil Pit Required (Y/N)_  |
|--|--|------------------------------------|--|------------------------------------|-----------------------|--|--|---|
| SOIL PROF  | ILE DESCRIPTION: (D  | )escribe                           | to the depth neede   | d to doc                           | ument the             | indicator or co  | onfirm the absence   | of indicators.)   |
| Depth  | Matrix   |                                    | Redox Features   |                                    |                       |  |  |   |
| (inches)   | Color (moist)  | %                                  | Color (moist)  | %                                  | Type <sup>1</sup>     | Loc <sup>2</sup>   | Texture  | Notes   |
| 0-3  |  |                                    |  |                                    |                       |  |  | Not saturated.  |
| 3-8  |  |                                    |  |                                    |                       |  |  | Evidence of Saturat   |
| 2-10   | -  |                                    |  |                                    |                       |  |  | Saturated, Free wi  |
| 10-17  | N510   |                                    | 7.5 u 4/6  | 12                                 | C                     | PL/OX  | Clarilana  | Aigha alpha posit   |
| 1.2  | 10010  |                                    | 1.2 1- 1/12  | 1~                                 |                       | 1 -7 -0/   |  | 1.031   |
| 17-20  | N5/6-1355  |                                    | 7.5-12-4/6   | 10                                 | <u></u>               | PL   | GRLoam   | Alpha alpha Poci  |
|  |  |                                    |  | -                                  | BAL                   |  |  | Smully les lens   |
| <sup>1</sup> Type: C=C   | oncentration, D=Deple  | tion, R                            | √l=Reduced Matrix, (   | CS=Cov                             | ered or Co            | ated Sand Gr   | ains. <sup>2</sup> Location:   | PL=Pore Lining, M=Matrix.   |
| HYDRIC SO  | IL INDICATORS  | V Design                           |  | Daniel S                           | Pailer.               |  |  | OR PROBLEMATIC HYDRIC SO  |
| Histosol or H  | listel (A1)N   |                                    | Alaska Gleyed  | d (A13)                            | N                     |  | Alaska Color Ch  | nange (TA4) <sup>4</sup> \  |
|  | don (A2)   |                                    | Alaska Redox   |                                    |                       |  |  | wales (TA5) \( \sum_{\cup} \)   |
| Black Histic   |  |                                    | Alaska Gleyed  |                                    |                       | (  |  | vith 2.5Y Hue   |
|  |  |                                    | Alaska Gleyet  | J Foles                            | (A15) _ K             | <u></u>  |  | without 5Y Hue or Redder Underly  |
| Hydrogen Sι  | ulfide (A4)  |                                    |  |                                    |                       |  | Layer  | -   |
| Thick Dark S   | Surface (A12)  |                                    |  |                                    |                       |  | Other (Explain i   | n Notes) Persone matri  |
| Restrictive L  | Present (Y/N):   | 7                                  |  |                                    | high                  | nes  | (. N.t colo  | red Too gravelly and  |
| Restrictive L  | Present (Y/N):   | 7                                  |  |                                    |                       | nes  | 1. N.+ colo.   | red Too gravelly and  |
| Hydric Soll  Notes: Colo   | Present (Y/N):   | Y exto                             | natural belance a souz   | w 17<br>som                        | high                  | in same  | ( N, + colo.   |   |
| Hydric Soil Notes: Colo  | Present (Y/N):   | TORS (a                            | natural belance a souz   | w 17                               | high plan.            | in same  | INDICATORS (2  |   |
| Hydric Soil  Notes: Color  NOT | Present (Y/N):   | FORS (a                            | any one indicator is surface Soil Cracks (Building Visible on A  | Sufficient                         | high  plan  t)  agery | SECONDARY<br>Water-stained<br>Leaves (B9)<br>Drainage Patte  | r INDICATORS (2 o  | or more required)  Stunted or Stressed Plants (D1)/   |
| Hydric Soil  Notes: Color  HYDROLOG  Surface Wat  High Water   | Present (Y/N):  Present (Y/N): | FORS (a                            | any one indicator is surface Soil Cracks (Bundation Visible on A   | sufficient  6) N erial Ima         | t) :                  | SECONDARY Water-stained Leaves (B9) _ Drainage Patto Dxidized Rhizo Living Roots (6)                                     | rINDICATORS (2 of the control of the | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  |
| Hydric Soil  Notes: Color  HYDROLOG  Surface Wat  High Water T   | Present (Y/N):  Present (A1)  Present (A1)  Present (A2)  Present (A2)  Present (A3)  Present (A3)   | FORS (a Su Inu (B) Sp Co           | any one indicator is surface Soil Cracks (Bundation Visible on A7)  arsely Vegetated incave Surface (B8)  art Deposits (B15)   | sufficient  6) N erial Ima         | t) :                  | SECONDARY Water-stained Leaves (B9) _ Drainage Patte   | rINDICATORS (2 of the control of the | or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  |
| Hydric Soil  Notes: Color  HYDROLOG  Surface Wat  High Water T  Saturation (A  | Present (Y/N):  Present (A1)  Present (A1)  Present (A2)  Present (A2)  Present (A3)  Present (A3)   | FORS (a Su Inu (B) Co Ma Hy Od     | any one indicator is surface Soil Cracks (Bundation Visible on A7)  arsely Vegetated incave Surface (B8) ard Deposits (B15)  drogen Sulfide for (C1)   | sufficient  6) N erial Ima         | hoh                   | SECONDARY  Water-stained Leaves (B9)  Drainage Patte  Dxidized Rhize Living Roots (CPresence of Rron (C4)  Salt Deposits | erns (B10) cospheres along C3)   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic  |
| Hydric Soil  Notes: Color  HYDROLOG  Surface Wat  High Water T  Saturation (A  Water Marks  Sediment De  | Present (Y/N):  Present (A1)  Pres | FORS (a Su Inu (B) Sp Co Ma Hy Od  | any one indicator is surface Soil Cracks (Bundation Visible on A7)  arsely Vegetated ancave Surface (B8)  arl Deposits (B15)  drogen Sulfide   | sufficient 6) _ N erial Ima        | hoh                   | SECONDARY Water-stained Leaves (B9) Drainage Patte Dxidized Rhize Living Roots (Coresence of Roon (C4)                   | erns (B10) cospheres along C3)   | Stunted or Stressed Plants (D1)/  Geomorphic Position (D2)  Shallow Aquitard (D3)/  Microtopographic Relief (D4)/   |
| Hydric Soil  Notes: Color  Notes: Color  Notes: Color  Notes: Color  HYDROLOG  Surface Wat  High Water T  Saturation (A  Water Marks  Sediment De  Drift-Deposit   | Present (Y/N):  Present (A1)  Pres | Su Inu (B) Sp Co Ma Hywa           | any one indicator is surface Soil Cracks (Bundation Visible on A7)  arsely Vegetated incave Surface (B8)  arl Deposits (B15)  drogen Sulfide lor (C1)  | sufficient  sufficient  sufficient | hoh                   | SECONDARY  Water-stained Leaves (B9)  Drainage Patte  Dxidized Rhize Living Roots (CPresence of Rron (C4)  Salt Deposits | erns (B10) cospheres along C3)   | Stunted or Stressed Plants (D1)/  Geomorphic Position (D2)  Shallow Aquitard (D3)/  Microtopographic Relief (D4)/   |
| Hydric Soil  Notes: Color  HYDROLOG  Surface Wat  High Water T  Saturation (A  Water Marks  Sediment De  | Present (Y/N):  Present (B1)   | Su Inu (B) Sp Co Ma Hywa           | any one indicator is surface Soil Cracks (Bundation Visible on Ar)  arsely Vegetated incave Surface (B8)  arl Deposits (B15) drogen Sulfide lor (C1) y-Season atter Table (C2)   | sufficient  sufficient  sufficient | hoh                   | SECONDARY  Water-stained Leaves (B9)  Drainage Patte  Dxidized Rhize Living Roots (CPresence of Rron (C4)  Salt Deposits | erns (B10) cospheres along C3)   | Stunted or Stressed Plants (D1)/  Geomorphic Position (D2)  Shallow Aquitard (D3)/  Microtopographic Relief (D4)/   |
| Hydric Soll  Notes: Color  HYDROLOG  Surface Wat  High Water T  Saturation (A  Water Marks  Sediment De  Drift-Deposit  Algal Mat or   | Present (Y/N):  Present (Y/N): | Su Inu (B) Sp Co Ma Hyy Odd Dry Wa | any one indicator is surface Soil Cracks (Bundation Visible on A rocave Surface (B8) and Deposits (B15) drogen Sulfide for (C1) drogen Sulfide for (C2) drogen Sulfide for (C2 | sufficient  sufficient  sufficient | hoh                   | SECONDARY  Water-stained Leaves (B9)  Drainage Patte  Dxidized Rhize Living Roots (CPresence of Rron (C4)  Salt Deposits | erns (B10) cospheres along C3)   | Stunted or Stressed Plants (D1)/  Geomorphic Position (D2)  Shallow Aquitard (D3)/  Microtopographic Relief (D4)/   |
| Hydric Soil  Notes: Color  HYDROLOG  Surface Wat  High Water T  Saturation (A  Water Marks  Sediment De  Drift-Deposit  Algal Mat or  Iron Deposits  Surface Wat   | Present (Y/N):  Present (B1)   | Su Inu (B) Sp Co Ma Hyy Odd Dry Wa | any one indicator is surface Soil Cracks (Bundation Visible on Ar)  arsely Vegetated incave Surface (B8)  arl Deposits (B15) drogen Sulfide lor (C1) y-Season atter Table (C2)   | sufficient  sufficient  sufficient | high spice.           | Drainage Patte<br>Dvaidized Rhize<br>Living Roots (Coresence of Roon (C4)  | erns (B10) cospheres along C3)   | Stunted or Stressed Plants (D1) \( \frac{1}{2} \)  Geomorphic Position (D2) \( \frac{1}{2} \)  Shallow Aquitard (D3) \( \frac{1}{2} \)  Microtopographic Relief (D4) \( \frac{1}{2} \)  FAC-Neutral Test (D5) \( \frac{1}{2} \) |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix   |
|---|
| Primary Vegetation Type (P):       Vegetation Lacking       Forested-Deciduous-Needle-leaved       Forested-Deciduous-Broad-leaved         Forested-Evergreen-Needle-leaved       Scrub Shrub-Deciduous-Needle-leaved       Scrub Shrub-Deciduous-Broad-leaved         Scrub Shrub-Evergreen-Broad-leaved       Scrub Shrub-Evergreen-Needle-leaved       Emergent-Non-persistent       Emergent-Non-persistent   |
| Percent Cover (P): Tree (>5 dbh, >6m tall) IO       Sapling (<5 dbh, <6m tall) 2 G       Tall shrub (2-6m) G       Short shrub (0.5-2m) 2 G         Dwarf shrub (<0.5m) 2 Tall herb (≥1m) 5 Short herb (<1m) 2 Moss-Lichen Floating Submerged   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even  |
| Vegetation Density/Dominance (P): Sparse (0-20%)       Low Density (20-40%)       Medium Density (40-60%)       High Density (60-80%)         80%)       Very High Density (80-100%)       X  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water X <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)   |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover_X   |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)  |
| Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)  |
| HGM Class (P): Slope ⋉ Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
|   |
| SOIL VARIABLES  |
| Soil Factors (P):       Soil Lacking       Histosol: Fibric       Histosol: Hemic       Histosol: Sapric         Mineral:       Gravelly       Mineral: Sandy       Mineral: Silty       Mineral: Clayey       Mineral: Clayey  |
|   |
| HYDROLOGIC VARIABLES  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent OutletX No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outl  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Outlet Perennial   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet & No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Pere   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermi   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermitt |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermi   |
| Inlet/Outlet Class (P): No Inlet/Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermi   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermit  |

Crew Chief QA/QC check:

GPS Technician QA/QC check

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#### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

Feature ID: W84LHO 18 Field Target: 1214 Date: 7 2416

For all items not checked, please provide detailed explanation in the notes section of data form.

#### 1. Site Description

Site description, site parameters and summary of findings are complete?

A detailed site sketch is included in logbook?

#### 2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- ▼ Vegetation names are entered legibly for all strata present?
- Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- Indicator status is correct for each species?
- M Dominance Test and Prevalence Index have been completed?

#### 3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

#### 4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

#### 5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

#### 6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- Each logbook page is initialed and dated?

#### 7. Maps

Wetland boundaries have been corrected if necessary?

Maps are initialed and dated?

#### 8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

☐ Two photos were taken for each Observation Point (vegetation/site overview)?

X Jenni fer Andens X Jenni fer Andens X Signapure / Date 7/22/15
Wetland Scientist (print)

1 Draw Froms

Field Crew Chief (print)

Signature / Date

| SITE DESCRIPTION  |   | A Part  | VAN LENGT  |  | May The   |   |
|---|---|---|--|--|---|---|
| Survey Type: Centerline 🔼 Acc   | ess Road (explain) Otl  | <b>her</b> (explai  | n)   | Field Targ   | et: <u>15155</u>  | Map #: JA Map Date: 6/18/15   |
| Date: 7/23/15   | Project Name & No.: Ala   | aska LNG  | 60418403   |  | Feature Id:   | W842HO19  |
| Investigators: 735 3A   |   |   |  |  | Team No.: W84   |   |
| State: Alaska   | e: Alaska Region: Alaska  |   |  |  |   |   |
| Latitude: 64 30 15.79   | ongitude:   | -149  | 09 52  | 55   | Datum: WGS84  |   |
| Logbook No.: 02   | Logbook Page No.: 06  |   |  |  |   | -VEC-PIT-PLUL   |
| SITE PARAMETERS   |   | 959 Li-   | SEADES!  |  |   | Survey of Landing 182, 51   |
| Subregion: Interior   |   |   | Landform (hi   | Islope, terrac   | e, hummocks   | i, etc.): Lowland - Terrace   |
| Slope (%): 0, 5-2-72  | 11  |   | Local relief (d  | concave, con   | vex, none): 7-  | fat Hummoder moder  |
| Pre-mapped Alaska LNG/NWI classific   | ation: ?  |   |  |  |   | bserved in area   |
| Are climatic/hydrologic conditions on the Yes No_ ► (if no expectation)   | ne site typical for this time of y  | /ear?   | Are "N   | ormal Circum   | stances" pres (If no, exp                                   | sent:<br>dain in Notes.)  |
| Are Vegetation, Soil, or Hy   |   |   |  |  | lain in Notes)  |   |
| Are Vegetation, Soil, or Hy   | drology Naturally Probl   | lematic?  | No_X   | _ (If yes, exp   | lain in Notes   | )   |
| SUMMARY OF FINDINGS   |   |   |  | 4 7 2 3 9  | TO NOT BE   |   |
| Hydrophytic Vegetation Present? Yes_  | No  | ls th   | ne Sampled /   | Area within a  | Wetland?  | Yes No  |
| Hydric Soil Present? Yes_   | No  | Wet   | land Type: ७   | PSSH/1B  | with  | PSS4/FO4B   |
| Wetland Hydrology Present? Yes_   | No  | Alas  | ka Vegetatio   | n Classification   | on (Viereck):   | 11AZ 11CZ   |
| Notes and Site Sketch: Please include corridor. Patchy dispersion depressions in the area septings. 7.10% Trees larger white spruce is LEDGRO, CAMCAC, CAE burned but largen or Dry sunner Rarlier in Dry sunner Rarlier in | a of vegetation.  G. Mostly PSSH  - a MIX of Bla  A decline. Open  CAN with a bit  egenerated Sime  inal field torbet | with a with a lek Sp. needle for Special of Special or | nitres .  MIX of  NUCE, SER  PELECE C  BALFUL  MIXAN  MIX OF | Acade theres anory and state acceptions to accept the acceptions to accept the acceptions to accept the acceptions the acceptance of the acceptance acceptance and acceptance a | spruce<br>spruce<br>seper bi<br>with of<br>at 2-2<br>at 2-2 | a few small PEMilssic<br>Saplings and Lorch<br>rch, larch, and a few<br>hirly thick cover of<br>I' Some of area has<br>Jead Snags |
|   |   |   | <  | <b>→</b>   |   |   |
|   | 4   | NM  |  | 25   |   |   |

Germin Rhino 110 30 20' accorned 64.50437 149.16466

Page Vof 4

| VEGETATION (use scientific names of plants | )                   |                               |                     |   |
|--|---------------------|-------------------------------|---------------------|---|
| Tree Stratum (Plot sizes: 100 )            | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC:    |
| 1. Picca Mariana                           | 8                   | 4                             | FACW                | % Dominant Species that are OBL, FACW, or FAC: \(\sigma \frac{\gamma}{2} \) (A/B) |
| 2. Picea Olavea                            | P/T                 |                               | FAC.U.              | 70 DOMINIANT OPECIES THAT ARE OBE, 1 NOW, OF 1 NO (ND)                            |
| 3. Betola receleskana                      | 4                   | γ                             | FACU                |   |
| 4. Larix laricina -27                      | 1                   |                               | FACW                | Prevalence Index worksheet:   |
| Total Cover:                               | 13                  |                               |                     | Total % Cover of: Multiply by:  |
| 50% of total cover:                        | 6.5 20              | % of total cov                | er: 2 . 6           | OBL species:X 1 =   |
| Sapling/Shrub Stratum ( % )                | Absolute            | Dominant                      | Indicator           | FACW species: 60 X 2 = 120  |
|  | % Cover             | Species?                      | Status              | FAC species 8 1 . X 3 = 252   |
| <u> </u>                                   |                     | (Y/N)                         |                     | FACU species 11 X 4 = 44  |
| 1. Picea Mariana                           | 25                  | Y                             | FACW                | UPL speciesX 5 =  |
| 2. Detula nevalaskana                      | 7                   |                               | FACU                | Column Totals: 155 (A) 416 (B)  |
| 3. Larix Laricina                          | 6                   |                               | FACW                | PI = B/A = 7.68   |
| 4. Salix pulchra 2.4'                      | 10.                 |                               | FAC                 |   |
| 5. Vaccinium vitis idaec                   | 12                  | - 7/                          | FAC                 | Betvle slandulosa 3-4' T  |
| 6. Alaus virdis 3-4'                       | 3.                  |                               | FAC                 | Vaccinium oxycoccous T  |
| 7. Rho Lodendron groenlandicum             | 27.                 | +                             | FAC                 | Rosa acicularis   |
| 8. Vaccinium uliginosa                     | 10                  |                               | FAC                 | Picea Blavea Sap T  |
| 9. Changedaphie callyculata                | 15.                 | 7                             | FACU                |   |
| Total Cover:                               | 115                 |                               |                     |   |
| 50% of total cover:                        | 57.5 20             | % of total cov                | er: 23              |   |

| VEGETATION (use scientific names of plant               | s)                  | Far Sala                      |                     |   |
|---|---------------------|-------------------------------|---------------------|---|
| Herb Stratum ( 26 )                                     | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50% Prevalence Index is ≤ 3.0   |
| 1. Calamagrostis canadasis<br>2. Arctogrostis latifolia | 20                  | 4                             | FACU                | Morphological Adaptations <sup>1</sup> (Provide supporting data in Notes)   |
| 3. Equisation arvense 4. Anemone SP 5.                  | 2                   |                               | FAC                 | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. |
| 6.<br>7.<br>8.  |                     |                               |                     | % Bare Ground % Cover of Wetland Bryophytes   |
| 9.  |                     |                               | 2                   |   |
| Total Cover   |                     | % of total cove               | <sub>er:</sub> ડ.ન_ | Hydrophytic Vegetation Present (Y/N):  Notes: (If observed, list morphological adaptations below):  |

Feather Moss 15 Litter 5

| SOIL                   |   | 1 July 1        | 7/23/15<br>Date Fe                     | eature I  | 0                 | it lifex s  | .58.                        | Soil Pit Required (Y/N)            |  |  |  |
|------------------------|---|-----------------|--|-----------|-------------------|---|-----------------------------|------------------------------------|--|--|--|
| SOIL PROF              | ILE DESCRIPTION:  | (Describe       | to the depth needed                    | to doc    | ument the         | indicator or co   | onfirm the absence          | ce of indicators.)                 |  |  |  |
| Depth                  | Matrix  |                 | Redox Features                         |           |                   |   |                             |                                    |  |  |  |
| (inches)               | Color (moist)   | %               | Color (moist)                          | %         | Type <sup>1</sup> | Loc²  | Texture                     | Notes                              |  |  |  |
| 6-4                    |   |                 |  | 1         |                   |   | Fibric                      |                                    |  |  |  |
| 4-7                    |   |                 |  |           |                   |   | Home                        |                                    |  |  |  |
| 7-9                    |   |                 |  |           |                   |   | Sapric                      |                                    |  |  |  |
| 9-13                   | NS/O  |                 | 1072516                                | 15        | C                 | M   | SICL                        | Positive alpha alpha read          |  |  |  |
|                        |   |                 |  |           |                   |   |                             | war lower boundary                 |  |  |  |
| 13-17                  | 5-15/1  | 75              | 10725/6                                | 10        | C                 | PL/M  | SICL                        | fine plate with fine               |  |  |  |
|                        | 2.5-14/3  | 15              |  |           |                   |   |                             | ice lenses. No positive            |  |  |  |
| <sup>1</sup> Type: C=C | oncentration, D=Depl  | etion, RN       | 1=Reduced Matrix, C                    | S=Cove    | ered or Co        | ated Sand Gr  |                             | n: PL=Pore Lining, M=Matrix.       |  |  |  |
| HYDRIC SC              | IL INDICATORS   |                 | illos to the                           | Waller.   |                   |   | INDICATORS                  | FOR PROBLEMATIC HYDRIC SOILS       |  |  |  |
| Histosol or H          | listel (A1)   |                 | Alaska Gleyed                          | (A13)_    | 1                 |   | Alaska Color (              | Change (TA4) <sup>4</sup>          |  |  |  |
| Histic Epipe           | distic Epipedon (A2) Alaska Redox (A14)                         |                 |  |           |                   |   | Alaska Alpine Swales (TA5)N |                                    |  |  |  |
| Black Histic           | (A3) \(\lambda\)  |                 | Alaska Gleyed                          | Pores     | (A15)/\           |   | with 2.5Y HueN              |                                    |  |  |  |
| Hydrogen Si            | ulfide (A4) N   |                 |  |           |                   | Alaska Gleyed without 5Y Hue or Redder Underlying Layer |                             |                                    |  |  |  |
| Thick Dark S           | Surface (A12)N  |                 |  |           | 14                |   | Other (Explain              | in Notes) Relicez matrix           |  |  |  |
| 4Give details          | problematic.<br>of color change in Ne<br>ayer (if present): Typ | otes.<br>e: +cr | isfrest [                              | Depth (ir | nches):           |   |                             |                                    |  |  |  |
|                        | Present (Y/N):  |                 |  |           |                   |   |                             |                                    |  |  |  |
|                        | dence of a w  |                 |  |           |                   | eon at  | ~4 inches.                  |                                    |  |  |  |
| HYDROLOG               | Y PRIMARY INDICA  | TORS (a         | ny one indicator is s                  | ufficient | ) s               | ECONDARY  | INDICATORS (2               | 2 or more required)                |  |  |  |
| Surface Wat            | er (A1)   |                 | face Soil Cracks (B6                   |           | —   L             | /ater-stained<br>eaves (B9) _                           |                             | Stunted or Stressed<br>Plants (D1) |  |  |  |
| High Water             | Γable (A2) _↓   |                 | ndation Visible on Ad                  | erial Ima | gery              | rainage Patte   | erns (B10) <u>ル</u>         | Geomorphic Position (D2)           |  |  |  |
| Saturation (A          | N3) N   | Spa<br>Cor      | rsely Vegetated<br>cave Surface (B8) _ | 2         | C                 | xidized Rhizo<br>iving Roots (0                         | ospheres along<br>C3)       | Shallow Aquitard (D3)              |  |  |  |
| Water Marks            | (B1) N  | Ma              | l Deposits (B15)                       | J         |                   | resence of Roon (C4)                                    |                             | Microtopographic<br>Relief (D4)    |  |  |  |
| Sediment De            | posits (B2)   |                 | lrogen Sulfide<br>or (C1)              |           | S                 | alt Deposits (  | (C5) <u>N</u>               | FAC-Neutral Test (D5)              |  |  |  |
| Drift Deposits         | s (B3) N  |                 | -Season<br>ter Table (C2)              |           | N                 | otes: Full  | ence of so                  | toration at any and ev             |  |  |  |

| High Water Table (A2)                                    | (B7)                                    | Drainage Patterns (B10)                       | Geomorphic Position (D2)     |
|--|---|---|------------------------------|
| Saturation (A3)  | Sparsely Vegetated Concave Surface (B8) | Oxidized Rhizospheres along Living Roots (C3) | Shallow Aquitard (D3)        |
| Water Marks (B1)   | Marl Deposits (B15)                     | Presence of Reduced<br>Iron (C4)              | Microtopographic Relief (D4) |
| Sediment Deposits (B2)                                   | Hydrogen Sulfide<br>Odor (C1)           | Salt Deposits (C5) _ \( \subseteq \)          | FAC-Neutral Test (D5)        |
| Drift Deposits (B3)시                                     | Dry-Season<br>Water Table (C2)          | Notes: Evidence of sat                        | wration at my" and evider    |
| Algal Mat or Crust (B4)                                  | Other (Explain in Notes): 1             |   |                              |
| Iron Deposits (B5)                                       |   |   |                              |
| Surface Water Present (Y/N): N                           | Depth (in): 🗸 🛆                         |   |                              |
| Water Table Present (Y/N):                               | Depth (in): NA                          | Wetland Hydrology Present (Y/N):              | 7                            |
| Saturation Present (Y/N):<br>(includes capillary fringe) | Depth (in):                             | EC: NA  | Y T                          |
| (includes capillary initige) N ×                         |   |   |                              |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix   |
|---|
| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed  |
| Percent Cover (P): Tree (>5 dbh, >6m tall) / 3       Sapling (<5 dbh, <6m tall) / 3       Tall shrub (2-6m) / 3       Short shrub (0.5-2m) / 5         Dwarf shrub (<0.5m) / 2  |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even  |
| Vegetation Density/Dominance (P): Sparse (0-20%)         Low Density (20-40%)         Medium Density (40-60%)         High Density (60-80%)           80%)         Very High Density (80-100%)         X  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="#">&lt;25% Scattered/Peripheral Cover</a> 26-75% Scattered or Peripheral Cover N/A   |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)   |
| Presence of Islands (M): Absent (none)X One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover   |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)  |
| Vegetative Interspersion (P):       Low (large patches, concentric rings)       Moderate (broken irregular rings)         High (small groupings, diverse and interspersed)  |
| HGM Class (P): Slope FlatX_ Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
|   |
| Soil Variables Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Histosol: S |
| HYDROLOGIC VARIABLES  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No  |
| Outlet Intermittent Inlet/Intermittent Outlet No Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Ou   |
| Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated   |

check:

GPS Technician QA/QC check

Page 4 of 4

### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

|         | e ID: <u>W84 CH019</u> Field Target: <u>15155</u> Date: <u>7/23/15</u> items not checked, please provide detailed explanation in the notes section of data form. |
|---------|--|
| rui aii | items not checked, please provide detailed explanation in the notes section of data form.  |
|         |  |
| 1.      | Site Description   |
|         | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included in logbook?  |
| 2.      | Vegetation   |
|         | At least 80% of onsite vegetation has been keyed to species, or collected for later  |
|         | identification?  Vegetation names are entered legibly for all strata present?  |
|         | Cover calculations are complete and correct?   |
|         | All dominant species have been determined and recorded per strata?  Indicator status is correct for each species?  |
|         | ☐ Dominance Test and Prevalence Index have been completed?   |
| 3.      | Soil   |
|         | Soil profile is complete? Appropriate hydric soil indicators are marked?   |
| 4.      | Hydrology  |
|         | Appropriate hydrology indicators are marked?  Surface water, water table, and saturation depths are recorded if present?   |
| 5.      | Functions and Values   |
|         | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6.      | Field Logbook  |
|         | Notes have been recorded at each site, including general description, sketch, and  |
|         | accuracy of pre-mapped wetland boundary as appropriate?<br>☑ Each logbook page is initialed and dated?   |
| 7.      | Maps   |
|         |  |

| 8. | Ρ | h | O | to | S |
|----|---|---|---|----|---|
|    |   |   |   |    |   |

| / |  |
|---|--|
| × | Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 |
|   | soil pit, 1 soil plug)?  |
|   | Two photos were taken for each Observation Point (vegetation/site overview)?     |

X Jennifer Anderson X 7/23/17
Wetland Scientist (print) Signature / Date

X Bryan Strong X Bryan 7/23/15
Field Crew Chief (print) Signature / Date

| SITE DESCRIPTION  |   | The wild                       |   |                        | A CHEE            |  |
|---|---|--------------------------------|---|------------------------|-------------------|--|
| Survey Type: Centerline 😕 Acces   | ss Road (explain)                             | Other (expla                   | ain)                                    | Field Targ             | et: <u>1515</u> 5 | Map #: 101 Map Date: 6/18/15                                 |
| Date: 7/23/15   | Project Name & No.:                           | Alaska LNG                     | 60418403                                |                        | Feature Id:       | W84LH020   |
| Investigators: $\%$ $>$ $\wedge$  |   |                                |   |                        |                   | Team No.:(ル) ぞく  |
| State: Alaska   | Region: Alaska                                |                                | Milepost イブ                             | 8.1                    |                   |  |
| Latitude: 64 30 28.60   |   | Longitude                      | :- 149 09                               | 47,14                  |                   | Datum: WGS84   |
| Logbook No.: OZ   | Logbook Page No.:                             | >6                             | Picture No.:                            | W84114                 | 250_vec           | -NEG-PIT-PLUG  |
| SITE PARAMETERS   |   | nikes a                        |   |                        |                   |  |
| Subregion: 1, +crior  |   |                                | Landform (hills                         | slope, terrac          | e, hummocks       | s, etc.): Lowland-Terrace                                    |
| Slope (%): .5 - 2 %   |   |                                | Local relief (co                        | ncave, con             | vex, none): ݮ     | lat (-lumocler-Ma)   |
| Pre-mapped Alaska LNG/NWI classifica  | ution: PFOU/SS4B                              | 1A2,11C1                       | Evidence of W                           | 'ildlife Use: 、        | Mose o            | oserved in ana   |
| Are climatic/hydrologic conditions on the Yes No (if no expl  | e site typical for this time<br>ain in Notes) | of year?                       |   | rmal Circum            | stances" pres     |  |
| Are Vegetation, Soil, or Hyd  |   | y Disturbed?                   |   |                        | lain in Notes)    |  |
| Are Vegetation, Soil, or Hyd  |   | 2                              | -                                       |                        | lain in Notes.    |  |
| SUMMARY OF FINDINGS   |   | LRW.                           |   | of the second          |                   |  |
| Hydrophytic Vegetation Present? Yes_  | ∠ No  | Is                             | the Sampled A                           | rea within a           | ı Wetland?        | Yes_ ×′ No   |
| Hydric Soil Present? Yes_   |   | _ w                            | etland Type:                            | ss 3/4                 | B Woo             | odland Mixed Abrest  |
| Wetland Hydrology Present? Yes  | ├ No_   | — Ala                          | aska Vegetation                         | Classification         | on (Viereck):     | 11 CZ 11A3   |
| Notes and Site Sketch: Please include D<br>corridor. Fire come through<br>Mix of cosy BETN<br>CHACAL and CALCORN<br>Point moved to due acce<br>2 does of rain fell es | LO PICGLA &<br>Soil PIT ECT<br>ESS ISSUES. No | 700. Son<br>ND Lar<br>115 MS @ | ne deadle<br>ch sarliv                  | 11 and<br>13 Fe<br>155 | a few<br>stree    | PICGLA SNAGS around.  S. Thick cover of Derressional complex |
|   |   |                                |   |                        | ě.                |  |
| Δ.  | PEMITE 11 A 3                                 |                                | 9553/13 no<br>LHO20<br>(X)  PROMITE MA3 |                        |                   |  |
| TN  |   |                                |   |                        | J                 | e g  |

|  | Absolute            | Dominant                      | Indicator  | Dominance Test worksheet:  |
|--|---------------------|-------------------------------|--|--|
| Tree Stratum (Plot sizes: 100)   | % Cover             | Species?                      | Status   | No. of Dominant Species that are OBL, FACW, or FAC: 2.   |
| Picea glavea -   | 27                  | (Y/N)                         | Foru   | Total Number of Dominant Species Across All Strata:  |
| Betula neoalesteans  | 3/                  | 4.                            | Facu   | % Dominant Species that are OBL, FACW, or FAC: _50//   |
| PETOLE WED & LET 1600 E  | 0/-                 | ,,,                           | I CA A   |  |
| •  |                     |                               |  | Prevalence Index worksheet:  |
| Total Cover  | : 57.               |                               | Ų.   | Total % Cover of: Multiply by:   |
| 50% of total cover   | : 2.5 20            | % of total cov                | /er:   | OBL species:X 1 =  |
| apling/Shrub Stratum ( 26 )  | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status                                      | FACW species: $X2 = 88$ FAC species $X3 = 147$   |
| Larix lasicina   | 5%                  | (1714)                        | Each   | FACU species       X 4 = 32         UPL species       X 5 =  |
| Betula neo alaskana  | 2%                  |                               | Facu   | Column Totals: (A) (B)   |
| Rhod . Landron groenlindigen   |                     |                               | Fac  | PI = B/A = 2 1/0 2   |
| · Chancedaphae calkculoro  |                     | 4                             | Fach   | salix bibbiana 1/ Fac  |
| · Salix Pulchra  | 3%                  |                               | FOC W  | Betwie nama T Fac  |
| Almos virdis   | 2/.                 |                               | Fac  |  |
| · Vaccinium vitis idaca  | 5%                  |                               | Fac  |  |
| Vaccin in a Mis mosom  | 3%                  |                               | Fac.   |  |
|  |                     |                               |  | 1  |
|  | II                  |                               | Facu   |  |
| Picea glanca 1% Total Cover  |                     |                               | Facu   | 5  |
|  |                     | % of total cov                | Facu   |  |
| Picea glanca 1% Total Cover<br>50% of total cover  | 27.5 20             | % of total cov                | Facu   |  |
| Picea glanca I/ Total Cover 50% of total cover   | 27.5 20             | Dominant<br>Species?          | Facu   | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  |
| Picea glanca 1/ Total Cover 50% of total cover regeration (use scientific names of plants represented by the stratum ( 2 )   | Absolute % Cover    | Dominant                      | rer: 11 Indicator Status                                 | Dominance Test is > 50%  Prevalence Index is ≤ 3.0   |
| Picea glanca 1/. Total Cover 50% of total cover some formula cover teges of plants the stratum ( 2 )   | Absolute % Cover    | Dominant<br>Species?          | rer: 11 Indicator Status                                 | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data  |
| Picea glanca 1/. Total Cover 50% of total cover cover segeration (use scientific names of plants lerb Stratum (2)  | Absolute % Cover    | Dominant<br>Species?          | Indicator Status   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)   |
| Picea glanca 1/. Total Cover 50% of total cover  EGETATION (use scientific names of plants lerb Stratum ( 2( )  1. Calangostis (analonsis 2. Artagrastis latifalia 3. Equisation arvense   | Absolute % Cover    | Dominant<br>Species?          | Indicator Status   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data  |
| Picea glanca 1% Total Cover 50% of total cover  EGETATION (use scientific names of plants Herb Stratum ( 2( )  1. Calamograstis anadensis 2. Artagrastis latifalia 3. Equisation arvense 4. Carex equatilis  | Absolute % Cover    | Dominant<br>Species?          | Indicator Status   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  |
| Picea glanca 1% Total Cover 50% of total cover EGETATION (use scientific names of plants lerb Stratum ( 2( )  1. Calangostis analosis 2. Artagrastis latifolia 3. Causatum arvense 4. Carex aquatilis 5. Causatum palustra   | Absolute % Cover    | Dominant<br>Species?          | Indicator Status  FAC FACO CACO FACO FACO FACO FACO FACO | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unlessed.   |
| Picea glanca 1/ Total Cover 50% of total cover  EGETATION (use scientific names of plants erb Stratum (2)  · Calamagrastis canadansis · Calamagrastis latifolia · Equisation arvense · Carex aquatilis · Causetum palustre · Commarum palustre   | Absolute % Cover    | Dominant<br>Species?          | Indicator Status   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unlessed.   |
| Picea glanca 1/. Total Cover 50% of total cover  EGETATION (use scientific names of plants lerb Stratum (2())  . Calangostis (andensis . Artagostis latifolia . Equisation arvense . Carex aguatilis . Equisation palustre . Commarum palustre . Commarum palustre   | Absolute % Cover    | Dominant<br>Species?          | Indicator Status  FAC FACO CACO FACO FACO FACO FACO FACO | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unledisturbed or problematic.   |
| Picea glanca 1/. Total Cover 50% of total cover  **EGETATION (use scientific names of plants  **lerb Stratum ( 2( )  1. Calamagnostis canadansis  2. Artagnostis latifolia  3. Equisation arvense  4. Carex aquatilis  5. Equisation palustre  6. Commarum palustre  7.  8.  | Absolute % Cover    | Dominant<br>Species?          | Indicator Status  FAC FACO CACO FACO FACO FACO FACO FACO | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unledisturbed or problematic.  Bare Ground  Cover of Wetland Bryophytes  Total Cover of Bryophytes |
| Picea glanca 1/. Total Cover 50% of total cover  50% of total cover  50% of total cover  50% of total cover  50% of total cover  50% of total cover  50% of total cover  60 Calamagns tis canadassis  61. Calamagns tis canadassis  62. Artagrastis latifolia  63. Carex aquatilis  63. Carex aquatilis  64. Carex aquatilis  65. Causetom palustre  66. Commarum palustre  67.  68. | Absolute % Cover    | Dominant<br>Species?          | Indicator Status  FAC FACO CACO FACO FACO FACO FACO FACO | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unledisturbed or problematic.  ———————————————————————————————————                                |
| Picea glanca 1/. Total Cover 50% of total cover  VEGETATION (use scientific names of plants  Herb Stratum ( 2( )  1. Calangostis canadensis 2. Artagostis latifolia 3. Equisation arvense 4. Carex aquatilis 5. Equisation palostre  | Absolute % Cover    | Dominant<br>Species?          | Indicator Status  FAC FACO CACO FACO FACO FACO FACO FACO | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unledisturbed or problematic.  Bare Ground  Cover of Wetland Bryophytes  Total Cover of Bryophytes |

De

|                 |   |                           | 7/23/1                    | 5                | 6           | 1846             | 14020                                     |   | -/  |  |
|-----------------|---|---------------------------|---------------------------|------------------|-------------|------------------|---|---|---|--|
| SOIL            |   | E I                       | Date                      | Featur           | e ID_       | 1/8              |   | The lat yes                                     | Soil Pit Required (Y/N)                       |  |
| SOIL PROFIL     | E DESCRIPTION: (                              | Describe                  | to the depth              | needed to d      | ocume       | nt the i         | ndicator or co                            | nfirm the absen                                 | nce of indicators.)                           |  |
| Depth           | Matrix  |                           | Redox Feat                | ures             |             |                  |   |   | *   |  |
| (inches)        | Color (moist)                                 | %                         | Color (moist              | t) 9             | 6 Ty        | /pe <sup>1</sup> | Loc <sup>2</sup>                          | Texture   | Notes   |  |
| 0-7             |   |                           |                           |                  |             |                  |   |   |   |  |
| 7-9             |   |                           |                           |                  |             |                  |   |   |   |  |
| 9-11            | N5/6  | 85                        | 10-12-41                  | 6 15             | 5           | <u></u>          | PL/M                                      | SICL  | Saturated with free water                     |  |
|                 |   |                           |                           |                  |             |                  |   |   | over frost. Alpha alpha positi                |  |
| 11-14-          | N5/0  | 80                        | 10-12 4/                  |                  |             | C                | PLIM                                      | 8.86  | Alpha alpha positive                          |  |
| 14-17           | 5-15/1  | 25                        | 10-12 5/                  | 6 1.             | 5           | C                | M   | SICL  | Not alpha alpha positiv                       |  |
|                 |   |                           |                           |                  |             |                  |   |   |   |  |
|                 | centration, D=Deple                           | tion, RN                  | /I=Reduced M              | atrix, CS=C      | overed      | or Coa           | ated Sand Gra                             |   | n: PL=Pore Lining, M=Matrix.                  |  |
|                 | INDICATORS                                    | W Th                      | V. 200. 1                 |                  | RELL I      | Tork .           | DAY THE REAL                              |   | S FOR PROBLEMATIC HYDRIC SOILS                |  |
| Histosol or His |   |                           | Alaska                    | Gleyed (A1       | 3) <u>Y</u> |                  |   | Alaska Color Change (TA4) <sup>4</sup> <u>ル</u> |   |  |
| Histic Epipedo  | n (A2) <u>Y</u>                               |                           | Alaska                    | Redox (A14       | )_7         | <u> </u>         |   | Alaska Alpine                                   | Swales (TA5) _ \( \lambda \)                  |  |
| Black Histic (A | .3) ~   | Alaska Gleyed Pores (A15) |                           |                  |             |                  |   |   | x with 2.5Y Hue()                             |  |
| Hydrogen Sulf   | ide (A4) ~                                    |                           |                           |                  |             |                  |   | Alaska Gleye                                    | d without 5Y Hue or Redder Underlying         |  |
|                 | rface (A12) ん                                 |                           |                           |                  |             |                  |   |   | in in Notes) Reduced Matrix                   |  |
|                 |   | tation, c                 | ne primary inc            | dicator of we    | etland      | hydrolo          | gy, and an ap                             | propriate lands                                 | cape position must be present unless          |  |
| disturbed or pr | oblematic.                                    |                           |                           |                  | 1.0         | -                |   |   |   |  |
| Restrictive Lav | f color change in No<br>er (if present): Type | tes.                      | matrost                   | Depth            | (inch       | es):             | t   |   | •   |  |
|                 | 736 0 462                                     |                           |                           |                  |             |                  |   |   |   |  |
| Hydric Soil Pi  | resent (Y/N):/                                | r                         |                           |                  |             |                  |   |   | a. c  |  |
|                 |   |                           |                           | 1 10             |             | 1 1              | 7   |   |   |  |
| 140162. 17541   | ve later ex                                   | tead                      | 2 Cour                    | to 14,           | P055        | 161-10           | deeper                                    |   |   |  |
|                 |   |                           |                           |                  |             |                  |   |   | ž.  |  |
|                 |   |                           |                           |                  |             |                  |   |   |   |  |
| HYDROLOGY       | PRIMARY INDICAT                               | TORS (                    | any one indica            | ator is suffici  | ent)        | S                | SECONDARY INDICATORS (2 or more required) |   |   |  |
| Surface Water   | (A1)/\  |                           | rface Soil Cra            | cke (B6)         | N           |                  | Vater-stained                             |   | Stunted or Stressed                           |  |
| Surface water   | (A1)  |                           |                           |                  |             |                  | Leaves (B9)                               |   | Plants (D1) N                                 |  |
| High Water Ta   | ıble (A2) <u>1</u>                            | lnu<br>(B                 | Indation Visibl           | e on Aerial      | lmage       | ry C             | Drainage Patterns (B10)                   |   | Geomorphic Position (D2)                      |  |
|                 | . 4   |                           | arsely Vegeta             | ted              |             |                  | Oxidized Rhizo                            | spheres along                                   | Shallow Aquitard (D3)                         |  |
| Saturation (A3  | i)  | Co                        | ncave Surface             | e (B8) <u>//</u> |             |                  | iving Roots (0                            |   | Shallow Aquitard (D3)/                        |  |
| Water Marks (   | B1) N   | Ma                        | ırl Deposits (B           | 115) N           |             |                  | resence of R                              | educed  | Microtopographic                              |  |
|                 |   | _                         |                           |                  |             | - 11             | ron (C4) <u>7</u>                         |   | Relief (D4)                                   |  |
| Sediment Dep    | osits (B2)                                    | -   Hy<br>Od              | drogen Sulfid<br>lor (C1) | P                |             | S                | Salt Deposits (                           | (C5)  | FAC-Neutral Test (D5)                         |  |
| D.10 D. 14      | (DO) A)                                       | Dr                        | /-Season                  |                  |             | N                | lotes:                                    |   |   |  |
| Drift Deposits  | (B3) _/v                                      | Wa                        | ater Table (C2            | <u> </u>         |             |                  |   |   |   |  |
| Algal Mat or C  | rust (B4)                                     | Oti                       | ner (Explain in           | Notes):          |             |                  |   |   |   |  |
|                 |   | -                         |                           |                  |             |                  |   |   |   |  |
| Iron Deposits   | (B5) <u>\(\)</u>                              |                           |                           |                  |             |                  |   |   |   |  |
|                 |   | 100                       |                           |                  |             | 1010             |   |   | The section of the Miles of Talout March 1991 |  |
| Surface Water   | Present (Y/N): N                              |                           | Depth (in): ለ             | JA               |             |                  |   |   | an ×  |  |
| Water Table P   | resent (Y/N): ~                               |                           | Depth (in):               | 7                |             | We               | tland Hydrold                             | ogy Present (Y                                  | /N):  |  |
| Saturation Pre  | sent (Y/N)                                    |                           |                           |                  |             | 100000           | 3.2                                       |   |   |  |
| (includes capil |   |                           | Depth (in):               | 7                |             | EC:              | · Na                                      |   |   |  |
| Notes:          | 8   |                           |                           |                  |             |                  |   |   |   |  |
|                 |   |                           |                           |                  |             |                  |   |   |   |  |
|                 |   |                           |                           |                  |             |                  |   |   |   |  |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix   |
|---|
| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved         Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved         Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent   |
| Percent Cover (P): Tree (>5 dbh, >6m tall)         Sapling (<5 dbh, <6m tall)         Tall shrub (2-6m)         Name of the shrub (0.5-2m)         Short shrub (0.5-2m)         Name of tall shrub (2-6m)   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly UnevenK_ Moderately even  |
| Vegetation Density/Dominance (P): Sparse (0-20%)       Low Density (20-40%)       Medium Density (40-60%)       High Density (60-80%)         80%)       Very High Density (80-100%)       X  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water < 25% Scattered/Peripheral Cover _ 26-75% Scattered or Peripheral Cover _ N/A   |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)   |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover 1   |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface)<br>Abundant (>50% of surface)   |
| Vegetative Interspersion (P):       Low (large patches, concentric rings)       Moderate (broken irregular rings)         High (small groupings, diverse and interspersed)       X  |
| HGM Class (P): Slope Flat_X_ Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
|   |
| SOIL VARIABLES  Out Forton (P) Soil Loubing History Fibring History History Copying   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey  |
| HYDROLOGIC VARIABLES  |
| Inlet/Outlet Class (P): No Inlet/OutletX No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet  |
| Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded   |
| Evidence of Sedimentation (P): No Evidence Observed Kanada Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment   |
| Created   |
| Created   Microrelief of Wetland Surface (P): Absent   Poorly Developed (6in.)   Well Developed (6-18in.)   Pronounced (>18in.)   |
| Created         Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)         Frequency of Overbank Flooding (P): No Overbank Flooding № Return Interval 1-2 yrs Return Interval 2-5 yrs         Return Interval >5 yrs   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) X Pronounced (>18in.) Pro |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)         Frequency of Overbank Flooding (P): No Overbank Flooding № Return Interval 1-2 yrs Return Interval 2-5 yrs         Return Interval >5 yrs         Degree of Outlet Restriction (P): No Outflow № Restricted Outflow         Water pH (P): No surface water ½ Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)   Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs   Return Interval >5 yrs   Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow   Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading  |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)         Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs         Return Interval Poorly Developed (6-18in.) Pronounced (>18in.)         Pronounced (>18in.)         Return Interval 1-2 yrs Return Interval 2-5 yrs         Degree of Outlet Restriction (P): No Outflow Restricted Outflow         Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)   Frequency of Overbank Flooding (P): No Overbank Flooding ⋉ Return Interval 1-2 yrs Return Interval 2-5 yrs   Return Interval >5 yrs   Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow   Water pH (P): No surface water √ Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading  |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)         Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs         Return Interval 1-2 yrs Return Interval 2-5 yrs         Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow         Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.)   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)         Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs         Return Interval -5 yrs         Degree of Outlet Restriction (P): No Outflow Restricted Outflow         Unrestricted Outflow         Water pH (P): No surface water   |

Technician QA/QC check:

### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Feature ID: W84LH070                 | Field Target: 15156                 | Date: 7 /23 /15           |
|--------------------------------------|-------------------------------------|---------------------------|
| For all items not checked please pro | wide detailed explanation in the no | otes section of data form |

### 1. Site Description

- 图 Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included in logbook?

#### 2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- △ Vegetation names are entered legibly for all strata present?
- ☑ Cover calculations are complete and correct?
- ☑ All dominant species have been determined and recorded per strata?
- ☑ Indicator status is correct for each species?
- ☐ Dominance Test and Prevalence Index have been completed?

#### 3. Soil

- ☑ Soil profile is complete?
- Appropriate hydric soil indicators are marked?

#### 4. Hydrology

- ☑ Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

#### 5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

#### 6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- ☑ Each logbook page is initialed and dated?

#### 7. Maps

- ☆ Wetland boundaries have been corrected if necessary?

| soil pit, 1 soil plug)?                          | each Wetland Determination Data Form (2 vegetation, 1 each Observation Point (vegetation/site overview)? |
|--|--|
|  |  |
| X Jennifer Anderson<br>Wetland Scientist (print) | Signature / Date   |
|  |  |
| Fleld Crew Chief (print)                         | Signature / Date   |

8. Photos

SITE DESCRIPTION

| Survey Type: Centerline X Acce                               | ss Road (explain)            | Other (expla    | ain)                    | Field Targe     | et: <u>15 15 j</u>           | Map #: 48 Map Date: 6/18/1   |  |
|--|------------------------------|-----------------|-------------------------|-----------------|------------------------------|--|--|
| Date: 7/23/15  | Project Name & No.:          | Alaska LNG      | 60418403                |                 | Feature Id:                  | MERCHOZI   |  |
| Investigators: BS, JA  |                              |                 |                         |                 | r                            | Team No.: い行く  |  |
| State: Alaska Region: Alaska                                 |                              |                 | Milepost: 4             | 76.6            |                              | •  |  |
| Latitude: 64 31 33,44  | Longitude                    | 149 08          | 56.47                   | 7-              | Datum: WGS84                 |  |  |
| Logbook No.: 02  | Logbook Page No.:            | 7               | Picture No.:            | (~384 cit       | 021.VE                       | s vesiph pul   |  |
| SITE PARAMETERS  |                              | 91              | Carron For              | (TOP)           | The second                   |  |  |
| Subregion: 1 1   |                              | Landform (hill: | Islope, terrace         | e, hummocks     | , etc.): About Done ) Channe |  |  |
| Slope (%):   |                              |                 |                         |                 |                              | oncare Tursaeley   |  |
| Pre-mapped Alaska LNG/NWI classifica                         | tion: PEMI/SSIC              | diks lk         | ZEvidence of W          | Vildlife Use:   | looned.                      |  |  |
| Are climatic/hydrologic conditions on the Yes No (if no expl | site typical for this time o | of year?        | Are "No                 | ormal Circums   | stances" pres                |  |  |
| Are Vegetation, Soil, or Hyd                                 |                              |                 | No×                     | (If yes, expl   | ain in Notes)                |  |  |
| Are Vegetation, Soil, or Hyd                                 | Irology Naturally Pro        | oblematic?      | No×                     | _ (If yes, expl | ain in Notes.                | )  |  |
| SUMMARY OF FINDINGS  | 100                          |                 |                         |                 |                              | WATER THE RESERVE OF THE PERSON OF THE PERSO |  |
| Hydrophytic Vegetation Present? Yes_                         | No                           | ls t            | the Sampled A           | rea within a    | Wetland?                     | Yes No   |  |
| Hydric Soil Present? Yes                                     | No                           | We              | Wetland Type: PCMI/SSIE |                 |                              |  |  |
| Wetland Hydrology Present? Yes_                              | 7 No                         | Ala             | ska Vegetation          | Classification  | n (Viereck):                 | 111A3,11BZ   |  |
| Notes and Site Sketch: Please include D corridor.            | rirectional & North Arrow,   | CALLIN 1        | tanding (pically        | re, Distances   | from Centerl                 | ine, Photo Locations, and Survey   |  |
|  |                              |                 |                         |                 |                              | *  |  |
| The 160ms  |                              | -               |                         |                 | *                            | -  |  |

Page 1 of 4

| VEGETATION (use scientific names of plants | )                   |                               |                     |   |
|--|---------------------|-------------------------------|---------------------|---|
| Tree Stratum (Plot sizes: 2 ( )            | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC:((A)  Tatal Number of Dominant Species Assess All Strate(P) |
| 1.0  |                     |                               |                     | Total Number of Dominant Species Across All Strata: (B)   |
| 2.   |                     |                               |                     | % Dominant Species that are OBL, FACW, or FAC: (A/B)  |
| 3.   |                     |                               |                     |   |
| 4.   |                     |                               |                     | Prevalence Index worksheet:   |
| Total Cover:                               |                     |                               |                     | Total % Cover of: Multiply by:  |
| 50% of total cover:                        |                     | % of total cov                | er:                 | OBL species: <u>35</u> X1 = <u>35</u>   |
| Sapling/Shrub Stratum ( 2 ( )              | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species:   |
| 1. Salve ar busestoldies                   | 2                   |                               | FACIL               |   |
| 2. Salix Falcher                           | E                   |                               |                     | Column Totals: 97 (A) 219 (B)   |
| 3. Salva alexensis                         | E.                  |                               |                     | PI = B/A = 2.26   |
| 4. Salix beblina                           | C.                  |                               |                     |   |
| 5.   |                     |                               |                     |   |
| 6.   |                     |                               |                     |   |
| 7.   |                     |                               |                     |   |
| 8.   |                     |                               |                     |   |
| 9.   |                     |                               |                     | **  |
| into herb 57, 50% of total covers          |                     | % of total cove               | er:                 |   |
| VEGETATION (use scientific names of plants | )                   |                               |                     |   |
| Herb Stratum ( 26 )                        | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%   |
| 1. Catamas rostis considersis              | 60                  | 1                             | FAC                 | Prevalence Index is ≤ 3.0   |
| 2. Commercial pelastro                     | 15                  |                               | 056                 | Morphological Adaptations¹ (Provide supporting data in Notes)   |
| 3. Carex aquatilis                         | 5                   |                               | 034                 | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)   |
| 4. Cres utriculation                       | 15                  |                               | 05 =                | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless   |
| 5. Quisctom Phyratile                      | 7                   |                               |                     | disturbed or problematic.   |
| 6.   |                     |                               |                     |   |
| 7,   |                     |                               |                     | % Bare Ground   |
| 8.   |                     |                               |                     | % Cover of Wetland Bryophytes   |
| 9.   |                     |                               |                     | Total Cover of Bryophytes   |
| 10.  |                     |                               |                     | 12 % Cover of Water   |
| Total Cover:                               | 97                  |                               | l                   | Hydrophytic Vegetation Present (Y/N):   |
| 50% of total cover                         | 1.5                 | % of total cov                | er: <u>19,4</u>     | Notes: (If observed, list morphological adaptations below):   |

| SOIL                         | Charles D. C.  | 18081        | Date Fe  | ature I   | WEGU              | IN THE PARTY OF TH | A LOUIS DE LOS DE  | Soil Pit Required (Y/N)                   |  |
|------------------------------|--|--------------|--|---|-------------------|--|--|---|--|
| SOIL PROF                    | ILE DESCRIPTION: (   |              |  | 1 27 2  |                   | ndicator or co   | nfirm the abser  |   |  |
| Depth                        | Matrix   |              | Redox Features                                     |   |                   |  |  |   |  |
| (inches)                     | Color (moist)  | %            | Color (moist) % Type <sup>1</sup> Loc <sup>2</sup> |   | Type <sup>1</sup> | Loc <sup>2</sup>   | Texture  | Notes                                     |  |
| 7 - 2                        |  |              |  |   |                   |  |  |   |  |
| 2-60                         | 2 / // //  |              |  |   | - /-              |  |  | woody debris - sticks                     |  |
| -17                          | 2.5/4/3  | 50           | 7.5-12 416   | 10  | C/OX              | PLIR COM   | 5.6  | massive alpha alpha                       |  |
| N410 40                      |  |              |  |   |                   |  |  |   |  |
|                              |  |              |  |   |                   |  |  |   |  |
|                              | oncentration, D=Deple  | etion, RM    | =Reduced Matrix, CS                                | S=Cov   | ered or Coa       | ted Sand Gra   |  | n: PL=Pore Lining, M=Matrix.              |  |
|                              | IL INDICATORS  | Je ni to e   |  | Years   |                   |  | -  | FOR PROBLEMATIC HYDRIC SOILS <sup>3</sup> |  |
|                              | listel (A1) A  |              |  | Alaska Gleyed (A13)                             |                   |  | Alaska Color Change (TA4) <sup>4</sup>                                       |   |  |
|                              | don (A2)   |              | Alaska Redox (A14)                                 |   |                   |  | Alaska Alpine Swales (TA5)   |   |  |
| Black Histic                 | 1.1  |              | Alaska Gleyed                                      | Alaska Gleyed Pores (A15)                       |                   |  | Alaska Redox with 2.5Y Hue Alaska Gleyed without 5Y Hue or Redder Underlying |   |  |
| Hydrogen Sulfide (A4)        |  |              |  |   |                   |  | LayerM   | without 54 Hue or Hedder Underlying       |  |
|                              | Surface (A12)  |              |  |   |                   |  | Other (Explain   | n in Notes) 🏊 🎍 🎺 🏃 🌾 🕬 💍                 |  |
| disturbed or<br>Give details | problematic.<br>of color change in No  | tes.         |  |   |                   |  | propriate landso   | cape position must be present unless      |  |
| Restrictive L                | ayer (if present): Type  | :_N          | De   | epth (ir  | nches): N         | Δ  |  |   |  |
| lydric Soil                  | Present (Y/N):   | 1            |  |   |                   |  |  |   |  |
| -                            |  |              |  | _   |                   |  |  |   |  |
| 101001 (-10                  | ling throughout  |              |  |   |                   |  |  |   |  |
|                              |  |              |  |   |                   |  |  |   |  |
|                              | The Country of the Co |              |  |   |                   |  |  |   |  |
| IYDROLOG                     | Y PRIMARY INDICAT  | rons (ar     | y one indicator is su                              | fficient  | ) SE              | CONDARY  | INDICATORS (   | 2 or more required)                       |  |
| Surface Wat                  | er (A1)  |              |  | e Soil Cracks (B6) Water-stained<br>Leaves (B9) |                   |  | N_   | Stunted or Stressed Plants (D1)           |  |
| ligh Water                   | Γable (A2)   | (B7)         |  | ial Ima   | J DI              |  | rns (B10)  | Geomorphic Position (D2)                  |  |
| Saturation (A                | <b>(3)</b>   | Spar<br>Cond | sely Vegetated<br>cave Surface (B8)                | J   |                   | kidized Rhizos<br>ving Roots (C  | spheres along<br>3)  | Shallow Aquitard (D3)                     |  |
| Vater Marks                  | (B1)   | Marl         | Deposits (B15) N                                   |   |                   | esence of Re<br>on (C4)  | duced  | Microtopographic + Section Relief (D4)    |  |
| Lludena                      |  |              | anna Cultida                                       |   |                   |  |  | 1 1                                       |  |

| HYDROLOGY PRIMARY INDICATO                            | ORS (any one indicator is sufficient)     | SECONDARY INDICATORS (2 or more required)        |  |  |  |  |
|---|---|--|--|--|--|--|
| Surface Water (A1)                                    | Surface Soil Cracks (B6)                  | Water-stained<br>Leaves (B9)                     | Stunted or Stressed Plants (D1)        |  |  |  |
| High Water Table (A2)                                 | Inundation Visible on Aerial Imagery (B7) | Drainage Patterns (B10)                          | Geomorphic Position (D2)               |  |  |  |
| Saturation (A3)                                       | Sparsely Vegetated Concave Surface (B8)   | Oxidized Rhizospheres along<br>Living Roots (C3) | Shallow Aquitard (D3)                  |  |  |  |
| Water Marks (B1) Marl Deposits (B15)                  |   | Presence of Reduced<br>Iron (C4)                 | Microtopographic + Society Relief (D4) |  |  |  |
| Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)     |   | Salt Deposits (C5)                               | FAC-Neutral Test (D5)                  |  |  |  |
| Drift Deposits (B3) Dry-Season Water Table (C2)       |   | Notes: Massive S.L will be slowly permable       |  |  |  |  |
| Algal Mat or Crust (B4)                               | Other (Explain in Notes):                 |  |  |  |  |  |
| Iron Deposits (B5)                                    |   |  |  |  |  |  |
|   |   |  |  |  |  |  |
| Surface Water Present (Y/N):                          | Depth (in): 🌊                             |  | 1                                      |  |  |  |
| Water Table Present (Y/N):                            | Depth (in): 결                             | Wetland Hydrology Present (Y/N): _               | it (Y/N):                              |  |  |  |
| Saturation Present (Y/N): (includes capillary fringe) |   | EC: 160-15 5 24                                  | PA                                     |  |  |  |
| Notes:  |   |  |  |  |  |  |
|   |   |  |  |  |  |  |
|   |   |  |  |  |  |  |
|   |   |  |  |  |  |  |

# AQUATIC SITE ASSESSMENT DATA FORM

| Primary Vegetation Type (P):     Vegetation Lacking     Forested-Deciduous-Needle-leaved     Forested-Deciduous-Broad-leaved       Forested-Evergreen-Needle-leaved     Scrub Shrub-Deciduous-Needle-leaved     Scrub Shrub-Deciduous-Broad-leaved       Scrub Shrub-Evergreen-Broad-leaved     Scrub Shrub-Evergreen-Needle-leaved     Emergent-Non-persistent     Emergent-Non-persistent  |
|--|
| PersistentK Aquatic Bed  |
| Percent Cover (P): Tree (>5 dbh, >6m tall)       Sapling (<5 dbh, <6m tall)       Tall shrub (2-6m)       1       Short shrub (0.5-2m)         Dwarf shrub (<0.5m)   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven K Moderately even   |
| Vegetation Density/Dominance (P):         Sparse (0-20%)         Low Density (20-40%)         Medium Density (40-60%)         High Density (60-80%)  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="2">25% Scattered/Peripheral Cover</a> <a href="2">26-75% Scattered or Peripheral Cover</a> <a href="2">N/A</a>  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) K High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover  |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)   |
| Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
|  |
| SOIL VARIABLES   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric<br>Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey  |
| HYDROLOGIC VARIABLES   |
| HIDROLOGIC VARIABLES   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Outlet Inlet/Intermittent Outlet Perennial Outlet Inlet/Intermittent Outlet Intermittent Outlet Inlet/Intermittent Outlet Inlet/Intermittent Outlet Inlet/Intermittent Outlet Inlet/Intermittent Outlet Inlet/Intermittent Outlet Intermittent Outlet Inlet/Intermittent Outlet Inl |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Peren   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennia |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Peren   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent I                   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/I |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inl                 |
| Inlet/Outlet Class (P): No Inlet/Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Interm               |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent                              |

Page 4 of 4

#### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Feature ID: W84LH021 | Field Target: 15 15 9 | Date: 7 / | 23/15 |
|----------------------|-----------------------|-----------|-------|
| ·                    |                       |           |       |

For all items not checked, please provide detailed explanation in the notes section of data form.

#### 1. Site Description

- Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included in logbook?

#### 2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- ☑ Vegetation names are entered legibly for all strata present?
- ☐ Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- ☑ Indicator status is correct for each species?
- Dominance Test and Prevalence Index have been completed?

#### 3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

#### 4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

#### 5. Functions and Values

☑ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

#### 6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- Each logbook page is initialed and dated?

#### 7. Maps

- ☑ Wetland boundaries have been corrected if necessary?
- ☑ Maps are initialed and dated?

#### 8. Photos

| X | Four photos    | were taken for | each Wetlan | d Determination | Data Form | (2 vegetation, | . 1 |
|---|----------------|----------------|-------------|-----------------|-----------|----------------|-----|
|   | soil pit, 1 so | il plug)?      |             |                 |           |                |     |

☐ Two photos were taken for each Observation Point (vegetation/site overview)?

| X Jennifer Anderson       | X John Mr        |
|---------------------------|------------------|
| Wetland Scientist (print) | Signature / Date |

| X Brien Strong           | X Don Sn         |
|--------------------------|------------------|
| Field Crew Chief (print) | Signature / Date |

| SITE DESCRIPTION  Survey Type: Centerline  Acce  | ss Road (explain)   | Other (eynla                             | in)   | Field Target: 19                                    | 5143                                     | Map #:Map Date: @UVS   |  |
|--|---|--|---|---|--|--|--|
| Date: 7/23/15  | Project Name & No.:   |  |   |   |  | W84LH022   |  |
| Investigators: BS 5A   | Troject Name a Non 2  | racona zivo                              | 00110100                                      |   |  | Team No.: WT-  |  |
| State: Alaska  | Region: Alaska  | Ĭ  | Milepost: ∠                                   | 1954  |  | 100000000000000000000000000000000000000  |  |
| Latitude: 64°24'38.42  |   | Longitude                                | 149.15.0                                      |   |  | Datum: WGS84   |  |
| Logbook No.:   |   |  |   |   | 27                                       | NEG-VEG_PIT_PLUL   |  |
|  | Logbook Fage.No.  | , ,                                      | Tictale No.:                                  | W6 ( L170 )   |  | VICE - VICE and 1) and 100   |  |
| SITE PARAMETERS  |   | 30 30 50                                 |   |   |  |  |  |
| Subregion: 1 Lector  | •   |  | Landform (hill                                | Islope, terrace, hu                                 | ımmock                                   | s, etc.): Terracc  |  |
| Slope (%): 1 - 2 %   |   |  | Local relief (c                               | oncave, convex, r                                   | none):[-                                 | lat Hommocker smo  |  |
| Pre-mapped Alaska LNG/NWI classifica   | ation: U; LCZ   |  | Evidence of V                                 | Vildlife Use: ん。                                    | ne o                                     | bserved  |  |
| Are climatic/hydrologic conditions on the site typical for this time of year?  Yes No (if no explain in Notes)   |   |  |   |   |  |  |  |
| Are Vegetation, Soil, or Hyd   |   |  |   | (If yes, explain i                                  |  |  |  |
| Are Vegetation, Soil, or Hyd   | drology Naturally Pro   | oblematic?                               | No>   | (If yes, explain i                                  | n Notes                                  | .)   |  |
| SUMMARY OF FINDINGS  |   | War and                                  |   |   | E S                                      |  |  |
| Hydrophytic Vegetation Present? Yes_   | > No  | ls t                                     | he Sampled A                                  | Area within a Wet                                   | land?                                    | Yes NoX  |  |
| Hydric Soil Present? Yes_  | No  | _ We                                     | tland Type:                                   |   | 7  |  |  |
| Wetland Hydrology Present? Yes_  | No  | - Ala                                    | ska Vegetatior                                | Classification (V                                   | iereck):                                 | 102,1182   |  |
| Notes and Site Sketch: Please include Ecorridor.  Open (Nh. te Spruce 30-50)  trees 25-30' tall, Unzer Corpet of feather Moss 1550es, At LZ 484.4 ()  relatively slowly over a No mar available due to | the and belob tall, Scattere story of larges. Point moved for banks SE of point mostly flat grant relocation of Point States. | willow. 2 (100 a plings ) rom se nt) the | Large of Picoun of Picoun lected for a much ! | unllow, Mi<br>So-60' ta<br>un and 13-<br>eld target | 11 mil 19' + Ti 10ca + Ti 10ca + Ti 10ca | 15-20'-fall<br>xed with smaller Picci<br>all Bebs willow.<br>tion due to accessability<br>area transitions |  |

Page 1 of 4

F 32 4-107 5

| VEGETATION (use scientific names of plants |                     |                               |                     |  |
|--|---------------------|-------------------------------|---------------------|--|
| Tree Stratum (Plot sizes: (00)             | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: (A)  Total Number of Dominant Species Across All Strata: (B)  |
| 1. Picka glavca                            | 20%                 | Ÿ                             | FACU                | % Dominant Species that are OBL, FACW, or FAC: (A/B)   |
| 2. Salix bebbiana                          | 10%                 | 7                             | FAC                 | 75 Bolliman operior marais est, (New, or Ne (VS)   |
| 3. <sub>5</sub> ,                          |                     |                               |                     |  |
| 4.   |                     |                               |                     | Prevalence Index worksheet:  |
| Total Cover:                               | 30                  |                               |                     | Total % Cover of: Multiply by:   |
| 50% of total cover:                        | 15 20               | % of total cove               | er:6                | OBL species:X 1 =  |
| Sapling/Shrub Stratum ( 26 )               | Absolute            | Dominant                      | Indicator           | FACW species:X 2 =   |
|  | % Cover             | Species?                      | Status              | FAC species  |
|  |                     | (Y/N)                         |                     | FACU species 2 5 X 4 = 100   |
| 1. Salix bebbiana                          | 30%                 | 7                             | FAC                 | UPL speciesX 5 =   |
| 2. Alnus in carna                          | 4/-                 |                               | FAC                 | Column Totals: 123 (A) 394 (B)   |
| 3. Rosa acicularis                         | 5                   |                               | FACU                | PI = B/A = 3,20  |
| 4. Vibyraum edule                          | 47.                 |                               | FACU                |  |
| 5. Salix Pscodo renticola 4-7              | 1%                  |                               | FAC                 |  |
| 6. Prea genioa                             | 15                  | 7                             | FACU                | and the second s |
| 7. Ca 0                                    |                     |                               |                     |  |
| 8.   |                     |                               |                     |  |
| 9.   |                     |                               |                     | and the second s |
| Total Cover:                               |                     |                               |                     |  |
| 50% of total cover:                        | 29.5 20             | % of total cove               | er:                 |  |
| >  | X .                 |                               |                     |  |

| VEGETATION (use scientific names of plant  | s)                  |                               |                     |  |
|--|---------------------|-------------------------------|---------------------|--|
| Herb Stratum ( 2C )  | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:   |
| 1. Revisetum arvense<br>2. Calamagrostus canadensis<br>3. Cornus (andadensis<br>4. Rubus articus | 50/.<br>T<br>8      | 7                             | FAC<br>FAC<br>FACU  | ✓ Prevalence Index is ≤ 3.0     ✓ Morphological Adaptations¹ (Provide supporting data in Notes)     ✓ Problematic Hydrophytic Vegetation¹ (Explain)     ¹ Indicators of hydric soil and wetland hydrology must be present unless |
| 5. Mertensis paniculata<br>6. Orthelia secunda   | T                   |                               | FACU                | disturbed or problematic.  |
| 7. Chamerion angustilolie<br>8. Spinulum annotinum   | 3                   |                               | FAC                 | % Bare Ground  CO % Cover of Wetland Bryophytes  Total Cover of Bryophytes   |
| 9. Stellaria 50  10. Pumbla 50  Postradyberigus T Total Cover  50% of total cover                |                     | % of total cov                | er: 12,4            | Words: (If observed, list morphological adaptations below):  |
| -  |                     |                               |                     | Litter 15  |

| WEIL                       | AND DETE                                | IXIVII     | 7/23/15  |             |                   | 14022                                   |                         | 7  |
|----------------------------|---|------------|--|-------------|-------------------|---|-------------------------|--|
| SOIL                       | Service Association                     | 5 Vas 1    |  | eature ID   |                   |   | 1 7 m                   | Soil Pit Required (Y/N)  |
| SOIL PROF                  | ILE DESCRIPTION: (                      | Describe   | to the depth neede   | d to docu   | ment the          | indicator or co                         | nfirm the absenc        | ce of indicators.)   |
| Depth                      | Matrix                                  |            | Redox Features   |             |                   |   |                         |  |
| (inches)                   | Color (moist)                           | %          | Color (moist)  | %           | Type <sup>1</sup> | Loc <sup>2</sup>                        | Texture                 | Notes  |
| 0-2                        |   |            |  |             |                   |   |                         |  |
| 2.4                        |   |            |  |             |                   |   |                         | nearly Oa  |
| 4-9                        | 107R4/4                                 | 93         | 2.5-15/1   | 7           | D -               | PL/RC                                   | VFSaL                   |  |
| 1                          |   |            | 1072 5/6   | 2           | C                 | M                                       | 77.0                    |  |
| 9-13                       | 5-15/2                                  | 97         | 10-125/6   | 3           | C                 | M                                       | f'SaL                   | concentrations at bottom of  |
| 13-21                      | 1, ,                                    | 1.6        | 575/17   | 3           | D                 | PHRE                                    | 1                       | horizon - finer texture belo   |
| 13-21                      | 5-15/2                                  | 92         | 7.5 ye 4/6   | 5           | C                 | M                                       | v+SaL                   | Parent material colors-low   |
|                            | Concentration, D=Depl                   | etion, RN  | /I=Reduced Matrix, (   | CS=Cove     | red or Co         | ated Sand Gra                           |                         | PL=Pore Lining, M=Matrix.  FOR PROBLEMATIC HYDRIC SOILS <sup>3</sup>   |
| THE PERSON NAMED IN COLUMN | DIL INDICATORS                          |            |  | 1 (4 40)    | A TOTAL BEI       | 101111111111111111111111111111111111111 | Director (Whitesterner) | TRANSPORT TO THE PROPERTY OF T |
|                            | Histel (A1)                             |            | Alaska Gleye   |             |                   |   |                         | Change (TA4) <sup>4</sup> N  |
|                            | don (A2)                                |            | Alaska Redox   |             |                   | 1                                       |                         | Swales (TA5)   |
| Black Histic               | (A3)\                                   |            | Alaska Gleye   | d Pores (   | A15)              |   |                         | with 2.5Y Hue<br>without 5Y Hue or Redder Underlying   |
| Hydrogen S                 | ulfide (A4)                             | -          |  |             |                   |   | Layer_ N                | - Without 31 The of Hedder officerrying  |
|                            | Surface (A12) <i>N</i>                  |            |  |             |                   |   | Other (Explain          |  |
| <sup>3</sup> One indicat   | tor of hydrophytic vege<br>problematic. | etation, o | ne primary indicator   | of wetlar   | nd hydrolo        | ogy, and an ap                          | propriate landsc        | ape position must be present unless  |
|                            | s of color change in No                 | otes.      |  |             |                   |   |                         |  |
| Restrictive L              | ayer (if present): Typ                  | 10: NA     |  | Depth (in   | iches):           | J A                                     |                         |  |
|                            |   |            |  |             |                   |   | - 2                     |  |
|                            | Present (Y/N):                          |            |  |             |                   |   |                         | 1 2 2  |
| Notes: ພວ                  | Il drained so                           | oil Pa     | stile Ni Te  | rmaf.       | rost.             | State fire                              | e larcers of            | allorism.  |
|                            |   | ,          |  |             | - 1               |   |                         |  |
|                            |   |            |  |             |                   |   |                         |  |
| HYDROLOG                   | SY PRIMARY INDICA                       | TORS (a    | any one indicator is   | sufficient) |                   | SECONDARY                               | INDICATORS (2           | 2 or more required)  |
|                            |   |            | ()   |             |                   | Water-stained                           |                         | Stunted or Stressed  |
| Surface Wat                | ter (A1)N                               | Su         | rface Soil Cracks (B   | 6)          |                   | _eaves (B9)                             | N_                      | Plants (D1)  |
| High Water                 | Table (A2)                              |            | ndation Visible on A   | erial Ima   | gery              | Drainage Patte                          | erns (B10) _ N          | Geomorphic Position (D2)   |
|                            |   | - (B7      | arsely Vegetated   | ,           |                   |   | spheres along           |  |
| Saturation (A              | A3)N                                    |            | ncave Surface (B8)   | N           |                   | iving Roots (C                          |                         | Shallow Aquitard (D3)  |
| Water Marks                | s (B1)                                  | Ma         | rl Deposits (B15)  | N           |                   | Presence of Reduced<br>Iron (C4)        |                         | Microtopographic<br>Relief (D4)  |
| Sediment De                | eposits (B2)                            |            | drogen Sulfide<br>or (C1)  | _           |                   | Salt Deposits (                         | C5) /                   | FAC-Neutral Test (D5) 📉  |
| Drift Deposit              | ts (B3)                                 | Dry        | r-Season<br>ater Table (C2)  |             | 1                 | Notes:                                  | ,#                      |  |
| Algal Mat or               | Crust (B4)                              |            | ner (Explain in Notes  | s):         |                   |   |                         |  |
| Iron Deposits              |   |            |  |             |                   |   |                         |  |
| non Debosit                | o (DO)                                  | 11,010     | No. of the last of |             | Ser. (1908)       |   | 274430,000              |  |
| Surface Wat                | ter Present (Y/N):                      |            | Depth (in): NA   |             |                   |   |                         |  |
|                            |   |            | 130  |             | We                | tland Hydrolo                           | ogy Present (Y/I        | N):  |
| 7.00                       | Present (Y/N):                          |            | Depth (in):  |             |                   |   | *                       |  |
| (includes cap              | resent (Y/N):<br>pillary fringe)        | 7          | Depth (in): NA   |             | EC                | ·                                       |                         |  |
| Notes:                     |   |            |  |             |                   |   |                         |  |

# AQUATIC SITE ASSESSMENT DATA FORM

|   | M= Matrix   |
|---|---|
| Forested-Evergreen-Needle-leaved  | acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-  |
| Percent Cover (P): Tree (>5 dbh, >6m tall)_<br>Dwarf shrub (<0.5m) Tall herb (≥1  | Sapling (<5 dbh, <6m tall)  |
| Number of Wetland Types (M):  | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)   | (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-  |
| Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered  | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A   |
| Plant Species Diversity (P): Low (< 5 plant   | species) Medium (5-25 species) High (>25)   |
| Presence of Islands (M): Absent (none)  | One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): Open Small Scattered Patches  | No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover  |
| <b>Dead Woody Material (P)</b> : Low Abundance Abundant (>50% of surface)   | (0-25% of surface) Moderately Abundant (25-50% of surface)  |
| Vegetative Interspersion (P): Low (large<br>High (small groupings, diverse and interspers   | e patches, concentric rings) Moderate (broken irregular rings)ed)ed)ed)   |
| HGM Class (P): Slope Flat   | Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
| COU VARIARI FO  |   |
| Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy   | Histosol:Fibric Histosol:Hemic Histosol: Sapric<br>Mineral: Silty Mineral: Clayey   |
| HYDROLOGIC VARIABLES  |   |
| Outlet Intermittent Inlet/Intermittent  | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No  |
| Inlet/Intermittent Outlet Perennial I   | Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet   |
|   | onally Flooded, Temporarily Flooded, Saturated  |
| Wetland Water Regime (P): Drier: Seas<br>Wet: Perm. Flooded, Intermittently Exposed,<br>Evidence of Sedimentation (P): No Eviden  | onally Flooded, Temporarily Flooded, Saturated  |
| Wetland Water Regime (P): Drier: Seas<br>Wet: Perm. Flooded, Intermittently Exposed,<br>Evidence of Sedimentation (P): No Eviden<br>Created   | nlet/Perennial Outletsonally Flooded, SaturatedSemiperm. Flooded  |
| Wetland Water Regime (P): Drier: Seas<br>Wet: Perm. Flooded, Intermittently Exposed,<br>Evidence of Sedimentation (P): No Eviden<br>Created<br>Microrelief of Wetland Surface (P): Absent   | ce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment  |
| Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflood   | nlet/Perennial Outletsonally Flooded, Saturatedsemiperm. Floodedsemiperm. Floodedsemiperm. Floodedsemiperm. Floodedsemiperm. Flooded Fluvaquent Soils Sediment Fluvaquent Soils Sediment Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) |
| Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Eviden Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C  | Inlet/Perennial Outlet  |
| Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Co Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable   | sonally Flooded, Temporarily Flooded, Saturated   |
| Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Co Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low  | sonally Flooded, Temporarily Flooded, Saturated   |
| Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Neturn Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Comparison of Compa     | Inlet/Perennial Outlet  |
| Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Comparing Comparing Composited Comparing Composited Compo | Inlet/Perennial Outlet  |
| Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created  Frequency of Overbank Flooding (P): No Created  Frequency of Overbank Flooding (P): No Created  Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Created  Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Second Seeps  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolated Only Connected Above Connected   | Inlet/Perennial Outlet  |
| Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created  Frequency of Overbank Flooding (P): No Created  Frequency of Overbank Flooding (P): No Created  Outlet Restriction (P): No Outflow Water pH (P): No surface water Comparison  Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Second Seeps and Springs (P): No Second Seeps and Second Secon         | Inlet/Perennial Outlet  |

Crew Chief QA/QC check:

GPS Technician QA/QC check

### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

|         | 100111-22   |
|---------|---|
|         | e ID: <u>W 84 LH D 2 2</u> Field Target: 157 4 3 Date: 7/27 / 15  |
| For all | items not checked, please provide detailed explanation in the notes section of data form.   |
|         |   |
|         |   |
| 1.      | Site Description  |
|         | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included in logbook?   |
| 2.      | Vegetation  |
|         | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?   |
|         | ∀ Vegetation names are entered legibly for all strata present?     Cover calculations are complete and correct?   |
|         | All dominant species have been determined and recorded per strata?  |
|         | Indicator status is correct for each species?   |
|         | Dominance Test and Prevalence Index have been completed?  |
| 3.      | Soil  |
|         | Soil profile is complete? Appropriate hydric soil indicators are marked?  |
| 4.      | Hydrology   |
|         | Appropriate hydrology indicators are marked?  Surface water, water table, and saturation depths are recorded if present?  |
| 5.      | Functions and Values  |
|         | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?  |
| 6.      | Field Logbook   |
|         | Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?  Exact logbook page is initialed and dated? |
| 7.      | Maps  |
|         |   |

Wetland boundaries have been corrected if necessary?

Maps are initialed and dated?

| 8. | Pł | 10 | to | S |
|----|----|----|----|---|
|    |    |    |    |   |

| 刄 | Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 |
|---|--|
|   | soil pit, 1 soil plug)?  |
|   | Two photos were taken for each Observation Point (vegetation/site overview)?     |
|   |  |
|   |  |

| X Jannifer                | Anderson | X Oerula         | Anderson. | 1/23 /IT |
|---------------------------|----------|------------------|-----------|----------|
| Wetland Scientist (print) | 7        | Signature / Date |           | / -      |

X Bryon Strong
Field Crew Chief (print)

Signature / Date

X Bryon

7/23/15

| SITE DESCRIPTION                                    |                                 |  |                  |  |                            |
|---|---------------------------------|--|------------------|--|----------------------------|
| Survey Type: Centerline X Acce                      |                                 |  | District Control | Field Target: 15089                          | Map #: 65 Map Date: 6/18/1 |
| Date: 7/30/15                                       | Project Name & No.:             | Alaska LNG   | 60418403         | Feature Id                                   | :W84L14023                 |
| Investigators: BS, JA                               |                                 |  |                  |  | Team No.: Work             |
| State: Alaska                                       | Region: Alaska                  |  | Milepost: 4      | 32   |                            |
| Latitude: 65 04 48.58                               |                                 | Longitude  | : 148041         | 128.38                                       | Datum: WGS84               |
| Logbook No.: 02                                     | Logbook Page No.:               | 08   | Picture No.:     | W84 LH027 .11                                | EG_VEG_PIT_PLUG            |
| SITE PARAMETERS                                     |                                 |  |                  | 0 0 (0) 0 2 3 - 0 1                          | CG_VCG_PII_PLUG            |
| Subregion: (nterior Highle                          | -)                              |  | Landform (hil    | Island torred however                        |                            |
| Slope (%): 3  | 272)                            |  | Landioiii (iiii  | Islope, terrace, hummocks                    | s, etc.): errace           |
| Pre-mapped Alaska LNG/NWI classifica                | ation: Pseud                    | 0 -  |                  | concave, convex, none):                      |                            |
| Are climatic/hydrologic conditions on the           | e site typical for this time of | of year?   |                  | Vildlife Use: Mosscormal Circumstances" pres |                            |
| Yes No (if no exp                                   | ain in Notes)                   |  | Yes_\            | No (If no, exp                               | ent:<br>plain in Notes.)   |
| Are Vegetation, Soil, or Hyd                        |                                 | Commence of the Commence of th | No_X             | _(If yes, explain in Notes)                  |                            |
| Are Vegetation, Soil, or Hyd<br>SUMMARY OF FINDINGS | drology Naturally Pr            | roblematic?  | No_X             | _ (If yes, explain in Notes.                 | )                          |
| See             |                                 |  |                  |  |                            |
| Hydrophytic Vegetation Present? Yes_                | No                              | _ ls t   | the Sampled A    | rea within a Wetland?                        | Yes NoX                    |
| Hydric Soil Present? Yes_                           | No                              | We   | tland Type: (    | )  | - CM-7112                  |
| Wetland Hydrology Present? Yes_                     | No ×                            | Ala  | ska Vegetation   | Classification (Viereck):                    | 100                        |
| PSS4/FO4/S  | 102/18<br>PEMIC; 111A3          | 2<br>K<br>+023   | O', lar          |  | 1884 162 183<br>1162 183   |
|   | 75545                           |  |                  |  |                            |

| ree Stratum (Plot sizes: 100)   | Absolute<br>% Cover  | Dominant<br>Species?<br>(Y/N)         | Indicator<br>Status                   | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: 3  Total Number of Dominant Species Across All Strata: 1  |
|---|--|---------------------------------------|---------------------------------------|--|
| Betula nevalaskana  | 40%  | 4                                     | Facu                                  | % Dominant Species that are OBL, FACW, or FAC: 43  |
| Picen glavea  | 5%   |                                       | Facil                                 |  |
| Salix bebliana  | 15%  | Y                                     | Fac                                   |  |
|   |  |                                       |                                       | Prevalence Index worksheet:  |
| Total Cove  | r: (00 %   |                                       |                                       | Total % Cover of: Multiply by:   |
| 50% of total cove   | r: <u>30%</u> 20   | % of total cov                        | er: 2                                 | OBL species:X 1 =  |
| Sapling/Shrub Stratum ( 24 )  | Absolute   | Dominant                              | Indicator                             | FACW species: 55 X 2 = 110   |
|   | % Cover  | Species?                              | Status                                | FAC speciesX 3 =X 7  |
|   |  | (Y/N)                                 | 7.                                    | FACU species 98 X4 = 392   |
| .Salix bebbiana   | 2%   |                                       | Fac                                   | UPL speciesX 5 =   |
| 2. Almus virdis   | 10%  | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | Fac                                   | Column Totals: 182 (A) 589 (B)   |
| 3. Rosa acicularis  | 10%  | 1                                     | Facu                                  | PI = B/A = 3.2   |
| 1. V. burnom edule  | 15%  | 7                                     | Facu                                  |  |
| 5. Rhododen dran grocalandis  | um T   |                                       | Fac                                   |  |
| 8. Vaccinium vitis-idaea  | 21.  |                                       | FOL                                   |  |
| 7. Linger borealis  | .21.   |                                       | Facu                                  |  |
| . Privated Dover !! )   | 01   |                                       | 1 cu u                                |  |
|   | -  |                                       | 1 ac a                                |  |
| 8   | E  |                                       | Facy                                  |  |
| 8   | E  |                                       |                                       |  |
| Picea glavea 10'  | E<br>er: 41  | 0% of total co                        | Facy                                  |  |
| 9. Picea glasca 10' Total Cove  | er: 20.5 20  | 0% of total co                        | Facy                                  |  |
| Total Cove  50% of total cove  VEGETATION (use scientific names of plan   | er: 20.5 20  | Dominant Species?                     | Facy                                  | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0   |
| 9. Picea glasca 10'  Total Cove 50% of total cove  VEGETATION (use scientific names of plan  Herb Stratum (   | er: 30.5 20  Absolute  | Dominant<br>Species?                  | Fac II                                | Dominance Test is > 50%  Prevalence Index is ≤ 3.0   |
| 9. Picea glasca 10'  Total Cove 50% of total cove  VEGETATION (use scientific names of plan   | er: 30.5 20  Absolute % Cover  | Dominant<br>Species?                  | ver: 8.2 Indicator Status             | Dominance Test is > 50%  |
| 9. Picea glasca 10'  Total Cove 50% of total cove  VEGETATION (use scientific names of plan  Herb Stratum (   | er: 30.5 20  Absolute % Cover  | Dominant<br>Species?                  | Fac U  Indicator Status  Fac W        | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data  |
| 9. Picea glasca 10' Total Cove 50% of total cove  VEGETATION (use scientific names of plan Herb Stratum ( 26 )  1. Equisation patensa   | er: 30.5 20  Absolute % Cover  | Dominant<br>Species?                  | Fac U  Indicator Status  Fac W  Fac U | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unit  |
| 9. Picea glasca 10' Total Cover 50% of total cover 10'  VEGETATION (use scientific names of plan Herb Stratum ( ) 1. Equisation patensis  2. Cornus canadansis  3. Martensia Paniculata   | er: 30.5 20  Absolute % Cover  | Dominant<br>Species?                  | Fac U Fac U Fac U                     | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  |
| 9. Picea glasca 10' Total Cover 50% of total cover 50% of total cover 100 (use scientific names of plan Herb Stratum ( 16 )  1. Equisation patensis 2. Cornus canadansis 3. Martensia paniculata 4. Picola asarifolia 5. Picola asarifolia  | er: 30.5 20  Absolute % Cover  | Dominant<br>Species?                  | Fac U Fac U Fac U                     | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic.   |
| 7. Picea glasca 10' Total Cove 50% of total cove  VEGETATION (use scientific names of plan Herb Stratum ( ) ( ) )  1. Equisation prations 2. Cornus canadensis 3. Mertensia pranculata 4. Pirala asarifolia 5. Pirala serifolia   | er: 30.5 20  Absolute % Cover  | Dominant<br>Species?                  | Fac U Fac U Fac U                     | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic.  ———————————————————————————————————  |
| 9. Picea glasca 10' Total Cove 50% of total cove  VEGETATION (use scientific names of plan Herb Stratum ( 26 )  1. Equisation patensa 2. Cornus canadensis 3. Mertensia paniculata 4. Picola asarifolia 5. Picola asarifolia 6. Mobhringia lateriflora  | er: 30.5 20  Absolute % Cover  | Dominant<br>Species?                  | Fac U Fac U Fac U                     | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic.  ""  Bare Ground  ""  Cover of Wetland Bryophytes  |
| 9. Picea glasca 10'  Total Cover 50% of total cover 50% of total cover 10 particles and 10 | er: 30.5 20  Absolute % Cover  | Dominant<br>Species?                  | Fac U Fac U Fac U                     | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unidisturbed or problematic.  ""Bare Ground "" "Bare Ground "" "Cover of Wetland Bryophytes "Total Cover of Bryophytes                   |
| Total Covers 50% of total | er: 30.5 20  Absolute % Cover  | Dominant<br>Species?                  | Fac U Fac U Fac U                     | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present undisturbed or problematic.  ""Bare Ground "" "Bare Ground "" "Cover of Wetland Bryophytes "Total Cover of Bryophytes "" "Cover of Water |
| 9. Picea glasca 10' Total Cove 50% of total cove  VEGETATION (use scientific names of plan Herb Stratum ( 26 )  1. Equisation patensa 2. Cornus canadensis 3. Mertensia paniculata 4. Pirola asarifolia 5. Pirola asarifolia 6. Mochringia lateriflora 7.  8.   | E er: 4  er: 30.5 20 ats)  Absolute % Cover 55/. 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 | Dominant<br>Species?                  | Fac U Fac U Fac U                     | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unidisturbed or problematic.  ""Bare Ground "" "Bare Ground "" "Cover of Wetland Bryophytes "Total Cover of Bryophytes                   |

| Depth (inches) Matrix Redox Features  Color (moist) % Color (moist) %  |  |   |   |                     |                                    |  |   | of indicators.)  |
|--|--|---|---|---------------------|------------------------------------|--|---|--|
| (inches)   | Color (moist)  | %   | Color (moist)   | %                   | Type <sup>1</sup>                  | Loc <sup>2</sup>   | Texture   | Netes  |
| 0-2.5  |  |   |   | 70                  | Турс                               | LOC  | Texture   | Notes  |
| 2.5-5  | 7.57x 3/4  | 100   |   |                     | FIEL .                             |  |   |  |
| 5-14   | 2.5-15/3   | 96  | 10-12 5/4   | 4                   | C                                  | A 4  | SIL   | Granular   |
| - 1  |  | 10  | 101274  | 11                  |                                    | M  | SIL   | S.L/vfSal Platy  |
| 14-20  | 2.5-15/3   | 96  | 10 125/4  | 4                   | C                                  | M  | SIL   | charcoal fragment  |
|  |  | 1   | 1   | 17                  |                                    | 100  | 21  | S.L/vfSeL  |
| ¹Type: C=Co  | oncentration, D=Depl   | etion PM  | - Podused Metric  | 00.0                |                                    |  |   | The season ballot home   |
| HYDRIC SO  | IL INDICATORS  | euon, niv   | i=neduced Matrix, (   | CS=Covere           | ed or Coa                          | ated Sand G  |   | PL=Pore Lining, M=Matrix.  |
| Histosol or H  | listel (A1) N  |   | Alaska Gleyer   | d (A13)             | J                                  |  |   | FOR PROBLEMATIC HYDRIC SOI   |
| Histic Epiped  | don (A2)   |   | Alaska Redox  |                     |                                    |  |   | hange (TA4) <sup>4</sup>   |
| Black Histic (   |  |   | Alaska Gleyed   |                     |                                    |  |   | Swales (TA5)   |
| Hydrogen Su  | ulfide (A4) N  | 2   | - Indiana Gioyot  | a i oles (A         | 15)                                |  | Alaska Gleyed   | with 2.5Y Hue<br>without 5Y Hue or Redder Underlyin  |
| Thick Dark S   | urface (A12)N  |   |   |                     |                                    | 184  | Other (Explain i  | n Notes)   |
| One indicato   | or of hydrophytic vege   | etation, or   | ne primary indicator  | of wetland          | hydrolog                           | y, and an a  | ppropriate landscar   | n Notes) pe position must be present unless  |
| Hydric Soil F  | Present (Y/N):   | )   |   | -                   |                                    |  |   |  |
|  | Present (Y/N):   | )   |   |                     |                                    |  | <i>51</i> 7   |  |
| Notes:   | Present (Y/N):A  |   |   | ufficient)          | SI                                 | ECONDARY   | INDICATORS (2 c   | or more required)  |
| Notes:   |  | TORS (ar  |   | 15 66 13 7          | W                                  | ater-stained   | INDICATORS (2 c   | Stunted or Stressed  |
| Notes: HYDROLOGY Surface Wate  | Y PRIMARY INDICA   | TORS (an  | ny one indicator is s   | i) N                | - W                                | ater-stained<br>aves (B9) _  |   | Stunted or Stressed Plants (D1)  |
| Notes: HYDROLOGY Surface Wate  | Y PRIMARY INDICA<br>or (A1)N<br>able (A2)N   | Surfi   | ny one indicator is s<br>ace Soil Cracks (B6<br>dation Visible on Ae  | 6) N<br>erial Image | W Le                               | ater-stained<br>aves (B9) _<br>ainage Patte  | erns (B10) N  | Stunted or Stressed  |
| Notes:  HYDROLOGY  Surface Wate  High Water Ta   | Y PRIMARY INDICA<br>or (A1)<br>able (A2)<br>3)   | Surfi<br>Inun<br>(B7)<br>Spar<br>Cond                         | ace Soil Cracks (B6   | erial Image         | Ty Dr Ox Liv                       | ater-stained<br>aves (B9) _<br>ainage Patte<br>didized Rhizo<br>ring Roots (C<br>esence of Re                            | educed  | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic             |
| Notes:  HYDROLOGY Surface Wate High Water Ta   | Y PRIMARY INDICATOR (A1) \(\nabla\) able (A2) \(\nabla\)   | Surfa<br>Inun<br>(B7)<br>Spar<br>Cond<br>Marl                 | ace Soil Cracks (Bedation Visible on Aersely Vegetated cave Surface (B8)  | erial Image         | W Le Ty Dr Ox Liv                  | ater-stained<br>aves (B9) _<br>ainage Patte<br>didized Rhizo<br>ring Roots (C<br>esence of Re                            | perns (B10) Nospheres along C3) Nospheres along C3)   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4) |
| HYDROLOGY Surface Water High Water Ta Saturation (A3)  | Y PRIMARY INDICA  or (A1) N  able (A2) N  (B1) N  cosits (B2) N  | Surfa<br>Inun<br>(B7)<br>Spar<br>Cond<br>Marl<br>Hydr<br>Odor | ace Soil Cracks (B6<br>dation Visible on Ac<br>rsely Vegetated<br>cave Surface (B8)<br>Deposits (B15)   | erial Image         | W Le ry Dr Ox Liv Pre Iro          | ater-stained<br>aves (B9)<br>ainage Patte<br>kidized Rhizo<br>ring Roots (C<br>esence of Re<br>n (C4)                    | perns (B10) Nospheres along C3) Nospheres along C3)   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic             |
| HYDROLOGY Surface Water High Water Ta Saturation (A3) Water Marks ( Sediment Dep   | Y PRIMARY INDICATOR (A1) What is able (A2) What is able (A2) What is able (B1) What is able (B2) What is able (B3) What  | Surfa Inun (B7) Spai Cone Marl Hydr Odor Dry-S Wate           | ace Soil Cracks (B6<br>dation Visible on Ac<br>rsely Vegetated<br>cave Surface (B8)<br>Deposits (B15)<br>rogen Sulfide<br>r (C1)  | S) N<br>erial Image | W Le ry Dr Ox Liv Pre Iro          | ater-stained aves (B9)ainage Patter idized Rhizoring Roots (Cesence of Ren (C4)  | perns (B10) Nospheres along C3) Nospheres along C3)   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4) |
| Notes:  HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks ( Sediment Dep  | Y PRIMARY INDICATOR (A1) What is able (A2) What  | Surfa Inun (B7) Spai Cone Marl Hydr Odor Dry-S Wate           | ace Soil Cracks (B6 dation Visible on Ae rsely Vegetated cave Surface (B8) Deposits (B15) ogen Sulfide r (C1) Season er Table (C2)  | S) N<br>erial Image | W Le ry Dr Ox Liv Pre Iro          | ater-stained aves (B9)ainage Patter idized Rhizoring Roots (Cesence of Ren (C4)  | perns (B10) Nospheres along C3) Nospheres along C3)   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4) |
| Notes:  HYDROLOGY Surface Wate High Water Ta Saturation (A3 Water Marks ( Sediment Dep Drift Deposits Algal Mat or C ron Deposits (                                      | Y PRIMARY INDICA  or (A1) \(\nable \)  able (A2) \(\nable \)  (B1) \(\nable \)  (B3) \(\nable \)  (B3) \(\nable \)  crust (B4) \(\nable \)  (B5) \(\nable \)   | Surfi Inun (B7) Span Cond Marl Hydr Odor Dry-S Wate           | ace Soil Cracks (B6<br>dation Visible on Ae<br>rsely Vegetated<br>cave Surface (B8)<br>Deposits (B15)<br>rogen Sulfide<br>r (C1)<br>Season<br>er Table (C2)<br>r (Explain in Notes)   | S) N<br>erial Image | W Le ry Dr Ox Liv Pre Iro          | ater-stained aves (B9)ainage Patter idized Rhizoring Roots (Cesence of Ren (C4)  | perns (B10) Nospheres along C3) Nospheres along C3)   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4) |
| HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks ( Sediment Dep Drift Deposits Algal Mat or C ron Deposits ( Surface Water                               | Y PRIMARY INDICATOR (A1) White Present (Y/N): N  | Surfi Inun (B7) Span Cond Marl Hydr Odor Dry-S Wate           | ace Soil Cracks (B6 dation Visible on Ae rsely Vegetated cave Surface (B8) _ Deposits (B15) _ rogen Sulfide r (C1) _ Fraction of the control | S) N<br>erial Image | W Lee Ty Dr Ox Liv Price Iro Sa No | ater-stained<br>aves (B9)<br>ainage Patte<br>didized Rhizo<br>ring Roots (C<br>esence of Re<br>n (C4)<br>It Deposits (c  | perns (B10) Nospheres along C3) Nospheres along C3)   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4) |
| HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks ( Sediment Dep Drift Deposits Algal Mat or C ron Deposits ( Surface Water Water Table P Saturation Pres | Y PRIMARY INDICATOR (A1)   | Surfa Inun (B7) Spar Conc Marl Hydr Odor Dry-S Wate           | ny one indicator is s  ace Soil Cracks (B6 dation Visible on Ae rely Vegetated cave Surface (B8) _  Deposits (B15) _  ogen Sulfide r (C1) _  Frable (C2) _  or (Explain in Notes)  Depth (in):  | S) N<br>erial Image | Wetla                              | ater-stained aves (B9)   | perns (B10) Nospheres along C3) Nospheres along C5) | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4) |
| HYDROLOGY Surface Water High Water Ta Saturation (A3 Water Marks ( Sediment Dep Drift Deposits Algal Mat or C ron Deposits ( Surface Water Water Table P                 | Y PRIMARY INDICATOR (A1) And (A2) And (A2) And (A2) And (A3) And ( | Surfa Inun (B7) Spar Conc Marl Hydr Odor Dry-S Wate           | ace Soil Cracks (B6 dation Visible on Ae resely Vegetated cave Surface (B8) Deposits (B15) Ogen Sulfide r (C1) Fraction (Explain in Notes) Depth (in):  | S) N<br>erial Image | Wetla                              | ater-stained<br>aves (B9)<br>ainage Patter<br>didized Rhizo<br>ring Roots (C<br>esence of Re<br>n (C4)<br>It Deposits (c | perns (B10) Nospheres along C3) Nospheres along C5) | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4) |

# AQUATIC SITE ASSESSMENT DATA FORM

|  | n= Matrix   |
|--|---|
| Forested-Evergreen-Needle-leaved<br>Scrub Shrub-Evergreen-Broad-leaved<br>Persistent Aquatic Bed | Scrub Shrub-Deciduous-Needle-leaved   |
| Percent Cover (P): Tree (>5 dbh, >6m tall)_<br>Owarf shrub (<0.5m) Tall herb (≥1                 | Sapling (<5 dbh, <6m tall)  |
|  | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| 80%) Very High Density (80-100%)   |   |
| nterspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere                           | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A   |
| Plant Species Diversity (P): Low (< 5 plant  | species) Medium (5-25 species) High (>25)   |
| Presence of Islands (M): Absent (none) _   | One or Few Several to Many N/A  |
|  | No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site   |
|  | (0-25% of surface) Moderately Abundant (25-50% of surface)  |
| High (small groupings, diverse and interspers  | e patches, concentric rings) Moderate (broken irregular rings)sed)  |
| HGM Class (P): Slope Flat  | Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
| ka a lama  |   |
| SOIL VARIABLES  Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy                  | Histosol:Fibric Histosol:Hemic Histosol: Sapric  Mineral: Clayey  |
| HYDROLOGIC VARIABLES   |   |
|  | No Inlet/Intermittent OutletNo Inlet/Perennial Outlet Intermittent Inlet/No nt Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inl |
| Wetland Water Regime (P): Drier: Sea<br>Wet: Perm. Flooded, Intermittently Exposed,              | asonally Flooded, Temporarily Flooded, Saturated  |
| Evidence of Sedimentation (P): No Evide  | ence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment  |
|  | nt Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)   |
| Frequency of Overbank Flooding (P): No Return Interval >5 yrs                                    | Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs   |
| Degree of Outlet Restriction (P): No Outflo  | ow Restricted Outflow Unrestricted Outflow  |
| Water pH (P): No surface water   | Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) PH Reading  |
| Glacial Till/Not Permeable   | d (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits   |
| Basin Topographic Gradient (M): Low<br>Evidence of Seeps and Springs (P): No S                   | w Gradient (<2%) High Gradient (≥2%)<br>Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring  |
| LANDSCAPE VARIABLES (M)  |   |
| Only Connected Above Connec  | ated Wetlands within 400m, Not Connected Only Connected Below cted Upstream & Downstream Unknown  |
| Wetland Land Use: High Intensity (i.e.   | e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)  |
| Watershed Land Use: 0-5% Rural   | 5-25% Urbanized >50% Urbanized  |
| Size: Small (<10 acres) Me   | edium (10-100 acres) Large (>100 acres)   |

Crew Chief QA/QC check

GPS Technician QA/QC check:

### Wetland Determination Data Form QA/QC Checklist

This form to be completed before leaving the field site.

| Featur | re ID: W84LH023 Field Target: 15189 Date: 7/30/15  |
|--------|--|
|        | items not checked, please provide detailed explanation in the notes section of data form.  |
|        |  |
| 1.     | Site Description   |
|        | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included?   |
| 2.     | Vegetation   |
|        | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  |
|        | <ul><li>Vegetation names are entered legibly for all strata present?</li><li>Cover calculations are complete and correct?</li></ul>  |
|        | All dominant species have been determined and recorded per strata?   |
|        | Indicator status is correct for each species?  |
|        | Dominance Test and Prevalence Index have been completed?   |
| 3.     | Soil   |
|        | Soil profile is complete?  Appropriate hydric soil indicators are marked?  |
| 4.     | Hydrology  |
|        | Appropriate hydrology indicators are marked?  Surface water, water table, and saturation depths are recorded if present?   |
| 5.     | Functions and Values   |
|        | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6.     | Field Logbook  |
|        | <ul> <li>Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?</li> <li>Each logbook page is initialed and dated?</li> </ul> |

### 7. Maps

- Metland boundaries have been corrected if necessary?
- Maps are initialed and dated?

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

XJennifer Anderson July 7/30/15
Wetland Scientist (print)

Brean Strong Bully 7/30/15

| State: Alaska  Latitude: 65 ° 04 ′ 44 .59  Logbook No.: 02  SITE PARAMETERS  Subregion: 1  | Project Name & No Region: Alaska  Logbook Page No.:  ion: () / / (2)  site typical for this time ain in Notes)  rology Significant  rology Naturally  No No  No No  rectional & North Arron  rectio | Longitude:  Longitude:  e of year?  httly Disturbed?  Problematic?  Is the weter the w | Milepost: 4  Picture No.:  Landform (hill  Local relief (contraction of Ware "No Yes No Xes N | slope, terrace, hummoncave, convex, none vildlife Use: Money (If no, Life yes, explain in No Life yes, | Datum: WGS84  Datum: WGS84  NEG-VCG-PIT-PLUC  Docks, etc.): Terrace  Dispersent:  Explain in Notes.)  Dies)  |
|--|--|--|--|--|--|
| Investigators: State: Alaska  Latitude: 65°04'44'59  Logbook No.: 02  SITE PARAMETERS  Subregion: In ferror (fight)  Slope (%): 2  Pre-mapped Alaska LNG/NWI classification  Are climatic/hydrologic conditions on the syes No (if no explain)  Are Vegetation, Soil, or Hydromatical Original | Region: Alaska  Logbook Page No.:  ion: () / 1 (2)  site typical for this time in Notes)  rology Significant rology Naturally  No   | Longitude:  Longitude:  e of year?  httly Disturbed?  Problematic?  Is the weter the w | Milepost: 4  | Feature 132  Slope, terrace, hummoncave, convex, none wildlife Use: Money (If no, Lift yes, explain in No Lift yes, explain in | Datum: WGS84  Datum: WGS84  NEG-VCG-PIT-PLUC  Docks, etc.): Terrace  Discord varn, +s  present: explain in Notes.)  Dites.)  |
| State: Alaska  Latitude: 65°04′44′59  Logbook No.: 02  SITE PARAMETERS  Subregion: In ferror I fight  Slope (%): 2  Pre-mapped Alaska LNG/NWI classificati  Are climatic/hydrologic conditions on the syes   | Region: Alaska  Logbook Page No.:  ion: () / 1 (2)  site typical for this time in Notes)  rology Significant rology Naturally  No   | Longitude:  Longitude:  e of year?  httly Disturbed?  Problematic?  Is the weter the w | Milepost: 4  | slope, terrace, hummoncave, convex, none vildlife Use: Money (If no, Life yes, explain in No Life yes, | Datum: WGS84  Da |
| State: Alaska  Latitude: 65°04′44′59  Logbook No.: 02  SITE PARAMETERS  Subregion: 1 for or 1 | Region: Alaska  Logbook Page No.:  ion: // / 2  site typical for this time in Notes)  rology Significant rology Naturally  No No_  | e of year?  Problematic?  Is the Weten Alas  | Milepost: 4  i /48° 40.2  Picture No.:  Landform (hill  Local relief (continue)  Are "None Yes  No  No  he Sampled Authority (hill)  tland Type:   | slope, terrace, hummoncave, convex, none vildlife Use: Moscormal Circumstances" No(If yes, explain in No   | Datum: WGS84  NEG-VCG-PIT_PLUG  OOCKS, etc.): Terrace  3): Flat Humnocky S  Sign ground vann, +s  present: explain in Notes.)  otes.)  |
| SITE PARAMETERS  Subregion: In ferror I fight  Slope (%): 2  Pre-mapped Alaska LNG/NWI classificati  Are climatic/hydrologic conditions on the syes  | Logbook Page No.:  cology  Site typical for this time ain in Notes)  rology  No  No  No  No  No  No  No  No  No  N   | e of year?  Is the wet Alas  | Picture No.:  Landform (hill Local relief (continue)  Are "None None None None None None None None   | slope, terrace, hummoncave, convex, none vildlife Use: Moscormal Circumstances" No(If yes, explain in No   | ocks, etc.): Terrace  3): Flat Humocky.s  resplain in Notes.)  otes.)  |
| SITE PARAMETERS  Subregion: In ferror I fight  Slope (%): 2  Pre-mapped Alaska LNG/NWI classificati  Are climatic/hydrologic conditions on the syes  | ion: () / 1 (2) site typical for this time tin in Notes) rology Significan rology Naturally  No No No No   | e of year?  Is the wet Alas  | Landform (hill Local relief (co Evidence of W Are "No Yes No No No The Sampled Antiand Type:   | slope, terrace, hummoncave, convex, none viidlife Use: Moscommal Circumstances" No(If no,(If yes, explain in No  | ocks, etc.): Terrace  3): Flat Humocky.s  resplain in Notes.)  otes.)  |
| Subregion: In ferror I fight  Slope (%): 2  Pre-mapped Alaska LNG/NWI classificati  Are climatic/hydrologic conditions on the syes   | site typical for this time sin in Notes)  rology Significar  rology Naturally  No No  No No  | Problematic?  Is the Wet Alas  | Landform (hill Local relief (co Evidence of W Are "No Yes_ No_ No_  he Sampled Antland Type:   | slope, terrace, hummoncave, convex, none Vildlife Use: Mermal Circumstances" No (If no, (If yes, explain in No (If yes, explain in No  | pocks, etc.): Terrace  a): Flat, Idumnocky s  Sign ground varn, ts  present: explain in Notes.)  otes.)  |
| Pre-mapped Alaska LNG/NWI classifications on the street climatic/hydrologic conditions on the street conditions on the st | site typical for this time sin in Notes)  rology Significar  rology Naturally  No No  No No  | Problematic?  Is the Wet Alas  | Local relief (control Evidence of Williams Are "No Yes No Xes No  | vildlife Use: Messer Messer Moncave, convex, none vildlife Use: Messer Messer Moncay (If no, Life yes, explain in No Life yes, | present: explain in Notes.)  ptes.)  |
| Slope (%): 2  Pre-mapped Alaska LNG/NWI classification of the state of | site typical for this time sin in Notes)  rology Significar  rology Naturally  No No  No No  | Problematic?  Is the Wet Alas  | Local relief (control Evidence of Williams Are "No Yes No Xes No  | vildlife Use: Messer Messer Moncave, convex, none vildlife Use: Messer Messer Moncay (If no, Life yes, explain in No Life yes, | present: explain in Notes.)  ptes.)  |
| Are climatic/hydrologic conditions on the syes   | site typical for this time ain in Notes)  rology Significan  rology Naturally  No No  No No  | Problematic?  Is the Wet Alas  | Are "No Yes No Xes No X | Vildlife Use: Moscommal Circumstances" No (If no, _(If yes, explain in No _ (If yes, explain in No   | present: explain in Notes.)  otes.)  |
| Are climatic/hydrologic conditions on the stress of some conditions on the stress of some conditions on the stress of some conditions on the stress of bebt we concern the stress of the | site typical for this time ain in Notes)  rology Significan  rology Naturally  No No  No No  | Problematic?  Is the Wet Alas  | No No No No No No the Sampled Alland Type:   | mal Circumstances" No (If no, _(If yes, explain in No _ (If yes, explain in No   | present:<br>explain in Notes.)<br>etes)  |
| Are Vegetation, Soil, or Hydro Are Vegetation, Soil, or Hydro Are Vegetation, Soil, or Hydro BUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes Vetland Hydrology Present? Yes Vetland Hydrology Present? Yes Vetland Site Sketch: Please include Direction.  And the State of State   | rology Significar rology Naturally  No No  No No   | Problematic?  Is the Wet Alas  | No_X No_X he Sampled A   | No (If no, _(If yes, explain in No _ (If yes, explain in No _ rea within a Wetland   | explain in Notes.)  otes)  otes.)  |
| Are Vegetation, Soil, or Hydro SUMMARY OF FINDINGS Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes  Wetland Hydrology Present? Yes  lotes and Site Sketch: Please include Dinorridor.  Mature whate Stephanic Stephani                    | No N   | Problematic?  Is the Wet Alas  | No×<br>he Sampled A  | _ (If yes, explain in No   | otes.)   |
| Hydrophytic Vegetation Present? Yes  | No X   | Is the Wet Alas  | he Sampled A   | rea within a Wetland   |  |
| Hydrophytic Vegetation Present? Yes  | NoNo   | Wet Alas   | tland Type:  |  | 1? Yes No  |
| Vetland Hydrology Present? Yes   | NoNo   | Wet Alas   | tland Type:  |  | 1? Yes No  |
| Vetland Hydrology Present? Yes   | No No  | Alas   |  |  |  |
| lotes and Site Sketch: Please include Diriorridor.  Mature white Streenings of bebbononcom, Feather Mos  | rectional & North Arroy  | u Contouline L   | ska Vegetation   |  |  |
| penings of bebb with orche, Feather mos  | rectional & North Arrov  | w, Centerline, Le  |  | Classification (Vierec   | k): (AZ  |
| 1 N  | PEMIC,   | * 431.9  | Me -   | LHOZY  | Publish  |

| VEGETATION (use scientific names of plants) |                     |                               |                     |  |  |               |  |  |
|---|---------------------|-------------------------------|---------------------|--|--|---------------|--|--|
| Tree Stratum (Plot sizes: (00)              | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | No. of Dominant S  | ominance Test worksheet:  o. of Dominant Species that are OBL, FACW, or FAC: (A)  otal Number of Dominant Species Across All Strata: (B) |               |  |  |
| 1. Picca glavea (165')                      | 45/                 | +                             | Fac U               | STATE OF THE PROPERTY OF THE PARTY OF THE PA |  |               |  | C: 40% (A/B)   |
| 2. Salix bebbiana (25')                     | 57/.                |                               | Fac                 |  | PRESIDENCE DE LA   |               | S ADDRESS OF THE PARTY OF THE P | PROPERTY AND PROPE |
| 3. Betula revalasticana                     | 5/.                 |                               | Facu                |  |  |               | A STATE OF THE STA |  |
| 4.  |                     |                               |                     | Prevalence Inde  |  | et:           | NA delat   | bug  |
| Total Cover:                                |                     |                               |                     | Total % Cover of:  | :  |               | Multiply   | DY:  |
| 50% of total cover:                         | 28.5 20             | % of total cov                | er:  \-             | OBL species:   |  | X 1 = _       | ero candinoro  |  |
| Sapling/Shrub Stratum ( 25 )                | Absolute            | Dominant                      | Indicator           | FACW species:_   |  |               | 70   |  |
| 10  | % Cover             | Species?<br>(Y/N)             | Status              |  | 140  | X3=_<br>_X4=_ | 510  |  |
| 1. Picen glavea 6-15'                       | 31/-                |                               | Facu                | UPL species  |  | X5=           |  |  |
| 2. Salix bebbiana 10-15'                    | 17                  | 1                             | Fac                 | Column Totals:_  | 223  | 17-7-2000     |  | (B)  |
| 3. V. burum edok                            | 17.                 |                               | Facu                | PI = B/A =   | ,47  |               |  |  |
| 4. Linaen borealis                          | 45%                 | 7                             | Fae U               |  |  |               |  |  |
| 5. Rhododendran groenlandico                | MT                  |                               | Fac                 | 1  |  |               |  |  |
| 6.  |                     |                               |                     |  |  |               |  |  |
| 7.  |                     |                               |                     | 1  |  |               | 17   |  |
| 8.  |                     |                               |                     | 1  |  |               |  |  |
| 9.  |                     |                               |                     |  |  |               |  |  |
| Total Cover                                 | : 50                |                               |                     |  |  |               |  |  |
| 50% of total cover                          | 1:25 20             | 0% of total cov               | ver:10              | 100000000000000000000000000000000000000  |  |               |  |  |
|   |                     |                               | The latest and      |  | HINNIG CO.   |               |  |  |

| Herb Stratum ()               | % Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Note: Dominance Test is > 50%  Prevalence Index is ≤ 3.0 |
|-------------------------------|---------|-------------------------------|---------------------|--|
| 1. Calamagrostis canadensis   | 10%     |                               | Fac                 | Morphological Adaptations <sup>1</sup> (Provide supporting data in                           |
| 2. Eguisation pratense        | 35%     | 4                             | FORM                | Notes)   |
| 3. Cornus canadensis          | 40%     | 7                             | Facu                | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                                    |
| 4. Mertensia Peniculata       | Ť       |                               | FOR U               | 1 Indicators of hydric soil and wetland hydrology must be present unless                     |
| 5. Calamagiostis lapponica    | T       |                               | Fac                 | disturbed or problematic.  |
| 6. Equisation Sylvaticum      | 30%     | 1                             | Fac                 |  |
| 7. Pyrola asprifolia          | 17.     |                               | Facu                | % Bare Ground  |
| 8. Orthélia Secunda           | T       |                               | Facu                | Cover of Wetland Bryophytes  |
| 9. Arctagrostis latifolia     | 1       |                               | FaceW               | Total Cover of Bryophytes % Cover of Water   |
| 10. Perola minor              | 7       |                               | Fac                 | Hydrophytic Vegetation Present (Y/N):  |
| Pubus arcticus T Total Cover: | 116     | -11                           | Fac                 | Notes: (If observed, list morphological adaptations below):                                  |
| 50% of total cover:           |         | 0% of total co                | ver: 23.2           |  |
|                               |         |                               |                     | Feather Moss 80  |

Notes:

| SOIL   |                       |                              | 7/30/15<br>Date Featur   |         | 0070                                | 4024   |                   |  |  |  |
|--|-----------------------|------------------------------|--|---------|-------------------------------------|--|-------------------|--|--|--|
|  | FILE DESCRIPTION:     | Describe                     | - Joseph   |         | ont the i                           | ndiantau   |                   | Soil Pit Required (Y/N)                        |  |  |
| Depth  | Matrix Redox Features |                              |  |         | confirm the absence of indicators.) |  |                   |  |  |  |
| (inches)   | Color (moist)         | %                            |  | % T     | ima1                                | 1 1 2 7  |                   |  |  |  |
| 7-3  | Color (molot)         | 70                           | Color (moist)  | /o I    | ype <sup>1</sup>                    | Loc <sup>2</sup>   | Texture           | Notes  |  |  |
| 3.5  | 10764/7               | 7.0                          |  | -       | -                                   |  | -                 |  |  |  |
|  | 7.5823/4              | 30                           |  | _       |                                     |  | 5.0               | Mix of Bw, Th and E &                          |  |  |
| -15  | 5-15/2                | 40                           | 10-n 5/6 5   | 2       | 0                                   |  | 1 /2              |  |  |  |
| 10   | 10784/4               | 55                           | 10-12016   | >       |                                     | M  | VESAL             | Platy Frost mottles                            |  |  |
| 5-21   | 515/2                 | 25                           |  | _       |                                     |  | 0.0               |  |  |  |
| -21  | 10424/4               | 25                           |  | +       |                                     |  | VESAL             | Platy few roots                                |  |  |
| Type: C=C  |                       | 1                            | I=Reduced Matrix, CS=C   | overed  | tor Coo                             | tod Cond Co  | 21 1              |  |  |  |
| YDRIC SC   | OIL INDICATORS        |                              | - reduced Watrix, CO=C   | overed  | or Coa                              | ited Sand Gr   |                   | PL=Pore Lining, M=Matrix.                      |  |  |
| istosol or h                                       | Histel (A1)           |                              | Alaska Gleyed (A13   | 2) B    | 7                                   |  |                   | FOR PROBLEMATIC HYDRIC SOILS3                  |  |  |
| istic Epipe  | don (A2) _ N          |                              | Alaska Redox (A14  |         | )                                   |  |                   | hange (TA4) <sup>4</sup>                       |  |  |
| lack Histic  |                       | - N= T = 1                   | Alaska Gleyed Pore   |         | E) /                                | Title  | Swales (TA5)      |  |  |  |
|  | ulfide (A4) N         | •                            | Alaska Gleyeu Pole   | 35 (A 1 | 0)                                  | Alaska Redox with 2.5Y Hue/_ Alaska Gleyed without 5Y Hue or Redder Unde |                   |  |  |  |
|  |                       | 4                            | the state of the s | S ELL   |                                     | Layer  |                   |  |  |  |
| nick Dark S  | Surface (A12)         |                              |  |         |                                     |  | Other (Explain    | n Notes)<br>pe position must be present unless |  |  |
| lotes: We  | Il drained, h         | do se                        | strictive larger   | 11      | 24"                                 | ere freeze   |                   |  |  |  |
| YDROLOG  | Y PRIMARY INDICAT     | TORS (ar                     | ny one indicator is sufficie   | ent)    | SE                                  | CONDARY  | INDICATORS (2 d   | or more required)                              |  |  |
| urface Wate  | er (A1)               |                              | ace Soil Cracks (B6)   | N       | - Wa                                | ater-stained<br>aves (B9)  | N                 | Stunted or Stressed Plants (D1)                |  |  |
| gh Water T   | Table (A2)            | (B7)                         | _ N  |         |                                     |  | erns (B10)        | Geomorphic Position (D2)                       |  |  |
| aturation (A                                       | (3) _ N               | Spa                          | rsely Vegetated<br>cave Surface (B8)   | AD II   | Liv                                 | ing Roots (C   |                   | Shallow Aquitard (D3)                          |  |  |
| Water Marks (B1) Marl Deposits (B15)               |                       |                              |  |         |                                     | esence of Ren (C4)   | educed            | Microtopographic<br>Relief (D4)                |  |  |
| Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)  |                       |                              |  | Sal     | t Deposits (0                       | C5) N  |                   |  |  |  |
| ediment De   | Miles III IN-IN-      | Odo                          | (C1)N  |         |                                     | MIN-3-200 SI   |                   | FAC-Neutral Test (D5)                          |  |  |
|  | s (B3)N               | Odo<br>Dry-                  | C(C1) Season Pr Table (C2)   | Lings   | Not                                 | tes:   |                   | FAC-Neutral Test (D5)                          |  |  |
| rift Deposits                                      |                       | Dry-S<br>Wate                | C(C1) N  |         | Not                                 | tes:   | the minutes       | FAC-Neutral Test (D5)                          |  |  |
| rift Deposits                                      | Crust (B4)            | Dry-S<br>Wate                | Geason Pr Table (C2)   |         | Not                                 | tes:   |                   | FAC-Neutral Test (D5)                          |  |  |
| rift Deposits                                      | Crust (B4)            | Odor<br>Dry-<br>Wate<br>Othe | Season Pr Table (C2) Pr (Explain in Notes):  |         | Not                                 | tes:   |                   | FAC-Neutral Test (D5)                          |  |  |
| rift Deposits gal Mat or ( on Deposits urface Wate | Crust (B4)            | Odor Dry-Wate Othe           | Geason Pr Table (C2)   |         |                                     |  | gy Present (Y/N): |  |  |  |

# AQUATIC SITE ASSESSMENT DATA FORM

| Secret Cover (P): Tree (>5 dbh, >6m tall)   | VEGETATION VARIABLES P= Plot, M  |   |
|---|--|---|
| Nover I Stribution of Denistry (P): Low (25%) Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-60%) Weyr High Density (60-100%) Low Density (20-40%) Medium Density (40-60%) High Density (60-60%) Weyr High Density (60-100%) Low Density (20-40%) Medium Density (40-60%) High Density (60-60%) Weyr High Density (60-100%) Low Density (20-40%) Medium Density (40-60%) High Density (60-60%) Weyr High Density (60-100%) Weyr High Density (60-100%) Low Density (20-40%) Medium Density (40-60%) High Density (60-60%) Weyr High Density (60-100%) Low Density (20-40%) Medium Density (40-60%) High Density (60-60%) Weyr High Density (60-100%) Low Density (20-40%) Medium Density (40-60%) High Density (60-60%) Low Density (40-60%) Low Density (40-60                      | Forested-Evergreen-Needle-leavedScrub Shrub-Evergreen-Broad-leavedPersistent Aquatic Bed | Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Bload-leaved Emergent-Non-persistent Emergent-    |
| Low Density (20-40%)   Medium Density (40-60%)   High Density (60-10%)   Very High Density (60-10%)   Low Density (20-40%)   Medium Density (40-60%)   High Density (60-10%)   Very High Den                        | Dwarf shrub (<0.5m) Tall herb (≥1  | Im) Short herb (<1m) Moss-Lichen Floating Submerged   |
| Note  |  |   |
| Plant Species Diversity (P): Low (< 5 plant species)  | Vegetation Density/Dominance (P): Sparse 80%) Very High Density (80-100%)                | e (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60<br>)                                |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover Observed Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover Observed Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover Observed Stems 1 or Moderately Abundant (25-50% of surface)  Abundant (>550% o                      | Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere                  | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A           |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover Observed Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover Observed Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover Observed Stems 1 or Moderately Abundant (25-50% of surface)  Abundant (>550% o                      |  |   |
| Cover Distribution of Dominant Layer (P): No Veg. Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover Markey Markey (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% Urbanized (25-50% Urbanized) Moderately Abundant (25-50                      |  |   |
| Dead Woody Material (P): Low Abundanče (0-25% of surface)  Moderately Abundant (256% of surface)  Wegetative Interspersion (P): Low (large patches, concentric rings)  Moderate (broken irregular rings)  High (small groupings, diverse and interspersed)  HGM Class (P): Slope  Flat  Lacustrine Fringe  Depressional  Riverine  Estaurine Fringe  SOIL VARIABLES  SOIL Factors (P): Soil Lacking  Histosol: Floric  Mineral: Sity  Mineral: Clayey  Mineral: Clayey  HYDROLOGIC VARIABLES  Intervited Class (P): No IntelVolute  Intermittent Outlet  Intermittent Intel/Perennial Outlet  Intermittent Intel/Perennial Outlet  Intermittent Intel/Perennial Outlet  Perennial Intel/Perennial Outlet  Perennial Intel/Perennial Outlet  Perennial Intel/Perennial Outlet  Wet Perm. Flooded, Intermittent Outlet  Wet Perm. Flooded, Intermittent (P): No Evidence Observed  Sediment Observed on Wetland Substrate  Fluvaquent Soils Sediment  Created  Wet Perm (P): No Evidence Observed  Sediment Observed on Wetland Substrate  Fluvaquent Soils Sediment  Frequency of Overbank Flooding (P): No Overbank Flooding  Return Interval 1-2 yrs  Return Interval 2-5 yrs  Return Interval 5-5 yrs  Return Interval 5-5 yrs  Pergee of Outlet Restriction (P): No Overbank Flooding  Water pH (P): No surface water  Circumneutral (5.5-7.4)  Alkaline (-7.4)  Acid (-5.5)  PH Reading  Perennial Intervitent Spring  Perennial Intervitent  Perennial Intervitent  Perennial Intervitent  Perennial Intervitent  Perennial Intervitent  Perennial Outlet  Perennial Intervitent  Perennial Interviten                      | Cover Distribution of Dominant Layer (P):  | No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site                                     |
| High (small groupings, diverse and interspersed)  HGM Class (P): Slope  |  |   |
| SOIL VARIABLES  Soil Factors (P): Soil Lacking  |  |   |
| Soil Factors (P): Mineral: Sandy Histosol:Fibric Mineral: Clayey Mineral: Sarvelly Mineral: Sandy Mineral: Sand                      | HGM Class (P): Slope Flat  | Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
| Soil Factors (P): Mineral: Sandy Histosol:Fibric Mineral: Clayey Mineral: Sarvelly Mineral: Sandy Mineral: Sand                      |  |   |
| Intervitted Class (P): No Inlet/Outlet  | Soil Factors (P): Soil Lacking   | Histosol:Fibric Histosol:Hemic Histosol: Sapric y Mineral: Clayey   |
| Inlet/Outlet Class (P): No Inlet/Outlet   |  |   |
| Outlet  |  | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No                                |
| Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded  Evidence of Sedimentation (P): No Evidence Observed  Sediment Observed on Wetland Substrate  Fluvaquent Soils Sediment  Created  Microrelief of Wetland Surface (P): Absent  Poorly Developed (6in.)  Well Developed (6-18in.)  Pronounced (>18in.)  Pronounced (\$18in.)  Pronounced (\$18 | Outlet Intermittent Inlet/Intermitten  | nt Outlet Intermittent iniet/Perennial Outlet Perennial Iniet/No Outlet Intermittent iniet/Perennial Outlet |
| Evidence of Sedimentation (P): No Evidence Observed   | Wetland Water Regime (P): Drier: Sea   | asonally Flooded, Temporarily Flooded, Saturated  |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (\$ 18in.)   | Evidence of Sedimentation (P): No Evide  | ence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment                              |
| Return Interval >5 yrs  | Microrelief of Wetland Surface (P): Absen  | nt Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)                                     |
| Degree of Outlet Restriction (P): No Outflow  | Frequency of Overbank Flooding (P): No   |   |
| Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits   | - 10 - 10 - 10 - 10 - 10 - 10 - 10 - 10  |   |
| Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%)  Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream Unknown  Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)  Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized  | Water pH (P): No surface water   | Cilcumitedual (5.5 7.4)   |
| Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream Unknown  Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)  Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized  |  | d (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits                           |
| Wetland Juxtaposition:       Wetland Isolated       Wetlands within 400m, Not Connected       Only Connected Below         Only Connected Above       Connected Upstream & Downstream       Unknown         Wetland Land Use:       High Intensity (i.e., ag.)       Moderate Intensity (i.e., forestry)       Low Intensity (i.e. open space)         Watershed Land Use:       0-5% Rural       5-25% Urbanized       25-50% Urbanized       >50% Urbanized   |  | - 1101  |
| Wetland Juxtaposition:       Wetland Isolated       Wetlands within 400m, Not Connected       Only Connected Below         Only Connected Above       Connected Upstream & Downstream       Unknown         Wetland Land Use:       High Intensity (i.e., ag.)       Moderate Intensity (i.e., forestry)       Low Intensity (i.e. open space)         Watershed Land Use:       0-5% Rural       5-25% Urbanized       25-50% Urbanized       >50% Urbanized   | LANDSCAPE VARIABLES (M)  |   |
| Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized  | Wetland Juxtaposition: Wetland Isola   |   |
| Watershed Land Use: 0-5% Hural  | Wetland Land Use: High Intensity (i.e.   | e., ag.) Low Intensity (i.e. open space) Low Intensity (i.e. open space)                                    |
| Size: Small (<10 acres) Medium (10-100 acres) Large (>100 acres)  | Watershed Land Use: 0-5% Rural   | 5-25% Urbanized >50% Urbanized  |
|   | Size: Small (<10 acres) Me   | edium (10-100 acres) Large (>100 acres)   |

Page 4 of 4

# Wetland Determination Data Form QA/QC Checklist

This form to be completed before leaving the field site.

| Featu   | re ID: <u>W84 LH 024</u> Field Target: <u>15190</u> Date: <u>7/30/15</u>   |
|---------|--|
| For all | items not checked, please provide detailed explanation in the notes section of data form.  |
|         |  |
|         |  |
| 1.      | Site Description   |
|         |  |
|         | <ul><li>Site description, site parameters and summary of findings are complete?</li><li>A detailed site sketch is included?</li></ul>                |
| 2.      | Vegetation   |
|         | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  |
|         | <ul> <li>✓ Vegetation names are entered legibly for all strata present?</li> <li>✓ Cover calculations are complete and correct?</li> </ul>           |
|         | All dominant species have been determined and recorded per strata?   |
|         | Indicator status is correct for each species?  |
|         | □ Dominance Test and Prevalence Index have been completed?   |
| 3.      | Soil   |
|         | Soil profile is complete?  Appropriate hydric soil indicators are marked?  |
| 4.      | Hydrology  |
|         | <ul> <li>Appropriate hydrology indicators are marked?</li> <li>Surface water, water table, and saturation depths are recorded if present?</li> </ul> |
|         |  |
| 5.      | Functions and Values   |
|         | ☑ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6.      | Field Logbook  |
|         | Notes have been recorded at each site, including general description, sketch, and  |
|         | accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?   |
| 7.      | Maps   |

- M Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X Jenni Ger Anderson Jufn Andr 7/31/15
Wetland Scientist (print)

Bran Stone Show 7/31/15

| SITE DESCRIPTION   |  | Aves Wes                           | a like a re-  |                            |                    |                                      |
|--|--|------------------------------------|---------------|----------------------------|--------------------|--------------------------------------|
| Survey Type: Centerline 🚣 Acce   | ss Road (explain)  | Other (expla                       | in)           | Field Targ                 | jet: <u> 5(9</u> 8 | Map #: <u>C   Map Date: 6/18/</u> 15 |
| Date: 7/30/15  | Project Name & No.:  | Alaska LNG                         | 60418403      |                            | Feature Id:        | W84LH025                             |
| Investigators: Break Strong  | Dennifer And   | 21500                              |               |                            |                    | Team No.: ( 84                       |
| State: Alaska  | Region: Alaska   |                                    | Milepost: 4   | 126.7                      |                    | *                                    |
| Latitude: 65°09 15,70  | /  | Longitude:                         | 148°41        | 134,40                     |                    | Datum: WGS84                         |
| Logbook No.: 62  | Logbook Page No.:  | 1                                  |               |                            | -026. V            | EG. NEG PIT PLUC                     |
| SITE PARAMETERS  |  |                                    |               |                            | and the specific   | Particular Residence (April 19       |
| Subregion: Interior Highla   | ~ D.C  |                                    | Landform (hi  | illslope, terra            | ce, hummocks       | s, etc.): Toeslope                   |
| Slope (%): 6.5%. Aspect  |  |                                    |               |                            |                    | lat to slightly concern              |
| Pre-mapped Alaska LNG/NWI classific  |  |                                    | Evidence of   | Wildlife Use:              |                    | Server ocky, moderal                 |
| Are climatic/hydrologic conditions on th   |  | of year?                           | Are "N        | Iormal Circun              | nstances" pre      | sent: Moose trail Journs and         |
|  | lain in Notes)   |                                    | Yes_          | No                         | (If no, expense)   | plain in Notes.)                     |
| Are Vegetation, Soil, or Hy  | drology Significant  | tly Disturbed?                     | No            | (If yes, exp               | olain in Notes     |                                      |
| Are Vegetation, Soil, or Hy  | drology Naturally F  | Problematic?                       | No            | (If yes, ex                | plain in Notes     | .)                                   |
| SUMMARY OF FINDINGS  |  |                                    | Self-Marions  | A 118,70                   |                    |                                      |
| Hydrophytic Vegetation Present? Yes_   |  | Is t                               | he Sampled    | Area within                | a Wetland?         | YesX No                              |
| Hydric Soil Present? Yes_  | /No  | We                                 | tland Type:   | PSSAR                      |                    | - 1                                  |
| Wetland Hydrology Present? Yes_  |  | Ala                                | ska Vegetatio | on Classificati            | on (Viereck):      | HAT IFAZ AGIL                        |
| corridor. Dense even age<br>feather moss Sparce<br>60-70' Marginal site<br>saturation in organics<br>alpha alpha reaction<br>U,1A2 | Footslope wir<br>Footslope wir<br>in depleted F<br>WSULHO2S_C<br>Smale PSSI/FO<br>Moose to | the pass<br>the style<br>pore hang | 1600 R        | 05ACI,<br>dars,<br>care si | Thixoti            | oric soils (stight). No              |
|  | PSSUB IIAI   |                                    |               |                            | v.                 | Me                                   |
|  |  |                                    | 1             |                            |                    | Page 1 of 4                          |

|                               | Absolute     | Dominant       | Indicator | Deminer of Test         | la a a f              |               |
|-------------------------------|--------------|----------------|-----------|-------------------------|-----------------------|---------------|
| Tree Stratum (Plot sizes:(○○) | % Cover      | Species?       | Status    | Dominance Test works    |                       | /             |
|                               |              | (Y/N)          | Oluluo    | No. of Dominant Species |                       |               |
| · Picea mariana               | 31/          | 7              | Facw      | Total Number of Domina  |                       |               |
| moved doe                     | 100          |                | -         | % Dominant Species tha  | t are OBL, FACW, or F | AC: <u>66</u> |
| 77.0275.75                    |              |                |           |                         |                       |               |
|                               | Ψ.           |                | l l       | Prevalence Index works  | sheet:                |               |
| Total Cove                    | r. 3         |                | uli:      | Total % Cover of:       | Multipl               | y by:         |
| 50% of total cover            | r: <u> </u>  | % of total cov | /er:0/    | OBL species:            | X 1 =                 |               |
| apling/Shrub Stratum ( 26 )   | Absolute     | Dominant       | Indicator | FACW species: 65        | X2=_130               |               |
|                               | % Cover      | Species?       | Status    | FAC species15           | X3=_45                |               |
|                               |              | (Y/N)          |           | FACU species7           | X4= 28                |               |
| Pices marrana                 | 60/          | 1              | Facy      | UPL species             | X 5 =                 | E             |
| Spirea Stevensii              | 2:/          |                | Facu      | Column Totals: 87       |                       |               |
| Phododendon goegladie         | n 5%         |                | Fac       | PI = B/A = 2.3          |                       |               |
| Vaccinion obsinosom           | 17-          |                | Fac       |                         | 7.                    |               |
| · Vaccinism vitis-idaes       | 2            |                | Fac       |                         |                       |               |
| Rosa acicularis               | 27.          |                | Fac U     |                         |                       |               |
|                               |              |                |           |                         |                       |               |
|                               |              |                |           |                         |                       |               |
| V.                            | 7            |                |           |                         | -                     |               |
| Total Cove                    | :77          |                |           |                         |                       |               |
| 50% of total cover            | r: 38.5° 20' | % of total cov | er: 15 4  |                         |                       |               |

| VEGETATION (use scientific names of plants | )                   |                               |                     |   |
|--|---------------------|-------------------------------|---------------------|---|
| Herb Stratum ( 2 )                         | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%   |
| 2. Geocaston Ividicum                      | 77.<br>37.          | 7                             | Fac U               | Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  |
| 4.   |                     |                               | FacW                | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. |
| 6.<br>7.                                   |                     |                               |                     | % Bare Ground   |
| 9.   |                     |                               |                     | Cover of Wetland Bryophytes  Total Cover of Bryophytes  |
| 10. Total Cover:                           | 10                  | l a                           | 34                  | — % Cover of Water  Hydrophytic Vegetation Present (Y/N):   |
| 50% of total cover:                        | 5 20                | % of total cove               | er:_ <u>-</u> 2     | Notes: (If observed, list morphological adaptations below):   |

Lichan G Sphagnom sp T Polytrichom st T

| 0011              |                                  |                | 7/30/15                             |                    | いろさん                | H025   |                                  | Soil Dit Domited (VA)  |  |
|-------------------|----------------------------------|----------------|-------------------------------------|--------------------|---------------------|--|----------------------------------|--|--|
| SOIL PROFI        | I E DECODIDATION: //             |                |                                     | Feature ID         |                     | la ali a akan an an  | Con the street                   | Soil Pit Required (Y/N)  |  |
|                   | LE DESCRIPTION: (                |                |                                     | ea to aocui        | ment the            | indicator or co  | ntirm the abser                  | nce of indicators.)  |  |
| Depth<br>(inches) | Matrix                           |                | Redox Features                      | T <sub>0</sub> / T | <b>T</b> 1          | 12   | T4                               | Number   |  |
|                   | Color (moist)                    | %              | Color (moist)                       | %                  | Type <sup>1</sup>   | Loc²   | Texture                          | Notes  |  |
| 5-6               |                                  |                |                                     |                    |                     |  |                                  | not saturated  |  |
| 6-7               | 10-145/1                         | 100            |                                     |                    |                     |  | 5,6                              |  |  |
| 7-9               | 10-123/3                         | 100            |                                     |                    |                     |  | 3.6                              |  |  |
| 7-12              | 2.575/2                          |                | N510                                | 10                 | D                   | PC/RC  | SIL                              | Thixotropic Plastic  |  |
| 3 7 7 7           | , , , ,                          |                | 10-n4/6                             | 5                  | С                   | M  |                                  | weak spottil reaction to   |  |
| 2-17              | 2-5-15/2                         | 99             | NS/60                               | 1                  | D                   | PL/2C  | S.L                              | Frozen Platy Whine ice   |  |
|                   |                                  |                |                                     |                    |                     |  |                                  | low ke content   |  |
|                   | oncentration, D=Deple            | etion, RM=     | Reduced Matrix,                     | CS=Cover           | ed or Co            | ated Sand Gra  |                                  | n: PL=Pore Lining, M=Matrix.   |  |
| HYDRIC SO         | IL INDICATORS                    |                |                                     |                    |                     | The second   |                                  | S FOR PROBLEMATIC HYDRIC SOILS <sup>3</sup>                                    |  |
| Histosol or H     | listel (A1)\                     |                | Alaska Gleye                        | ed (A13)           | N                   |  | Alaska Color                     | Change (TA4) <sup>4</sup>  |  |
| listic Epiped     | don (A2)                         |                | Alaska Redo                         | x (A14)            | N_                  |  | Alaska Alpine                    | e Swales (TA5)   |  |
| Black Histic (    | (A3)N                            |                | Alaska Gleye                        | ed Pores (A        | A15) <del>/</del> - | marginal   | Alaska Redo                      | x with 2.5Y Hue _ N  |  |
| Hydrogen Su       | ılfide (A4)                      |                |                                     |                    | ,                   |  |                                  | ed without 5Y Hue or Redder Underlying   |  |
|                   |                                  |                |                                     |                    |                     |  | Layer N                          | in in Nistan V   |  |
|                   | Surface (A12) <u>N</u>           | tation on      | e primary indicato                  | or of wetlen       | d hydrolo           | no and an an   |                                  | in in Notes) N<br>cape position must be present unless                         |  |
| disturbed or p    | problematic.                     |                | o pinnary mulcale                   | , or wellall       | a riyurul           | yy, and an ap  | Propriate latius                 | oapo position must be present uniess   |  |
| Give details      | of color change in No            | otes.          | 0                                   | Death 75           | 1 X                 | ν  |                                  |  |  |
| Restrictive La    | ayer (if present): Type          | 0: <u></u>     | 44 (DST                             | Depth (inc         | cnes):              |  | -                                |  |  |
| lydric Soil I     | Present (Y/N):                   | Ma             | (Auna)                              | - I.               |                     |  | 10                               |  |  |
|                   |                                  |                | 9                                   |                    | ٥                   |  |                                  |  |  |
| ention            | and root the                     | innels<br>lpha | var-1 from                          | Liepteti           | 270 0               | f matri  | x albore<br>els/pore<br>recommen | e area Depletions along Po<br>the fost table, weaks<br>linings, < 60% of 4" ax |  |
| YDROLOG           | Y PRIMARY INDICA                 |                |                                     |                    |                     |  |                                  | (2 or more required)   |  |
| Surface Wate      | er (A1)                          | Surfa          | ace Soil Cracks (E                  | 36) <u>N</u>       |                     | Water-stained<br>_eaves (B9) _i  | <b>X</b> )                       | Stunted or Stressed<br>Plants (D1)   |  |
| -ligh Water T     | Table (A2)                       | Inun<br>(B7)   | dation Visible on                   | Aerial Imaç        | gery                | Orainage Patte   | erns (B10) <u>N</u>              | Geomorphic Position (D2)   |  |
| Saturation (A     | A3) <u> </u>                     | Spai<br>Cond   | sely Vegetated<br>cave Surface (B8) | _N                 |                     | Oxidized Rhizo<br>Living Roots (C  | ospheres along<br>C3)            | Shallow Aquitard (D3)  |  |
| Nater Marks       | (B1) N                           | Marl           | Deposits (B15) _                    | لم                 |                     | Presence of Reron (C4)   |                                  | Microtopographic<br>Relief (D4)  |  |
| Sediment De       | eposits (B2)N                    | Hydi<br>Odo    | rogen Sulfide<br>r (C1) _ N         |                    | 5                   | Salt Deposits (C5) FAC-Neutral Test (D5)   |                                  |  |  |
| Orift Deposits    | s (B3) _ N                       |                | Season<br>er Table (C2)^            | ]                  | ,                   | Notes: Jest Positive reaction to alpha a in depleted zones along fore limings        |                                  |  |  |
| Algal Mat or      | Crust (B4)                       | Othe           | er (Explain in Note                 | es):               |                     | post channels 5-126 depleted pore livings.  Does not meet 60% of 4" criteria for red |                                  |  |  |
| ron Deposits      | s (B5)                           |                |                                     |                    | i                   | natrix.B.  | orderline                        | site. Als indicator is may   |  |
|                   |                                  |                | - Ten in Service                    | AND DE             | 15000               |  | (I soul sines                    |  |  |
| Surface Wate      | er Present (Y/N): 📈              | Ţ              | Depth (in): $\mu$ A                 | - 4                |                     |  |                                  |  |  |
| Vater Table       | Present (Y/N): χ                 |                | Depth (in): NA                      | 116                | We                  | tland Hydrolo  | ogy Present (Y                   | /N):   |  |
|                   | resent (Y/N):<br>pillary fringe) |                | Depth (in): 91                      | 2"                 | EC                  | : NA   |                                  |  |  |
| 1 1 1             | more likely                      |                |                                     |                    |                     |  |                                  | laced, NE aspect, the west   |  |
| Pel.              |                                  |                |                                     |                    |                     |  |                                  | inns began over the  |  |
| 1                 | 7 1 1                            |                | +1                                  |                    | 1                   | \. 44  |                                  |  |  |

### AQUATIC SITE ASSESSMENT DATA FORM

| /EGETATION VARIABLES P= Plot, M= Matrix   |
|---|
| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed |
| Percent Cover (P): Tree (>5 dbh, >6m tall) 3 Sapling (<5 dbh, <6m tall) (□ □ Tall shrub (2-6m) Short shrub (0.5-2m) 10 Short shrub (<0.5m) Tall herb (≥1m) Short herb (<1m) Moss-Lichen 10 Floating Submerged   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even  |
| Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-30%) Very High Density (80-100%)   |
| nterspersion of Cover & Open Water (P): 100% Cover or Open Water  |

Page 4 of 4

#### Wetland Determination Data Form QA/QC Checklist

This form to be completed before leaving the field site.

For all items not checked, please provide detailed explanation in the notes section of data form.

#### 1. Site Description

- ☑ Site description, site parameters and summary of findings are complete?
- A detailed site sketch is included?

#### 2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- ▼ Vegetation names are entered legibly for all strata present?
- ☒ Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- Indicator status is correct for each species?
- □ Dominance Test and Prevalence Index have been completed?

#### 3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

#### 4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

#### 5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

#### 6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- Each logbook page is initialed and dated?

#### 7. Maps

- Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

X Jennifer Anderson Jufu An

7/30/15

Wetland Scientist (print)

Byan Strong Sun 7/30/15

| SITE DESCRIPTION                                    |  |                   |                            |                          | 10.0           | (1)  |
|---|--|-------------------|----------------------------|--------------------------|----------------|--|
| Survey Type: Centerline A                           | ccess Road (explain)                         | Other (expla      | in)                        | Field Targ               | jet:15213      | Map #: 54 Map Date: 6/18/15                                    |
| Date: 7/31/15                                       | Project Name & No.:                          | Alaska LNG        | 60418403                   |                          | Feature Id:    | W84L1+026  |
| Investigators: Bream St                             | ong Dennifer                                 | Ander             | Son                        |                          |                | Team No.: WTY  |
| State: Alaska                                       | Region: Alaska                               |                   | Milepost: 4                | 17.6                     |                | 0 10 11  |
| Latitude: 65° 15′ 31. 95                            |  | Longitude         | 148°35                     | 102.0                    | 15             | Datum: WGS84   |
| Logbook No.: 02                                     | Logbook Page No.:                            |                   |                            |                          |                | C-VEG-PIT-PLUG   |
| SITE PARAMETERS                                     |  |                   |                            |                          |                |  |
| Subregion: Interior Itys                            | nlands                                       |                   | Landform (hil              | Islope, terra            | ce, hummock    | s, etc.): 2,25 c   |
| Slope (%): 17% Asee                                 |  | and the           | Local relief (d            | concave, cor             | nvex, none):   | Convex, Hummodey-SA  |
| Pre-mapped Alaska LNG/NWI class                     |  |                   | Evidence of \              | Wildlife Use:            | None :         | pservez  |
| Are climatic/hydrologic conditions of Yes No (if no |  | e of year?        | Are "N                     | ormal Circur             | nstances" pre  |  |
| Are Vegetation, Soil, or                            | Hydrology Significan                         | ntly Disturbed?   | No_>                       | _(If yes, ex             | plain in Notes |  |
| Are Vegetation, Soil, or                            | Hydrology Naturally                          | Problematic?      | No_>                       | (If yes, ex              | plain in Notes | s.)  |
| SUMMARY OF FINDINGS                                 |  |                   |                            |                          |                |  |
| Hydrophytic Vegetation Present? Y                   | /es No                                       | Is                | the Sampled                | Area within              | a Wetland?     | Yes No   |
| Hydric Soil Present? Y                              | es NoX_                                      | w                 | etland Type:               | U                        | 1              |  |
| Wetland Hydrology Present? Y                        | esNo×  | Al                | aska Vegetatio             | n Classificat            | ion (Viereck): | 1A2  |
| represented at ALNVIR (4.6').                       | losed PICMAR<br>23 of PICMA<br>the plot desc | An are<br>cribed. | lawing<br>intersi<br>Picmi | g has<br>perced<br>AR 20 | create with .  | ez dense colonies /<br>More open areas as<br>11 with unlerston |

|  | Absolute            | Dominant                      | Indicator                           | Dominance Test worksheet:  |
|--|---------------------|-------------------------------|-------------------------------------|--|
| Tree Stratum (Plot sizes:)   | % Cover             | Species?<br>(Y/N)             | Status                              | No. of Dominant Species that are OBL, FACW, or FAC:  |
| 1. Picea Mariana 20.35'  | 40                  | 1                             | Fac W                               | Total Number of Dominant Species Across All Strata:  |
| 2. Betula nevalaskana  | 3                   | N                             | Facu                                | % Dominant Species that are OBL, FACW, or FAC: 47% (A  |
| 3.   |                     |                               | Two or                              |  |
| 4.   | 1 1111              |                               | 1                                   | Prevalence Index worksheet:  |
| Total Cover:   | 43%                 |                               |                                     | Total % Cover of: Multiply by:   |
| 50% of total cover   | 21.5 20             | 0% of total cov               | ver: 8.67                           | OBL species: X1= (   |
| Sapling/Shrub Stratum ( 25 )   | Absolute<br>% Cover | Dominant Species?             | Indicator<br>Status                 | FACW species: 44 X2 = 88  FAC species  |
| 10   |                     | (Y/N)                         | - /                                 | FACU species 8 X 4 = 32  |
| ·Picca Mariana   | 4 %                 | N                             | Facily                              | UPL species X 5 =  |
| Alms virdis  | 40%                 | 7                             | Far                                 | Column Totals: (A) 291 (B)   |
| · Vaccinium vitis idaes  | 10%                 | N                             | Fac                                 | PI = B/A = 2 7636  |
| · Vaccinium uliginosum   | 6/                  | N                             | Fac.                                |  |
| · Rhododen Longroen landice  | my T                | N                             | Fac.                                |  |
|  |                     |                               |                                     | the second secon |
| S  |                     |                               |                                     |  |
|  |                     |                               |                                     |  |
|  |                     |                               |                                     |  |
|  |                     |                               |                                     |  |
| 9.<br>Total Cover:   |                     |                               |                                     |  |
| ).   |                     | % of total cov                | er:  2 7.                           |  |
| Total Cover:<br>50% of total cover:  | 30 20               | % of total cov                | er: 12 Y.                           |  |
| Total Cover: 50% of total cover: EGETATION (use scientific names of plants)  | 30 20               | % of total cov                | er: 27.                             | Hydrophytic Vegetation Indicators:   |
| Total Cover: 50% of total cover: 50% of total cover: FEGETATION (use scientific names of plants)   | 30 20               | Dominant<br>Species?          |                                     | Hydrophytic Vegetation Indicators: Dominance Test is > 50%   |
| Total Cover: 50% of total cover:  EGETATION (use scientific names of plants)  erb Stratum ( 26 )   | 30 20 Absolute      | Dominant                      | Indicator<br>Status                 | Dominance Test is > 50% Prevalence Index is ≤ 3.0  |
| Total Cover: 50% of total cover: EGETATION (use scientific names of plants) erb Stratum ( 26 )   | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status                 | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in   |
| Total Cover: 50% of total cover: 50% of total cover: EGETATION (use scientific names of plants) erb Stratum ( 26 )  Cocaulan ( vidicum Calamagostic (appanies)   | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status                 | Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)  |
| Total Cover: 50% of total cover: 50% of total cover: EGETATION (use scientific names of plants) erb Stratum ( 26 )  Coccaulon lividicum Calamagrostis lapponica Spinulum annotinum   | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status                 | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)   |
| Total Cover: 50% of total cover: 50% of total cover:  EGETATION (use scientific names of plants) erb Stratum ( 26 )  · Ccocaulon lividicum · Calamagrostis lapponica · Spinulum annotinum  | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status                 | Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes)  |
| Total Cover: 50% of total cover: 50% of total cover:  EGETATION (use scientific names of plants) erb Stratum ( 26 )  Coccaulon lividicum Calamagrostic lapponica Spinulum annotinum  | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status                 | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless   |
| Total Cover: 50% of total cover: 50% of total cover: EGETATION (use scientific names of plants) lerb Stratum ( 26 )  Calanagostic lapponica Spinulum annotinum   | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status                 | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.   |
| Total Cover: 50% of total cover: 50% of total cover:  EGETATION (use scientific names of plants) erb Stratum ( 26 )  Calamagnostic lapponica Spinulum annotinum .  | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status                 | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.   |
| Total Cover: 50% of total cover: 50% of total cover: EGETATION (use scientific names of plants)  Lerb Stratum ( 26 )  Calanagostic lapponics  Spinulum annotinum   | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status                 | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Median Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.   |
| Total Cover: 50% of total cover: 50% of total cover:  FEGETATION (use scientific names of plants)  Lerb Stratum ( 26 )  Calanagrostic lapponics  Spinulum annotinum  .   | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status                 | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  ———————————————————————————————————  |
| Total Cover: 50% of total cover: 50% of total cover:  EGETATION (use scientific names of plants) erb Stratum ( 26 )  Calamagrostis lapponica Spinulum annotinum  | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status                 | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  We Bare Ground  Cover of Wetland Bryophytes  Total Cover of Bryophytes  Cover of Water  |
| Total Cover: 50% of total cover: 50% of total cover:  /EGETATION (use scientific names of plants)  derb Stratum ( 26 )  1. Ceocaulon lividicum 2. Calamagrostis lapfonica 3. Spinulum annotinum 4. 5. 6. 6. 7.   | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status                 | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Represent Ground  Cover of Wetland Bryophytes  Total Cover of Bryophytes  Cover of Water  Hydrophytic Vegetation Present (Y/N):  |
| Total Cover: 50% of total cover: 50% of total cover:  /EGETATION (use scientific names of plants)  Herb Stratum ( 26 )  1. Coccaulon lividicum 2. Calanagrostis lapfonica 3. Spinulum annotinum 4. 5. 6. 6. 7. 8. 9.   | Absolute % Cover    | Dominant<br>Species?          | Indicator<br>Status  Fac II  Fac II | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  When the description of the problematic of   |
| Total Cover: 50% of total cover: 50% of total cover: 50% of total cover: 50% of total cover: 6. Calanagiostic lapponics 6. Calanagiostic lapponics 6. Calanagiostic lapponics 7. Calanagiostic lapponics 8. Calanagiostic lapponics 9. Calana | Absolute % Cover    | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  Fac II  Fac II | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Represent Wetland Bryophytes  Total Cover of Bryophytes  Cover of Water  Hydrophytic Vegetation Present (Y/N):   |

| OIL  |   |                     | Date Feature ID_   |  |  |   | Soil Pit Requir   | ea (Y/N)                                |
|--|---|---------------------|--|--|--|---|---|---|
| OIL PROFIL   | LE DESCRIPTION: (   | Describe            | to the depth needed to docum   | ent the  | ndicator or o  | confirm the absend                          | e of indicators.)   |   |
| epth   | Matrix  |                     | Redox Features   |  |  |   |   |   |
| nches)   | Color (moist)   | %                   | Color (moist) % T  | ype <sup>1</sup>   | Loc <sup>2</sup>   | Texture                                     | Notes   |   |
| )-4  |   |                     |  |  |  |   |   |   |
| -20  | 2.575/2   | 100                 |  |  |  | GRSIL                                       | Cravel ~ 15%.   |   |
| SEV LIE 15-  |   |                     |  |  |  |   |   | -A1111-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1- |
| Name and Address of the Owner, where the Owner, which is the Own |   | etion, RN           | M=Reduced Matrix, CS=Covere  | d or Co  | ated Sand G  |   | : PL=Pore Lining, M=Mate  |   |
|  | LINDICATORS   |                     |  |  |  |   | FOR PROBLEMATIC HY  | DRIC SOILS                              |
| istosol or H   | istel (A1) N  |                     | Alaska Gleyed (A13)  | 1  |  | Alaska Color                                | Change (TA4) <sup>4</sup>   |   |
| stic Epiped  | on (A2) _ N   |                     | Alaska Redox (A14)   |  |  | Alaska Alpine                               | Swales (TA5)  |   |
| ack Histic (   | A3)   |                     | Alaska Gleyed Pores (A   | 5)   |  | Alaska Redox                                | with 2.5Y Hue   |   |
| ydrogen Su   | lfide (A4)N   |                     | to Contract the Contract to th |  | 100  | Alaska Gleyer<br>Layer                      | without 5Y Hue or Redde   | er Underlying                           |
| hick Dark S  | urface (A12)N   | Sac.                |  |  |  | Other (Explain                              | in Notes)   | hit mhee                                |
| estrictive La  |   | 1                   | A Depth (inch  | es):   | NIA  |   |   | IREPUSY.                                |
| lestrictive La   | Present (Y/N):  | 1                   |  | es):   | N (*   |   |   | Heppy                                   |
| Nestrictive La   | Present (Y/N):A   | der c               |  |  |  |   | 2 or more required)   |   |
| lydric Soil I  | Present (Y/N):A   | TORS (a             | 1,62 27  | \$   |  | RY INDICATORS (                             | 2 or more required) Stunted or Stresse Plants (D1)  |   |
| ydric Soil I lotes: () >   | Present (Y/N):A   | TORS (a             | any one indicator is sufficient)  rface Soil Cracks (B6)   | \$   \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \   | SECONDAR<br>Water-staine<br>eaves (B9)<br>Orainage Pa  | RY INDICATORS (                             | Stunted or Stresse<br>Plants (D1)   |   |
| ydric Soil I lotes: () >   | Present (Y/N):A  Fr.st Pow  Y PRIMARY INDICA  er (A1)  Table (A2)A  | TORS (a             | any one indicator is sufficient)  rface Soil Cracks (B6)   | to the state of th | SECONDAR<br>Water-staine<br>eaves (B9)<br>Orainage Pa  | RY INDICATORS ( ad utterns (B10)            | Stunted or Stresse<br>Plants (D1)   | ion (D2)                                |
| Iydric Soil I Idotes: () > IYDROLOG Surface Water T Saturation (A  | Present (Y/N):A  Fr.st Pow  Y PRIMARY INDICA  er (A1)  Table (A2)  A3)/   | Su Inu (B) Sp Co    | any one indicator is sufficient)  rface Soil Cracks (B6)  indation Visible on Aerial Image  r/)  arsely Vegetated  | STY [  | SECONDAR<br>Vater-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rhi   | ed  | Stunted or Stresse<br>Plants (D1)<br>Geomorphic Posit   | ion (D2)<br>(D3)                        |
| lydric Soil I lotes: () > IYDROLOG Surface Water digh Water T saturation (A  | Present (Y/N):A  Fr.st Pow  Y PRIMARY INDICA  er (A1)  Table (A2)  A3)/   | Su Inu (B7 Co       | any one indicator is sufficient)  rface Soil Cracks (B6)  andation Visible on Aerial Image rarsely Vegetated ncave Surface (B8)  ard Deposits (B15)  drogen Sulfide or (C1)  | \$   1   1   1   1   1   1   1   1   1   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Orainage Pa<br>Oxidized Rhi<br>Living Roots<br>Presence of<br>ron (C4)                            | atterns (B10) izospheres along (C3) Reduced | Stunted or Stresse<br>Plants (D1)<br>Geomorphic Posit<br>Shallow Aquitard (   | (D3)                                    |
| Hydric Soil I  Hydric | Present (Y/N):A  AY PRIMARY INDICA  Per (A1)  Fable (A2)  (B1)  Proposits (B2)  | Su Inu (B7 Co       | any one indicator is sufficient)  rface Soil Cracks (B6)  modation Visible on Aerial Image  rassely Vegetated ncave Surface (B8)  rl Deposits (B15)  drogen Sulfide  | \$   1   1   1   1   1   1   1   1   1   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rhi<br>Living Roots<br>Presence of<br>ron (C4)                            | atterns (B10) izospheres along (C3) Reduced | Stunted or Stresse<br>Plants (D1)<br>Geomorphic Posit<br>Shallow Aquitard (<br>Microtopographic<br>Relief (D4)      | (D3)                                    |
| Hydric Soil I  Hydric | Present (Y/N):A  AY PRIMARY INDICA  Per (A1)  Fable (A2)  (B1)  Proposits (B2)  | Su Inu (B) Sp Co Ma | any one indicator is sufficient)  rface Soil Cracks (B6)  andation Visible on Aerial Image  rarsely Vegetated ancave Surface (B8)  ard Deposits (B15)  drogen Sulfide or (C1)  y-Season  | \$   1   1   1   1   1   1   1   1   1   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Orainage Pa<br>Oxidized Rhi<br>Living Roots<br>Presence of<br>ron (C4)                            | atterns (B10) izospheres along (C3) Reduced | Stunted or Stresse<br>Plants (D1)<br>Geomorphic Posit<br>Shallow Aquitard (<br>Microtopographic<br>Relief (D4)      | (D3)                                    |
| Interpretation (All Judges Marks Sediment Deposits Mgal Mat or Marks Mgal Mat or Mgal Mgal Mat or Mgal Mgal Mgal Mgal Mgal Mgal Mgal Mgal  | Present (Y/N):  | Su Inu (B) Sp Co Ma | any one indicator is sufficient)  rface Soil Cracks (B6)   | \$   1   1   1   1   1   1   1   1   1   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Orainage Pa<br>Oxidized Rhi<br>Living Roots<br>Presence of<br>ron (C4)                            | atterns (B10) izospheres along (C3) Reduced | Stunted or Stresse<br>Plants (D1)<br>Geomorphic Posit<br>Shallow Aquitard (<br>Microtopographic<br>Relief (D4)      | (D3)                                    |
| Hydric Soil I  | Present (Y/N):  | Su Inu (B) Sp Co Ma | any one indicator is sufficient)  rface Soil Cracks (B6)   | \$   1   1   1   1   1   1   1   1   1   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Orainage Pa<br>Oxidized Rhi<br>Living Roots<br>Presence of<br>ron (C4)                            | atterns (B10) izospheres along (C3) Reduced | Stunted or Stresse<br>Plants (D1)<br>Geomorphic Posit<br>Shallow Aquitard (<br>Microtopographic<br>Relief (D4)      | (D3)                                    |
| Hydric Soil I Notes: () > HYDROLOG Gurface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits Surface Water  | Present (Y/N):A  Present (Y/N): _A  Present (Y/N):A  Presen | Su Inu (B) Sp Co Ma | any one indicator is sufficient)  rface Soil Cracks (B6)   | STY [  | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rhi<br>Living Roots<br>Presence of<br>ron (C4)<br>Salt Deposits<br>Notes: | atterns (B10) izospheres along (C3) Reduced | Stunted or Stresse Plants (D1)  Geomorphic Positi Shallow Aquitard ( Microtopographic Relief (D4)  FAC-Neutral Test | (D3)                                    |

### AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot,  | M= Matrix  |
|--|--|
| Forested-Evergreen-Needle-leaved   | acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-  |
| Percent Cover (P): Tree (>5 dbh, >6m tall)_<br>Dwarf shrub (<0.5m) Tall herb (≥  | Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m)  1m) Short herb (<1m) Moss-Lichen Floating Submerged   |
|  | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even  |
| Vegetation Density/Dominance (P): Sparse<br>80%) Very High Density (80-100%)   | e (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-   |
| Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scatter   | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant  | species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none)   | One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): Open Small Scattered Patches_  | No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover   |
| Dead Woody Material (P): Low Abundance<br>Abundant (>50% of surface)   | (0-25% of surface) Moderately Abundant (25-50% of surface)   |
| Vegetative Interspersion (P): Low (large<br>High (small groupings, diverse and interspers  | patches, concentric rings) Moderate (broken irregular rings)   |
| HGM Class (P): Slope Flat  | Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
|  |  |
| SOIL VARIABLES   |  |
| Soil Factors (P): Soil Lacking<br>Mineral: Gravelly Mineral: Sandy_  | Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey   |
|  |  |
| HYDROLOGIC VARIABLES   |  |
| Inlet/Outlet Class (P): No Inlet/Outlet  | No Inlet/Intermittent OutletNo Inlet/Perennial Outlet Intermittent Inlet/No t Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I  Wetland Water Regime (P): Drier: Seas  | No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No t OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial nlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial OutletPerennial Inlet/No Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet_ Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed,  Evidence of Sedimentation (P): No Eviden   | No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No t OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial nlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial OutletPerennial Inlet/No Outlet  |
| Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent OutletPerennial I  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed,  | No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial inlet/Perennial Outlet sonally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded ince Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment  |
| Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent OutletPerennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evident CreatedMicrorelief of Wetland Surface (P): Absent   | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial nlet/Perennial Outlet Sonally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded nce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment  |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent  Frequency of Overbank Flooding (P): No Common Comm | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial nlet/Perennial Outlet Perennial Inlet/No Outlet Perennial sonally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded  nce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) Pronounced ( |
| Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent OutletPerennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evident CreatedMicrorelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created  | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No at Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet _   |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Inlet/Intermittent Outlet Inlet/Intermittent Outlet Inlet/Intermittent Intervited Intermittent Outlet Intervited Intervite | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No to Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inl   |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Inlet/Intermittent Outlet Inlet/Intermittent Outlet Inlet/Intermittent Intervited Intermittent Outlet Intervited Intervite | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No toutlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Out  |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intervious Intermittent Intervious Intermittent Intervious Intermittent Intervious Intermittent Intervious Intermittent Intervious  | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No at Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outle   |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet_Perennial Inlet/Intermittent Outlet Intermittent Int | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No at Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial   |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intermittent Intermitten | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No at Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Semiper Perennial Inlet/No Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intermittent Intermitten | No Inlet/Intermittent Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intermittent Inter | No Inlet/Intermittent Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intermittent | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No It Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Pere  |

Page 4 of 4

### Wetland Determination Data Form QA/QC Checklist

This form to be completed before leaving the field site.

| Featu   | re ID: W84LH024 Field Target: \( \( \sum_{213} \) Date: \( \frac{7}{31}/15 \)   |
|---------|---|
| For all | items not checked, please provide detailed explanation in the notes section of data form.   |
|         |   |
|         |   |
| 1.      | Site Description  |
|         | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included?  |
| 2.      | Vegetation  |
|         | <ul> <li>At least 80% of onsite vegetation has been keyed to species, or collected for later identification?</li> <li>Vegetation names are entered legibly for all strata present?</li> </ul> |
|         | Cover calculations are complete and correct?  |
|         | <ul> <li>All dominant species have been determined and recorded per strata?</li> <li>Indicator status is correct for each species?</li> </ul>   |
|         | Dominance Test and Prevalence Index have been completed?  |
| 3.      | Soil  |
|         | Soil profile is complete?  Appropriate hydric soil indicators are marked?   |
| 4.      | Hydrology   |
|         | <ul> <li>☑ Appropriate hydrology indicators are marked?</li> <li>☑ Surface water, water table, and saturation depths are recorded if present?</li> </ul>                                      |
| 5.      | Functions and Values  |
|         | ☑ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?  |
| 6.      | Field Logbook   |
|         | Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?          |

#### 7. Maps

- ☑ Wetland boundaries have been corrected if necessary?

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

X Jannifer Anderson Journ A 7/31/15 Wetland Scientist (print)

| SITE DESCRIPTION                     |  |                |                 |   |   |
|--------------------------------------|--|----------------|-----------------|---|---|
| Survey Type: Centerline X            | ccess Road (explain)                               | Other (expla   | ain)            | Field Target: \S200                     | Map #:54 Map Date:6/18/15   |
| Date: 7/31/15                        | Project Name & No.:                                | Alaska LNG     | 60418403        | Feature Id                              | 1: W84LH027   |
| Investigators: Rum St                | rong Jena, fer                                     | - Ande         | rson            |   | Team No.: W84   |
| State: Alaska                        | Region: Alaska                                     |                | Milepost: 4     | 17.5                                    | 21 11   |
| Latitude: 65 ° 15 '39 . 44           |  | Longitude      | : 148° 3        | 5'02.85                                 | Datum: WGS84  |
| Logbook No.: D2                      | Logbook Page No.:                                  | 10             | Picture No.:    | W8411027-V1                             | CG_VEC_PIT_PLUG   |
| SITE PARAMETERS                      |  |                |                 |   |   |
| Subregion: Interior High             | Mends  |                | Landform (hill  | Islope, terrace, hummoc                 | ks, etc.): P. dge   |
| Slope (%): §                         |  |                | Local relief (c | oncave, convex, none):                  | Convex hummocky-sm  |
| Pre-mapped Alaska LNG/NWI class      | sification: U,181,103                              | 3              | Evidence of V   | Wildlife Use: None                      | bserved   |
| Are climatic/hydrologic conditions o | n the site typical for this time explain in Notes) | e of year?     | Are "No         | ormal Circumstances" pr<br>No (If no, e | resent:<br>xplain in Notes.)  |
| Are Vegetation, Soil, o              |  | tly Disturbed? | No_×            | _(If yes, explain in Note               |   |
| Are Vegetation, Soil, o              | r Hydrology Naturally                              | Problematic?   | No_×            | _ (If yes, explain in Note              | es.)  |
| SUMMARY OF FINDINGS                  |  |                |                 |   |   |
| Hydrophytic Vegetation Present? Y    | /esNo  | Is             | the Sampled A   | Area within a Wetland?                  | Yes No_   |
| Hydric Soil Present? Y               | es No×_  | w              | etland Type:    | J                                       |   |
| Wetland Hydrology Present? Y         | es No  | Ala            | aska Vegetation | n Classification (Viereck               | : 1132 163  |
|                                      |  |                |                 |   | erline, Photo Locations, and Survey  GRO, VACULI, Feather  Ness force of in the are |
| 0,102                                | 101  | d MP           |                 |   |   |

| VEGETATION (use scientific names of plant | s)                  |                               |                     |  |
|---|---------------------|-------------------------------|---------------------|--|
| Tree Stratum (Plot sizes: 180 )           | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC:  (A)  |
| 1. PICCE METIENE                          | 87.                 | Y                             | FaceN               | Total Number of Dominant Species Across All Strata: (B)  |
| 2. Betula regalasteans                    | 17.                 | N                             | FacU                | % Dominant Species that are OBL, FACW, or FAC:(A/B   |
| 3. Picea glavea                           | 17.                 | N                             | Facil               |  |
| 4.  |                     |                               |                     | Prevalence Index worksheet:  |
| Total Cover                               | ~                   | 0% of total cov               | ver: 27             | Total % Cover of: Multiply by:  OBL species: X1 =  |
| Sapling/Shrub Stratum ( 2C )              | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species: 8  |
| 1. Alaus virdis                           | 65%                 | Y                             | Fal                 | UPL species X 5 = O  |
| 2. Phododendron groenlandic               | m 80%               | Y                             | Fac                 | Column Totals: (A) (B)   |
| 3. Ribres triste                          | T                   | N                             | Fac                 | PI = B/A = 3 9 8   |
| 4. Vaccinium vitis-Idaes                  | 15%                 | N                             | Fac                 |  |
| 5. Vaccinism uliginosum                   | 20%                 | N                             | Fac                 | The second secon |
| 6. Rosa acicularis                        | T                   | N                             | Facu                |  |
| 7. Linaen borealis                        | -                   | N                             | Facul               |  |
| 8.  |                     |                               |                     |  |
| 9. Total Cover                            | 180%                |                               |                     |  |
| 50% of total cover                        |                     | )% of total cov               | or 210'1            |  |
| 30 % 31 15121 55751                       | 101.20              | 770 OF LOLAI COV              | or. Creek           |  |
| VEGETATION (use scientific names of plant | s)                  |                               |                     | 超过1000000000000000000000000000000000000  |
| Herb Stratum ( 2 5 )                      | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0   |
| 1. Calamagrostis lapponica                | 5%                  | Y                             | Fac                 | Morphological Adaptations¹ (Provide supporting data in   |
| 2. Spinolom anotinum                      | 3/                  | Y                             | FORY                | Notes)   |
| 3.  |                     |                               |                     | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 4.  |                     |                               |                     | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless  |
| 5.  |                     |                               |                     | disturbed or problematic.  |
| 6.  |                     |                               | 10 7                |  |
| 7.  |                     |                               |                     | % Bare Ground  |
| 8.  |                     |                               |                     | % Cover of Wetland Bryophytes  |
| 9.  |                     | -3                            |                     | Total Cover of Bryophytes  |
| 10.                                       |                     | *                             |                     | Cover of Water   |
| Total Cover                               | 116.                | 0% of total cov               | er: 1,61,           | Notes: (If observed, list morphological adaptations below):  |



| THE RESERVE TO THE PARTY OF THE |  |  |   |                   | 14027  |  |                       | Soil Pit Require   | d (Y/N)  |
|--|--|--|---|-------------------|--|--|-----------------------|--|--|
| OIL  |  |  | Date Feature ID   |                   | in alia - to   | anfirm the share   |                       |  | ()   |
| OIL PROFIL   | LE DESCRIPTION:  | (Describe                                    | to the depth needed to docu                             | nent the          | indicator or o   | confirm the abser  | ice of indica         | iiois.)  |  |
| epth   | Matrix   |  | Redox Features  | _ 1               | . 2  |  | Notes                 |  | No. of the Control of |
| nches)   | Color (moist)  | %  | Color (moist) %   | Type <sup>1</sup> | Loc²   | Texture  | Notes                 |  |  |
| -2   |  |  |   |                   |  |  |                       |  |  |
| 4  | 10 ra 2/1  | (00)   |   |                   |  | SIL  |                       |  |  |
| 9  | 2.51 5/2.  | 92   | 10-u5/2 5   | <                 | M  | 8,4  | 17/45                 | tie Moist  | not satur  |
|  |  |  | 2.575/1 3   | 0                 | M  |  |                       |  |  |
| -20  | 2.5-1 5/2  | 100  |   |                   |  | S.L.   | 972V                  | el 25%   | 0  |
|  | 1-1' D D   | lation DA                                    | A Dadward Matrix CS Cove                                | rad or Co         | noted Sand G   | Prains 21 ocation  | on: PI -Pore          | e Lining, M=Matr   | iy   |
|  |  | letion, Hiv                                  | M=Reduced Matrix, CS=Cove                               | red or Co         | bated Sand C   | SALES REPORT OF THE PROPERTY OF THE PERSON NAMED IN COLUMN TWO IN COLUMN TO THE PERSON NAMED IN COLUMN TWO IN COLUMN TWIN COLUMN TWO IN COLUMN TWO IN COLUMN TWO IN COLUMN TWO IN COLUMN |                       | BLEMATIC HY  |  |
|  | IL INDICATORS  |  | 41-1-014(440)   | CARGO CONTRACTOR  | The same of the sa | Alaska Color   | APPRICATE RANGE       |  | Dillo Goleo  |
|  | listel (A1)  |  | Alaska Gleyed (A13) _                                   | -                 | _  | Constitution of the Consti |                       |  |  |
|  | don (A2) _ N   |  | Alaska Redox (A14) _                                    | -                 |  |  |                       | A5)  |  |
| lack Histic (  | (A3)\  |  | Alaska Gleyed Pores (                                   | A15)              |  | Alaska Redo  |                       |  | . I la de di da e  |
| lydrogen Su  | ulfide (A4)  |  |   |                   |  | Layer_   | ed without 5          | Y Hue or Redde   | Underlying   |
| hick Dark S  | Surface (A12) N  |  |   |                   |  | Other (Expla   | in in Notes)          | Sanda Isaa   |  |
| Give details   | problematic. s of color change in Nayer (if present): Ty   | lotes.<br>pe: N                              | Depth (ir   | ches):            | NA   | -  |                       |  | A partie   |
| Give details<br>Restrictive La   | of color change in N   | pe: N  |   | ches):            | NA   |  |                       |  | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |
| Give details Restrictive La  | of color change in Nayer (if present): Ty  Present (Y/N):  | pe: N  |   |                   |  | Y INDICATORS   | (2 or more            | required)  |  |
| Give details Restrictive La Hydric Soil  | of color change in Nayer (if present): Ty  Present (Y/N):  | ATORS (6                                     |   |                   |  |  | St                    | required) tunted or Stresse  | d  |
| Give details Restrictive La  | of color change in Nayer (if present): Ty  Present (Y/N):  BY PRIMARY INDIC  | ATORS (a                                     | any one indicator is sufficient rface Soil Cracks (B6)  |                   | SECONDAR<br>Water-staine<br>Leaves (B9)  | d  | St                    | tunted or Stresse  | 100000000000000000000000000000000000000  |
| Give details Restrictive La   | Present (Y/N):  Present (Y/N):  GY PRIMARY INDICATE (A1)  Table (A2)   | ATORS (a                                     | any one indicator is sufficient rface Soil Cracks (B6)  |                   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Drainage Pa<br>Oxidized Rh<br>Living Roots  | tterns (B10)   | St PI Go              | tunted or Stresse<br>ants (D1)<br>eomorphic Positi<br>hallow Aquitard (                    | on (D2)  |
| Give details Restrictive La   | Present (Y/N):  GY PRIMARY INDIC  ter (A1)  Table (A2)   | ATORS (a Su Inu (B) Sp Co Ma                 | any one indicator is sufficient rface Soil Cracks (B6)  |                   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Drainage Pa<br>Oxidized Rhi   | tterns (B10) zospheres along (C3) Reduced  | St PI Go              | tunted or Stresse<br>ants (D1)<br>eomorphic Positi   | on (D2)  |
| Give details Restrictive La   | Present (Y/N):  GY PRIMARY INDIC  ter (A1)  Table (A2)   | ATORS (a Su Inu (B) Sp Co Ma Hy Od           | any one indicator is sufficient  rface Soil Cracks (B6) |                   | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit  | tterns (B10) zospheres along (C3) Reduced  | St Pl Gi St MRi       | tunted or Stresse<br>ants (D1)<br>eomorphic Positi<br>hallow Aquitard (<br>icrotopographic | on (D2)  |
| Give details Restrictive La   | Present (Y/N):  Present (Y/N):  Present (A1)  Table (A2)  S (B1)  Present (B2)   | ATORS (a Su Inu (B) Sp Co Ma Hy Od           | any one indicator is sufficient rface Soil Cracks (B6)  |                   | SECONDAR<br>Water-staine<br>Leaves (B9)<br>Drainage Pa<br>Oxidized Rh<br>Living Roots<br>Presence of<br>Iron (C4)  | tterns (B10) zospheres along (C3) Reduced  | St Pl Gi St MRi       | eomorphic Positi hallow Aquitard ( icrotopographic elief (D4)                              | on (D2)  |
| Give details Restrictive La Restrict | Present (Y/N):  Present (Y/N):  Present (A1)  Table (A2)  S (B1)  Present (B2)   | ATORS (a Su Inu (B) Sp Co Ma Hy Od Dr Wa     | any one indicator is sufficient rface Soil Cracks (B6)  |                   | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit  | tterns (B10) zospheres along (C3) Reduced  | St Pl Gi St MRi       | eomorphic Positi hallow Aquitard ( icrotopographic elief (D4)                              | on (D2)  |
| Give details Restrictive La Restrict | Present (Y/N):  Present (Y/N):  Present (Y/N):  Table (A2)  A3)  S (B1)  Present (B2)  Crust (B4)  | ATORS (a Su Inu (B) Sp Co Ma Hy Od Dr Wa     | any one indicator is sufficient rface Soil Cracks (B6)  |                   | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposit  | tterns (B10) zospheres along (C3) Reduced  | St Pl Gi St MRi       | eomorphic Positi hallow Aquitard ( icrotopographic elief (D4)                              | on (D2)  |
| Give details Restrictive La Restrict | Present (Y/N):  Present (Y/N):  Present (Y/N):  Table (A2)  A3)  S (B1)  Present (B2)  Crust (B4)  | ATORS (a Su Inu (B) Sp Co Ma Hy Oc Or Wa Ott | any one indicator is sufficient rface Soil Cracks (B6)  | gery              | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposits Notes:  | tterns (B10) izospheres along (C3) Reduced s (C5)  | St PI  Gi  St  MR  F/ | eomorphic Positi hallow Aquitard ( icrotopographic elief (D4)                              | on (D2)  |
| Give details Restrictive La Restrict | Present (Y/N):  Present (Y/N):  Present (Y/N):  Table (A2)  A3)  Equation (B1)  Equation (B2)  Crust (B4)  Equation (B4)  Equation (B4)  Equation (B4)  Equation (B4)  Equation (B4) | ATORS (a Su Inu (B) Sp Co Ma Hy Oc Or Wa Ott | any one indicator is sufficient  rface Soil Cracks (B6) | gery              | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rh Living Roots Presence of Iron (C4) Salt Deposits Notes:  | tterns (B10) zospheres along (C3) Reduced  | St PI  Gi  St  MR  F/ | eomorphic Positi hallow Aquitard ( icrotopographic elief (D4)                              | on (D2)  |

### AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P): Vegetation Lacking       Forested-Deciduous-Needle-leaved       Forested-Deciduous-Broad-leaved         Forested-Evergreen-Needle-leaved       Scrub Shrub-Deciduous-Needle-leaved       Scrub Shrub-Deciduous-Broad-leaved         Scrub Shrub-Evergreen-Broad-leaved       Scrub Shrub-Evergreen-Needle-leaved       Emergent-Non-persistent         Persistent       Aquatic Bed       Emergent-Non-persistent   |
| Percent Cover (P):         Tree (>5 dbh, >6m tall)         Sapling (<5 dbh, <6m tall)  |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| Vegetation Density/Dominance (P):         Sparse (0-20%)         Low Density (20-40%)         Medium Density (40-60%)         High Density (60-80%)  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="tel:45%">&lt;25% Scattered/Peripheral Cover</a> <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover  |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)   |
| Vegetative Interspersion (P):       Low (large patches, concentric rings)       Moderate (broken irregular rings)         High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
| COUL VARIABLES   |
| SOIL VARIABLES  Soil Factors (P): Soil Lacking Histosol: Fibric Histosol: Hemic Histosol: Saprio   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey   |
| HYDROLOGIC VARIABLES   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennia   |
| Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded  |
| Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)  |
| Return Interval >5 yrs Return Interval Yrs Yrs Return Interval Yrs Yrs Return Interval Yrs  |
| Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow   |
| Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading Property Harden Water at (P) Alkaline (>7.4) Acid (<5.5)   |
| Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable  |
| Basin Topographic Gradient (M):       Low Gradient (<2%)   |
|  |
| LANDSCAPE VARIABLES (M)  |
| Wetland Juxtaposition:       Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below         Only Connected Above Connected Upstream & Downstream Unknown  |
| Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)   |
| Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized   |
| A STATE OF THE STA |

5 up

GPS Technician QA/QC check

#### Wetland Determination Data Form QA/QC Checklist

This form to be completed before leaving the field site.

| Featur  | e ID     | : W844H027 Field Target: 15200 Date: 7/31/15  |
|---------|----------|---|
| For all | iten     | ns not checked, please provide detailed explanation in the notes section of data form.  |
|         |          |   |
| 1.      | Si       | te Description  |
| ••      | O.       | te Description  |
|         | Ø        | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included?  |
| 2.      | Ve       | egetation   |
|         | Ø        | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?   |
|         | Æ        | Vegetation names are entered legibly for all strata present?  |
|         |          | Cover calculations are complete and correct?  |
|         |          | All dominant species have been determined and recorded per strata? Indicator status is correct for each species?  |
|         |          | Dominance Test and Prevalence Index have been completed?  |
| 3.      | So       | oil and the state of the state |
|         | Ø,       | Soil profile is complete?   |
|         | B        | Appropriate hydric soil indicators are marked?  |
| 4.      | Ну       | drology   |
|         |          | Appropriate hydrology indicators are marked?  |
|         | Z        | Surface water, water table, and saturation depths are recorded if present?  |
| 5.      | Fu       | nctions and Values  |
|         | Ø        | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?  |
| 6.      | Fie      | eld Logbook   |
|         | <b>Ø</b> | Notes have been recorded at each site, including general description, sketch, and   |
|         |          | accuracy of pre-mapped wetland boundary as appropriate?   |
|         | M        | Each logbook page is initialed and dated?   |

7. Maps

- ☑ Wetland boundaries have been corrected if necessary?
- ☑ Maps are initialed and dated?

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

lennifer Anderson Joungh An 7/31/15
Scientist (print)

| SITE DESCRIPTION   |                              |                |                 | Film Control                |  |  |
|--|------------------------------|----------------|-----------------|-----------------------------|--|--|
| Survey Type: Centerline 🔀 Ac   | cess Road (explain)          | Other (expla   | in)             | Field Target: 15203         | Map #: <u>52</u> Map Date: <u>6/18/</u> 15 |  |
| Date: 7/31/15  | Project Name & No.:          | Alaska LNG     | 60418403        | Feature Id:                 | W84LH028                                   |  |
| Investigators: Bryan Stra  | ing Dennifer A               | Inderso        | ^               |                             | Team No.: W84                              |  |
| State: Alaska  | Region: Alaska               |                | Milepost: 4     | 17.3                        |  |  |
| Latitude: 65 15 50 . 88  |                              | Longitude      | 148 35          |                             | Datum: WGS84                               |  |
| Logbook No.: 02  | Logbook Page No.:            | 77-            |                 |                             | ICO NEO_PIT_PLUG                           |  |
| 0.77 0.40 44.77 0.0  |                              |                |                 | THACTE IS SITE WAS IN A     |  |  |
| SITE PARAMETERS  |                              |                | Landform (hill  | slope, terrace, hummock     | s etc.): D da                              |  |
| Subregion: (nterior Itig   | hlands                       |                |                 |                             | Convex hummocky Mo                         |  |
| Slope (%): 14 Mcasured   | fication: / \ ' A D          |                |                 | Vildlife Use: Work          |  |  |
| Pre-mapped Alaska LNG/NWI classi  Are climatic/hydrologic conditions on      |                              | of year?       | Are "No         | ormal Circumstances" pre    | esent:                                     |  |
| Yes No (if no e  | explain in Notes)            |                | Yes             | No (If no, ex               | plain in Notes.)                           |  |
| Are Vegetation, Soil, or   | Hydrology Significant        | tly Disturbed? |                 | _(If yes, explain in Notes  |  |  |
| Are Vegetation, Soil, or   | Hydrology Naturally F        | Problematic?   | No_X            | _ (If yes, explain in Notes | s.)  |  |
| SUMMARY OF FINDINGS  |                              |                |                 |                             |  |  |
| Hydrophytic Vegetation Present? Ye   | es No                        | Is             | the Sampled A   | Area within a Wetland?      | Yes No                                     |  |
| Hydric Soil Present? Ye  | es No×                       | w              | etland Type:    | U                           |  |  |
| Wetland Hydrology Present? Ye  | es No                        | — Ala          | aska Vegetation | Classification (Viereck):   | IAI  |  |
| Notes and Site Sketch: Please include corridor. Closed myed A+ Point, Picmar | forest south<br>compy is clo | of the         | e Point         | with very de nal/borderlin  | nse Piemar-Sep unde                        |  |

**VEGETATION** (use scientific names of plants)

| Tree Stratum (Plot sizes: [00]             | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC:(A)  |
|--|---------------------|-------------------------------|---------------------|--|
| 1. Picea Mariana (25.30)                   | 40%                 | (Y/N)                         |                     | Total Number of Dominant Species Across All Strata: (B)  |
| /  | 370/                | 1                             | FacW                | % Dominant Species that are OBL, FACW, or FAC:(A/B)  |
| 3. Setula nevalasleana                     |                     |                               | Fac 11              |  |
| 4.   |                     |                               |                     | Prevalence Index worksheet:  |
| Total Cover:                               | 40                  |                               |                     | Total % Cover of: Multiply by:   |
| 50% of total cover                         | 11                  | 0% of total cov               | ver: 🛇              | OBL species: X 1 =   |
| Sapling/Shrub Stratum ( 26 )               | Absolute            | Dominant                      | Indicator           | FACW species: 65 X 2 = 130   |
|  | % Cover             | Species?<br>(Y/N)             | Status              | FAC species  |
| 1. Picea Mariana                           | 25%                 | *                             | Facul               | UPL species X 5 =  |
| 2. Rosa acicularis                         | 21.                 | 1                             | Fac U               | Column Totals: 7 (0 (A) 1/0 (B)  |
| 3. Vaccinium vitis idaca                   | 3/.                 |                               | Fac                 | PI = B/A = 2:2   |
| 4. Spirez stevensii                        | T                   |                               | Fae U               |  |
| 5. Betula nevalaskana                      | E/P                 |                               | Facu                |  |
| 6.   |                     |                               |                     | the state of the s |
| 7.   |                     |                               |                     |  |
| 8.   |                     |                               |                     | a magili from the  |
| 9.   |                     |                               |                     |  |
| Total Cover: 50% of total cover:           | 200                 | % of total cov                | er:                 |  |
| VEGETATION (use scientific names of plants | )                   |                               |                     |  |
| Herb Stratum ()                            | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  |
| 1. Calamagrostis lapponica                 | 31.                 | Y                             | For.                | Prevalence Index is ≤ 3.0  |
| 2. (Leocaulon lividicon                    | 17.                 | /                             | Far U               | Morphological Adaptations <sup>1</sup> (Provide supporting data in Notes)  |
| 3. Cornus canadensis                       | 2%                  | Y                             | Fac U               | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 4. Mertensia Peniculata                    | T                   |                               | Facu                | Indicators of hydric soil and wetland hydrology must be present unless   |
| 5.   | , 8                 |                               |                     | disturbed or problematic.  |
| 6.   |                     |                               |                     |  |
| 7.   | 60                  |                               |                     | % Bare Ground  |
| 8.   |                     |                               |                     | % Cover of Wetland Bryophytes  |
| 9.   |                     |                               |                     | Total Cover of Bryophytes  |
| 10.  |                     | 1111                          |                     | % Cover of Water   |
| 3.   |                     |                               |                     | Hydrophytic Vegetation Present (Y/N):  |
| Total Cover: 50% of total cover:           | 3 20                | % of total cove               | er: <u>1. 2</u>     | Notes: (If observed, list morphological adaptations below):  |

Water Table Present (Y/N):

Saturation Present (Y/N): (includes capillary fringe)

Notes:

Depth (in):

Depth (in):

NA

NA

EC: NA

| SOIL   |                      |            | Date F                                 | eature ID                          | the said          |   |                               | Soil Pit Required (Y/N)  |  |  |
|--|----------------------|------------|--|------------------------------------|-------------------|---|-------------------------------|--|--|--|
|  | FILE DESCRIPTION:    |            | Colds.                                 | THE RESERVE OF THE PERSON NAMED IN | ment the          | indicator or o                          | confirm the absen             | ce of indicators.)   |  |  |
| and the same of th | Matrix               | 1          | Redox Features                         |                                    |                   | 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - |                               |  |  |  |
| Depth<br>(inches)  | Color (moist)        | %          | Color (moist)                          | %                                  | Type <sup>1</sup> | Loc <sup>2</sup>                        | Texture                       | Notes  |  |  |
| 2  | Color (moist)        | ,,,        | out (molet)                            |                                    | . , , , ,         |   |                               |  |  |  |
| ) - 4  | 1042/1               | 100        |  |                                    |                   |   | S.L                           |  |  |  |
| 17   | 2,514/3              | (80)       |  |                                    | - 11111           |   | SIL                           | Moist gravel - 370   |  |  |
| 1.1  | 237963               | 100        |  | 1 12                               |                   |   | 3,0                           |  |  |  |
| 7-20   | 2.54 5/3             | 100        |  |                                    |                   |   | 5.1                           | gravel ~76   |  |  |
|  | 2.51 27 3            | , ,        |  |                                    |                   |   |                               |  |  |  |
|  | - A                  |            | 41                                     |                                    |                   |   |                               | F LISTER LET   |  |  |
| Type: C=0  | Concentration, D=Dep | letion, RM | =Reduced Matrix,                       | CS=Cove                            | red or Co         | ated Sand G                             | Grains. <sup>2</sup> Location | n: PL=Pore Lining, M=Matrix.   |  |  |
| Marie Control of the Control   | OIL INDICATORS       |            |  |                                    |                   |   |                               | FOR PROBLEMATIC HYDRIC SOILS   |  |  |
| Histosol or  | Histel (A1)          | _          | Alaska Gleye                           | d (A13) _                          | N                 |   | Alaska Color                  | Change (TA4) <sup>4</sup> N  |  |  |
| Histic Epipe   | edon (A2)            |            | Alaska Redo                            | x (A14)                            | N                 | 1910                                    | Alaska Alpine                 | Swales (TA5)   |  |  |
|  | c (A3)               | EDIE E     | Alaska Gleye                           | d Pores (                          | A15)/             | V                                       | Alaska Redox                  | with 2.5Y Hue  |  |  |
| No.  | Sulfide (A4)         | 1200       |  |                                    |                   |   | Alaska Gleye<br>Layer         | d without 5Y Hue or Redder Underlying  |  |  |
| Thick Dark   | Surface (A12)        |            |  |                                    |                   |   | Other (Explain in Notes)      |  |  |  |
| Notes:   | il Present (Y/N):    | 70         | The Helling                            | a want                             |                   | Will have                               | 170 × 11-14                   | DOS TRANSPORTED TO THE RESERVENCE OF THE RESERVE |  |  |
| HYDROLO  | GY PRIMARY INDIC     | ATORS (a   | ny one indicator is                    | sufficient)                        |                   | SECONDAF                                | RY INDICATORS                 | (2 or more required)   |  |  |
| Surface W  | ater (A1)            | Su         | face Soil Cracks (E                    | 36)/_                              |                   | Water-staine<br>Leaves (B9)             |                               | Stunted or Stressed Plants (D1)  |  |  |
| High Wate  | r Table (A2)         | Inu<br>(B7 |  | ble on Aerial Imagery Drainage Pa  |                   |   | atterns (B10)                 | Geomorphic Position (D2)   |  |  |
| Saturation (A3) Sparsely Vegetat Concave Surface   |                      |            | arsely Vegetated<br>ncave Surface (B8) | N                                  |                   | Oxidized Rh<br>Living Roots             | izospheres along<br>(C3)      | Shallow Aquitard (D3)  |  |  |
| Water Marks (B1) Marl Deposits (B15)   |                      |            |  | Presence of<br>Iron (C4)           | Reduced           | Microtopographic<br>Relief (D4)         |                               |  |  |  |
| Sediment Deposits (B2) Hydrogen Sulfide Odor (C1)  |                      |            |  | Salt Deposit                       | s (C5)            | FAC-Neutral Test (D5)                   |                               |  |  |  |
|  | sits (B3)            |            | r-Season<br>ater Table (C2)            | N                                  |                   | Notes:                                  | The Land                      |  |  |  |
| Drift Depos  |                      |            | nimati wa                              | · · ·                              | esvi car          |   |                               |  |  |  |
|  | or Crust (B4)        | _ Oti      | ner (Explain in Note                   | :5).                               |                   |   |                               |  |  |  |
|  |                      | Ott        | ner (Explain in Note                   | 15).                               |                   |   | - S- In-astiv                 | AND THE CONTRACT OF THE  |  |  |
| Algal Mat  |                      | Oth        | ner (Explain in Note                   | <i>15</i> ).                       |                   |   |                               |  |  |  |
| Algal Mat of   |                      | Ott        | Depth (in): NA                         |                                    |                   |   |                               |  |  |  |

### AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P): Vegetation Lacking       Forested-Deciduous-Needle-leaved       Forested-Deciduous-Broad-leaved         Forested-Evergreen-Needle-leaved       Scrub Shrub-Deciduous-Needle-leaved       Scrub Shrub-Deciduous-Broad-leaved         Scrub Shrub-Evergreen-Broad-leaved       Scrub Shrub-Evergreen-Needle-leaved       Emergent-Non-persistent         Persistent       Aquatic Bed   |
| Percent Cover (P): Tree (>5 dbh, >6m tall)         Sapling (<5 dbh, <6m tall)         Tall shrub (2-6m)         Short shrub (0.5-2m)           Dwarf shrub (<0.5m)   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| Vegetation Density/Dominance (P):         Sparse (0-20%)         Low Density (20-40%)         Medium Density (40-60%)         High Density (60-80%)  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A   |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover  |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface)  Abundant (>50% of surface)  |
| Vegetative Interspersion (P):       Low (large patches, concentric rings)       Moderate (broken irregular rings)         High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
|  |
| SOIL VARIABLES  Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey   |
| INCREASE AND ARREST  |
| HYDROLOGIC VARIABLES   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inle   |
| Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded  |
| Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)  |
| Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 y |
| Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow   |
| Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading  |
| Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits  Glacial Till/Not Permeable   |
| Basin Topographic Gradient (M):       Low Gradient (<2%)   |
|  |
| LANDSCAPE VARIABLES (M)  |
| Wetland Juxtaposition:       Wetland Isolated       Wetlands within 400m, Not Connected       Only Connected Below         Only Connected Above       Connected Upstream & Downstream       Unknown  |
| Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)   |
| Watershed Land Use:         0-5% Rural   |
| Size: Small (<10 acres) Medium (10-100 acres) Large (>100 acres)   |

eneck:

GPS Technician QA/QC check:

Page 4 of 4

### Wetland Determination Data Form QA/QC Checklist

This form to be completed before leaving the field site.

| Feature    | e ID: <u>W84LH028</u> Field Target: <u>(5203</u> Date: <u>7/31/15</u>   |
|------------|---|
|            | items not checked, please provide detailed explanation in the notes section of data form.   |
|            |   |
| 1.         | Site Description  |
|            | <ul> <li>☐ Site description, site parameters and summary of findings are complete?</li> <li>☐ A detailed site sketch is included?</li> </ul>  |
| 2.         | Vegetation  |
|            | <ul> <li>At least 80% of onsite vegetation has been keyed to species, or collected for late identification?</li> <li>Vegetation names are entered legibly for all strata present?</li> <li>Cover calculations are complete and correct?</li> <li>All dominant species have been determined and recorded per strata?</li> <li>Indicator status is correct for each species?</li> <li>Dominance Test and Prevalence Index have been completed?</li> </ul> |
| 3.         | Soil  |
|            | <ul><li>☑ Soil profile is complete?</li><li>☑ Appropriate hydric soil indicators are marked?</li></ul>  |
| 4.         | Hydrology   |
|            | <ul> <li>Appropriate hydrology indicators are marked?</li> <li>Surface water, water table, and saturation depths are recorded if present?</li> </ul>  |
| <b>5</b> . | Functions and Values  |
|            | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?  |
| 6.         | Field Logbook   |
|            | Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?  |

#### 7. Maps

|          |     | Wetland boundaries have been corre Maps are initialed and dated?                              | ected if necessary | ? |         |
|----------|-----|---|--------------------|---|---------|
| 8.       | Ph  | hotos   |                    |   |         |
|          |     | Four photos were taken for each We soil pit, 1 soil plug)? Two photos were taken for each Obs |                    |   |         |
| <b>K</b> | )ex | ann fer Anderson  | fart               | V | 7/31/15 |

Bran Strong

| Survey Type: Centerline Access Road (explain). Other (explain) Field Target: \$221 Map #: 5! Map Pate (1881)  Date: 7/31/15 Project Name & No.: Alaska LNG 69419403 Feature Id: \$2414029 Investigators: \$1.00 Pate: Alaska No. 2418403 Milepost: \$4/7 Pate: Alaska No. 2418404 No.: \$244 Part  | SITE DESCRIPTION  |   |  |  |  |                  |  |
|--|---|---|--|--|--|------------------|--|
| Investigators: Green Hong Jenn for Anderson Team No.: () 344  State: Alaska Region: Alaska Milepost: 4/7  Latitude: (5,5 16) 03.5 6 8/4  Logbook No.: () Logbook Page No.: () Picture No.: () 34/2 H729 No. () 24.5 6 18/2  SITE PARAMETERS  Subregion: () Across Handles Long Concerning Conc | Survey Type: Centerline Acces   | ss Road (explain)   | Other (expla                             | ain)   | Field Targ                                 | jet:15201        | Map #: 51 Map Date (18/15  |
| SITE PARAMETERS  SUDPEGION:   Logbook Page No.:     Picture No.:   | Date: 7/31/15   | Project Name & No.:   | Alaska LNG                               | 60418403   |  | Feature Id:      | W84LH029   |
| Latitude: C5 16 08.5686 Logbook Page No.: 10 Picture No.: Wall Hadden St. Logbook No.: 02 Logbook Page No.: 10 Picture No.: Wall Hadden St. Local relief (concave, convex, none): 31.366 Pt. Pre-Pre-Pre-Pre-Pre-Pre-Pre-Pre-Pre-Pre-  | Investigators: Brecan Stra  | ing Dennif  | er An                                    | Zerson   |  |                  | Team No.: ( ) 5 4  |
| SITE PARAMETERS  Subregion: Acros Hambers  Subregion: Acros Hambers  Sippe (%): 18 7. Massect  Local relief (concave, convex, none): Signific ancave Hambers  Are climatichydrologic conditions on the site typical for this time of year?  Are Signed (%): 18 7. Massect  Are climatichydrologic conditions on the site typical for this time of year?  Are Vegetation Soil or Hydrology Significantly Disturbed?  Are Vegetation Soil or Hydrology Naturally Problematic?  No (If yes, explain in Notes)  SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes X No Significantly Disturbed?  Wetland Type: PSS4/Fo48  Wetland Hydrology Present?  Yes X No Alaska Vegetation Classification (Viereck): 11A2  Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey conditor.  Are vegetation Soil of the state of Saturation in Control of Satura | State: Alaska   | Region: Alaska  |  | Milepost: 4  | 117  |                  |  |
| SITE PARAMETERS  Subregion: Acros Hambers  Subregion: Acros Hambers  Sippe (%): 18 7. Massect  Local relief (concave, convex, none): Signific ancave Hambers  Are climatichydrologic conditions on the site typical for this time of year?  Are Signed (%): 18 7. Massect  Are climatichydrologic conditions on the site typical for this time of year?  Are Vegetation Soil or Hydrology Significantly Disturbed?  Are Vegetation Soil or Hydrology Naturally Problematic?  No (If yes, explain in Notes)  SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes X No Significantly Disturbed?  Wetland Type: PSS4/Fo48  Wetland Hydrology Present?  Yes X No Alaska Vegetation Classification (Viereck): 11A2  Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey conditor.  Are vegetation Soil of the state of Saturation in Control of Satura | Latitude: 65° 16' 03.5686   |   | Longitude                                | : 148 °39  | 5 13.6                                     | .0               | Datum: WGS84   |
| Subregion: Afterior Agnhands  Landform (hillistope, terrace, hummocks, etc.): Read and Siope (%): 187. Measure & Magnet & Local relief (concave, convex, none): 31. http://www.mocks.percet.ph/mocks.percet.ph |   | Logbook Page No.:   |  |  |  |                  | CO-VEC-PIT-PLUG  |
| Subregion: Afterior Agnhands  Landform (hillistope, terrace, hummocks, etc.): Read and Siope (%): 187. Measure & Magnet & Local relief (concave, convex, none): 31. http://www.mocks.percet.ph/mocks.percet.ph | CITE DADAMETEDS   |   |  |  |  |                  |  |
| Slope (%): 187. MEASURE NEGRET Local relief (concave, convex, none): Stight (concave Human Pre-mapped Alaska LNG/NWI classification: PGd/SSUS 1A2 Evidence of Wildlife Use: No. observed Modern Modes No. (if no explain in Notes)  Are climatic/hydrologic conditions on the site typical for this time of year? Yes X No. (if no explain in Notes)  Are Vegetation. Soil., or Hydrology. Significantly Disturbed? No. X (if yes, explain in Notes)  Are Vegetation. Soil., or Hydrology. Naturally Problematic? No. X (if yes, explain in Notes)  SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes X No. Is the Sampled Area within a Wetland? Yes X No. Hydric Soil Present? Yes X No. Alaska Vegetation Classification (Viereck): 11A2  Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor. Cancare across slape Slothly Concare down slave. Moderate hammoules.  No evidence of saturation in organics Moderate hammoules. Alaberate hammoules. The concare down slave in Prematrost. A laborate frost factor. We have a great frost as the concare down slave in Prematrost. A laborate frost factor. We have a great frost as the concare down slave in Prematrost. A laborate frost factor. We have a great frost as the concare down slave in Prematrost. A laborate frost factor. He have a great frost as the concare down slave in Prematrost. A laborate frost factor by the concare down slave in Prematrost. A laborate frost factor by the concare down slave in Prematrost. A laborate frost factor by the concare down slave in Prematrost. A laborate frost factor by the concare down slave in Prematrost. A laborate factor factor for the concare down slave in Prematrost. A laborate factor fact |   | 1 3   |  | Landform (hill   | Islope, terra                              | ce, hummock      | s, etc.): Reskslape  |
| Pre-mapped Alaska LNG/NWI classification: Prod/SSR 1 2 Evidence of Wildlife Use: None observed  Are climatichydrologic conditions on the site hybical for this time of year?  Are "Normal Circumstances present: Yes No. (If no explain in Notes)  Are Vegetation., Soil., or Hydrology. Significantly Disturbed?  Are Vegetation., Soil., or Hydrology. Naturally Problematic?  No. (If yes, explain in Notes)  Are Vegetation., Soil., or Hydrology. Naturally Problematic?  No. (If yes, explain in Notes)  Are Vegetation. Soil., or Hydrology. Naturally Problematic?  No. (If yes, explain in Notes)  No. (If yes, explain in Notes)  Are Vegetation Present? Yes. No.  Is the Sampled Area within a Wetland? Yes. No.  Hydrophytic Vegetation Present? Yes. No.  Wetland Type: PSSA/Four.  Wetland Type: PSSA/Four.  Wetland Hydrology Present? Yes. No.  Alaska Vegetation Classification (Viereck): IJAZ  Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor. (Accuse across slope. Slophty Cencuse Cours Slope. Maderate humanutes.)  No. (If yes, explain in Notes)  N |   |   |  | 17.  |  |                  |  |
| Are climatic/hydrologic conditions on the site typical for this time of year?  Yes X No (if no explain in Notes)  Are Vegetation Soil or Hydrology Significantly Disturbed?  Are Vegetation Soil or Hydrology Naturally Problematic?  Are Vegetation Soil or Hydrology Naturally Problematic?  Are Vegetation Soil or Hydrology Naturally Problematic?  No (if yes, explain in Notes)  SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes X No Is the Sampled Area within a Wetland? Yes X No Hydric Soil Present?  Wetland Type: PSS4/Foug  Wetland Type: PSS4/Foug  Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor. Concare cross slope Stocked Concare down slope. Medicate his manual soil above fost table. Soil is moist but not schooled. Alpha alpha positive in perma frost and the lack of the second sources. Transitional site. 1870 scree. North a spect.  Fairly thick PicMar-Sar cover. Stanted ware due to cold soils than wet conditions. PicMar-Sar 2-10' mostly. A few PicMar-Timera. Less than 10' Conditions. PicMar-Sar 2-10' mostly. A few PicMar-Timera. Less than 10' Conditions. PicMar-Sar 2-10' mostly. A few PicMar-Timera. Less than 10' Conditions. PicMar-Sar 2-10' mostly. A few PicMar-Timera. Less than 10' Conditions. PicMar-Sar 2-10' mostly. A few PicMar-Timera. Less than 10' Conditions. PicMar-Timera. Less than 10'  |   |   | 1112                                     | Evidence of V  | Vildlife Use:                              | None o           | berryed Modera+  |
| Are Vegetation, Soil, or Hydrology   | Are climatic/hydrologic conditions on the   | e site typical for this time  |  | Are "No  | ormal Circui                               | mstances" pre    | esent:   |
| Are Vegetation Soil or Hydrology Naturally Problematic? No (If yes, explain in Notes.)  SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No No Wetland Type: PSSt/Foll 8  Wetland Hydrology Present? Yes No Alaska Vegetation Classification (Viereck): 11AZ  Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor. Concave across slope. Slightly Concave down slope. Moderate howevered to be excluded as a solution of sample of the structure of saturation in organics. Moderate well defined solve frost table. Soil is most but not saturated. Alpha alpha positive in permafrost. The first thick Plemars Surface. Transitional site. 1870 Slope. North aspect.  Fairly thick Plemars or cover. Stantes more due to cold soils than wet conditions. Plemars Surface 2.10' mostly. A few Plemars Timere. Less than 10's demandant. Site probably represents upper case of the wetland boundary.   | YesX_ No (if no exp   | lain in Notes)  |  |  | 9.30                                       |                  |  |
| SUMMARY OF FINDINGS  Hydrophytic Vegetation Present? Yes X No Is the Sampled Area within a Wetland? Yes X No  Hydric Soil Present? Yes X No Wetland Type: PSS4/FOUB  Wetland Hydrology Present? Yes X No Alaska Vegetation Classification (Viereck): 11AZ  Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor. Concare across slope Stock! Concare downstope. Medicate humaniles. Do evidence of saturation in organics Moderately well danaced soil above fost table. Soil is most but not seturated. Alpha alpha positive in permafrost at 1" (g" below mineral surface). Transitional site. 1870 slope. North aspect. Fairly thick Picmare Ser cover. Stanted more due to cold soils than wet conditions. Picmare Sar 2-10' mostly. A few Picmare Timare. Less than 10's damagradical. Site probably represents upper colds of the wetland bundary.  |   |   |  |  |  |                  |  |
| Hydrophytic Vegetation Present? Yes No Is the Sampled Area within a Wetland? Yes No No Hydric Soil Present? Yes No Wetland Type: PSSt / FOUR Wetland Hydrology Present? Yes No Alaska Vegetation Classification (Viereck): 1/AZ  Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor. Concare across slope. Slophtly concare down slape. Maderate homeoules. No evidence of saturation in organics Moderately well danced soil above fost table. Soil is most but not schooled. Alpha alpha positive in permufost, a T" (q" below sinceral surface). Transitional site. 1870 slope. North aspect. Fairly thick PICMAR-Sar cover. States more due to cold soils than wet conditions. PICMAR-Sar 2-10' mostly. A few PICMAR-T in arca, less than 10'r. downstations.   |   | drology Naturally F   | Problematic?                             | NO_X   | _ (II yes, e)                              | piairi iri Notes |  |
| Wetland Hydrology Present?  Yes X No Alaska Vegetation Classification (Viereck): 11AZ  Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor.  Concave across slope Slightly Concave downslope. Moderate hoursoiles.  Do evidence of saturation in organics Moderately well defined soil above fost table. Soil is moist but not seturated. Alpha alpha positive in perma frost, a trib (a" below mineral surface), Transitional site, 1870 slope. North aspect.  Fairly thick PICMAR-Sar cover. Stanted more due to cold soils than wet conditions. PICMAR-Sar 2-10' mostly. A few PICMAR-T in area, less than 10's downgradient. Site probably represents upper edge of the wetland boundary.  |   | × N-  | lo.                                      | the Compled /  | Area within                                | a Watland?       | Ves V No   |
| Wetland Hydrology Present? Yes No Alaska Vegetation Classification (Viereck): 1/AZ  Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor. Concare across slope. Slophly concave down slope. Moderate hormoules. No evidence of saturation in organics Moderately well danced soil above fost table. Soil is moist but not saturated. Alpha alpha positive in permatrost, a 17" (a" below mineral surface). Transitional site, 1870 slope. North aspect. Fairly thick PICMAR-Sar cover. Stanted more due to cold soils than wet conditions. PICMAR-Sar 2-10' mostly. A few PICMAR-T in area, Less than 10'/s downgradient. Site probably represents upper code of the wetland boundary.  |   |   | IS                                       | the Sampled A  | area within                                | a welland:       | 165 110  |
| Notes and Site Sketch: Please include Directional & North Arrow, Centerline, Length of feature, Distances from Centerline, Photo Locations, and Survey corridor. Concave across slope. Slophly concave down slope. Moderate howanoules. No evidence of saturation in organics Moderately well danced soil above frost table. Soil is moist but not seturated. Alpha alpha positive in perma frost, a TT" (q" below mineral surface), Transitional site, 1870 slope. North aspect. Tarry thick PICMAR-Sar cover. Stanted more due to cold soils than wet conditions. PICMAR-Sar 2-10' mostly, A few PICMAR-T in area, Less than 10', downgradient. Site probably represents appear cope of the wetland boundary.  | Hydric Soil Present? Yes_   | X No No   | w  | etland Type:   | PSS4/F                                     | OUB              | List in  |
| corridor. Concave across slope Slightly concave downslope. Moderate hormoules.  No evidence of saturation in organics Moderately well drained soil above fost table. Soil is moist but not seturated. Alpha alpha positive in permutorist, a 17" (q" below mineral surface), Transitional site, 1870 slope. North aspect.  Tairly thick PICMAR-Sar cover. Stantez more due to cold soils than wet conditions. PICMAR-Sar cover. Stantez more due to cold soils than wet conditions. PICMAR-Sar 2-10' mostly. A few PICMAR-T in area, Less than 10'1, downgradient. Site probably represents upper edge of the wetland boundary.  | Wetland Hydrology Present? Yes_   | No  | A  | aska Vegetation  | n Classifica                               | tion (Viereck):  | 11AZ   |
| U:142 PSS4/FO4B  | corridor. Concave across s No evidence of satura table. Soil is moist 17" (9" below minera Fairly thick PICMAR Conditions PICMAR. | love. Shoully ation in ord but not so I surface).  2-Sar cover.  Sar 2-10' m  robably repre | torated<br>Transit<br>Stante<br>ostly, I | Modera<br>Modera<br>L. Alpha<br>tional s<br>2 more<br>A few Pl<br>upper ed | slave<br>tely or<br>alph<br>site,<br>due t | Moderall dans    | ate hommoules.  Led So. I above frost  Live in permufrost, at  Less then wet  Less then 10%. |

|  |                     |  | CARLES STREET, SALES                           |  |
|--|---------------------|--|--|--|
| Tree Stratum (Plot sizes:)   | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N)  | Indicator<br>Status                            | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC:   |
| · Picea mariana  | 71                  | 4  | FacW   | Total Number of Dominant Species Across All Strata: 5  |
|  |                     |  |  | % Dominant Species that are OBL, FACW, or FAC: _/UD  |
| 3.   |                     |  |  | CONTROL OF THE SECTION OF THE SECTIO |
|  |                     |  |  | Prevalence Index worksheet:  |
| Total Cover  | .77                 |  |  | Total % Cover of: Multiply by:   |
| 50% of total cover   | r: <u>3.5/</u> - 20 | 0% of total cov  | ver: 1.47                                      | OBL species:X 1 =  |
| apling/Shrub Stratum (   | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N)  | Indicator<br>Status                            | FACW species: 58   |
| Rhododondrum groenlandicum   | 5%                  |  | Fac:   | UPL speciesX 5 =   |
| Vocanium vitis-Haga  | 7%                  |  | Fac.   | Column Totals: 79 (A) 178 (B)  |
| · Vaccinium Mainosum   | 21                  |  | Fac  | PI = B/A = 2.25  |
| Vaccinium sylinecus  | i/.                 |  | 066  |  |
| · Rhodo derdrum tamentasum   | 2/.                 |  | Far W  |  |
| Picea maniana  | 45/                 |  | Facil  |  |
| Betwla nepalaskana   | T                   |  | Faell  |  |
| Spiraca Stevenii   | 1/-                 |  | Facul  |  |
|  |                     |  |  | The state of the s |
| Total Cover  |                     |  |  |  |
| 50% of total cover   | : 31.5 20           | % of total cov   | er: 12-6                                       |  |
|  |                     |  |  |  |
| EGETATION (use scientific names of plants  | s)                  |  |  |  |
|  | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N)  | Indicator<br>Status                            | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  |
| erb Stratum ( 26' )  | Absolute<br>% Cover | manufacture of the same of the | Status   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0   |
| · Colomograstis Jappan ca  | Absolute            | Species?   |  | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in   |
| · Colomograstis lappon ca · Rubus change morus   | Absolute % Cover    | Species?   | Status   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  |
| · Colomognostis lappon ca<br>· Rublus change mones<br>· Erlaphokum vaginatum<br>· Aconggroom glaskanum                   | Absolute % Cover    | Species?   | Status<br>Fac<br>FacW                          | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless   |
| Colomograstis lappon ca Rubus channel monis Erlaphakum vaginatum Aconogoróm alaskanum Petasites frigidus                 | Absolute % Cover    | Species?   | Status Fac | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)   |
| Colomogratis lappon ca  Rubus channemon s  Extophakum vaginatum  Aconogram alaskanum  Petasites forgidus                 | Absolute % Cover    | Species?   | Fac Fac W                                      | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless   |
| Colomograstis lapponica  Rubus channemonis  Erlaphakum vaginatum  Aconogonom alaskanum  Petasites frigidis               | Absolute % Cover    | Species?   | Fac Fac W                                      | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.   |
| Colomognistis lapponica  Rubus channelmonis  Erlophakum vaginatum  Aconogunom alaskanum  Petasites forgidus              | Absolute % Cover    | Species?   | Fac Fac W                                      | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Cover of Wetland Bryophytes   |
| Colomognistis lapponica  Rubus channelmonis  Erlophakum vaginatum  Aconogunom alaskanum  Petasites forgidus              | Absolute % Cover    | Species?   | Fac Fac W                                      | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Cover of Wetland Bryophytes  Total Cover of Bryophytes  |
| Colomogratis lappon ca  Rubus channemonus  Erlophakum vaginatum  Aconogram alaskahum  Petasites forgidus                 | Absolute % Cover    | Species?   | Fac Fac W                                      | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Cover of Wetland Bryophytes  Total Cover of Bryophytes  Cover of Water  |
| Colomograstis lapponica  Rubus channemonis  Extraphorum vaginatum  Accoragonom alaskanum  Petasites frigidus  .          | Absolute % Cover    | Species?   | Fac Fac W                                      | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.  ———————————————————————————————————  |
| 1. Colomograstis lapponica 2. Rubus chomoemorus 3. Eriophosum vaginatum 4. Aconogenom alaskanum 5. Petasites frigidus 6. | Absolute % Cover    | Species?   | Fac<br>Fac W<br>Fac W                          | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Cover of Wetland Bryophytes  Total Cover of Bryophytes  Cover of Water  |
| 5. Petasites frigidus 6. 7. 3. 9. Total Cover:   | Absolute % Cover    | Species?<br>(Y/N)  | Fac<br>Fac W<br>Fac W                          | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  ———————————————————————————————————   |

Politrichum sp 3 Lichen 5

|  |   |            | 1121113            |                     | SAME THE PERSONS  | HO29             | Salara Salara Salara       | Sail Bit Paguired (V/N)                   |  |  |
|--|---|------------|--------------------|---------------------|-------------------|------------------|----------------------------|---|--|--|
| SOIL   |   |            |                    | eature I            |                   |                  |                            | Soil Pit Required (Y/N)                   |  |  |
| SOIL PROFI   | LE DESCRIPTION: (   | Describe   | to the depth neede | d to doc            | ument the         | indicator or     | confirm the absenc         | e of indicators.)                         |  |  |
| Depth  | Matrix  |            | Redox Features     |                     |                   | 1 2              |                            | N   |  |  |
| (inches)   | Color (moist)   | %          | Color (moist)      | %                   | Type <sup>1</sup> | Loc <sup>2</sup> | Texture                    | Notes                                     |  |  |
| 5-8  |   |            |                    |                     |                   |                  |                            | not seturated                             |  |  |
| 3-11   | 10-12/2   | 000        | Y                  |                     |                   |                  | S.L                        | no st                                     |  |  |
| 1-15   | 10-12 4/3   | 100        |                    |                     |                   |                  | GRLOEM                     | ~25% gravel, Moist                        |  |  |
| 5-17   | 2.5+3/1   | DO         |                    |                     |                   |                  | 5.4                        | GREVEL ~ 1270 Moist                       |  |  |
| 7-20   | 7.5723/2  | (00)       |                    |                     | L. L. UI          |                  | 5.1                        | Alpha alpha positive for                  |  |  |
| ¹Type: C=C   | oncentration, D=Depl  | letion, RN | =Reduced Matrix,   | CS=Cov              | vered or Co       | oated Sand       |                            | : PL=Pore Lining, M=Matrix. Charcoal      |  |  |
|  | IL INDICATORS   |            |                    |                     |                   |                  | INDICATORS                 | FOR PROBLEMATIC HYDRIC SOILS <sup>3</sup> |  |  |
| Histosol or H  | listel (A1)   |            | Alaska Gleye       | Alaska Gleyed (A13) |                   |                  |                            | Alaska Color Change (TA4) <sup>4</sup> N  |  |  |
| TO SECURITION OF THE PERSON OF | don (A2)  |            | Alaska Redox (A14) |                     |                   |                  | Alaska Alpine Swales (TA5) |   |  |  |
|  | (A3)N   | 1016       | Alaska Gleye       | ed Pores            | (A15)             |                  | Alaska Redox with 2.5Y Hue |   |  |  |
|  | ulfide (A4)   |            |                    | - transu            | toetati           |                  | Alaska Gleyed              | d without 5Y Hue or Redder Underlying     |  |  |
| Thick Dark S   | Surface (A12)   |            |                    |                     |                   | Other (Explain   |                            |   |  |  |
| disturbed or<br>Give details<br>Restrictive L  | problematic. s of color change in N ayer (if present): Ty  Present (Y/N): | Notes.     | nafrost            | Depth               | (inches):         | 17               |                            | low mineral surface) No                   |  |  |

| ORS (any one indicator is sufficient)                              | SECONDARY INDICATORS (2 or more required)   |                                 |  |  |
|--|---|---------------------------------|--|--|
| Surface Soil Cracks (B6)   | Water-stained<br>Leaves (B9)  | Stunted or Stressed Plants (D1) |  |  |
| Inundation Visible on Aerial Imagery (B7)                          | Drainage Patterns (B10)   | Geomorphic Position (D2)        |  |  |
| Sparsely Vegetated<br>Concave Surface (B8)                         | Oxidized Rhizospheres along Living Roots (C3)   | Shallow Aquitard (D3)           |  |  |
| Marl Deposits (B15)  | Presence of Reduced<br>Iron (C4) N*   | Microtopographic Relief (D4)    |  |  |
| Hydrogen Sulfide<br>Odor (C1)                                      | Salt Deposits (C5) N  | FAC-Neutral Test (D5)           |  |  |
| Dry-Season<br>Water Table (C2)                                     | Notes: Alpha alpha posi-  | the starting at 17" in          |  |  |
| Other (Explain in Notes):  | Notes: Alpha alpha positive starting at 17" in. frozen later (a" below mineral surface) Some satiration likely early in the growing |                                 |  |  |
|  | Season.   | 1 (M) main, 13 and upaco, 31900 |  |  |
| Depth (in): NA   |   | 7                               |  |  |
| Depth (in):  | Wetland Hydrology Present (Y/N):  |                                 |  |  |
| Saturation Present (Y/N): (includes capillary fringe)  Depth (in): |   | EC: NA                          |  |  |
|  | Surface Soil Cracks (B6)  | Surface Soil Cracks (B6)        |  |  |

### AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved         Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved         Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed  |
| Percent Cover (P): Tree (>5 dbh, >6m tall) 7       Sapling (<5 dbh, <6m tall) 4 5       Tall shrub (2-6m) 0       Short shrub (0.5-2m) 7         Dwarf shrub (<0.5m) 10  |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even   |
| Vegetation Density/Dominance (P):         Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%)  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none)X One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover  |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)   |
| Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
|  |
| SOIL VARIABLES  Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric   |
| Mineral: Gravelly Mineral: Sandy Mineral: Silty  Mineral: Clayey   |
| HYDROLOGIC VARIABLES   |
| Inlet/Outlet Class (P): No Inlet/Outlet V No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No   |
| Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet   |
| Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded  |
| Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)  |
| Frequency of Overbank Flooding (P): No Overbank Flooding X Return Interval 1-2 yrs Return Interval 2-5 |
| Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow   |
| Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading  |
| Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable Permeability Stratified Deposits   |
| Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%)   |
|  |
| Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring   |
|  |
| Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring   |
| Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below  |
| Evidence of Seeps and Springs (P): No Seeps or Springs       Seeps Observed       Intermittent Spring       Perennial Spring         LANDSCAPE VARIABLES (M)         Wetland Juxtaposition:       Wetland Isolated       Wetlands within 400m, Not Connected       Only Connected Below         Only Connected Above       Connected Upstream & Downstream       Unknown   |
| Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream Unknown  Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)   |

Page 4 of 4

#### Wetland Determination Data Form QA/QC Checklist

This form to be completed before leaving the field site.

| Feature ID: <u>W84LH029</u> Field Target: <u>15201</u> Date: <u>7131/15</u>  |
|--|
| For all items not checked, please provide detailed explanation in the notes section of data form.  |
|  |
|  |
| 1. Site Description  |
| Site description, site parameters and summary of findings are complete?  A detailed site sketch is included?                                   |
| 2. Vegetation  |
| At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  |
| ✓ Vegetation names are entered legibly for all strata present?   |
| ☑ Cover calculations are complete and correct?   |
| <ul><li>☑ All dominant species have been determined and recorded per strata?</li><li>☑ Indicator status is correct for each species?</li></ul> |
| Dominance Test and Prevalence Index have been completed?   |
| 3. Soil  |
|  |
| <ul><li>☒ Soil profile is complete?</li><li>☒ Appropriate hydric soil indicators are marked?</li></ul>   |
|  |
| 4. Hydrology   |
| ☑ Appropriate hydrology indicators are marked?   |
| Surface water, water table, and saturation depths are recorded if present?   |
| 5. Functions and Values  |
| ☑ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6. Field Logbook   |

Notes have been recorded at each site, including general description, sketch, and

accuracy of pre-mapped wetland boundary as appropriate?

☑ Each logbook page is initialed and dated?

### 7. Maps

Wetland boundaries have been corrected if necessary?

☑ Maps are initialed and dated?

#### 8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

mifer Anderson

| SITE DESCRIPTION  |  |                    |                 |                            | 2 ( - /   |
|---|--|--------------------|-----------------|----------------------------|---|
| Survey Type: Centerline 📈 Acces   | ss Road (explain)                              | Other (expla       | in)             | Field Target: 15202        | Map #: NA Map Date: 6/18/15   |
| Date: 7/31/15   | Project Name & No.:                            | Feature Id         | : W84 LH030     |                            |   |
| Investigators: Dream Strong   | Jennifer                                       | Anderso            | ^               |                            | Team No.: W 34  |
| State: Alaska   | Region: Alaska                                 | 2 <sup>4</sup> The | Milepost: L     |                            |   |
| Latitude: 65° 16' 15 08   |  | Longitude:         | 148°35          | 34.17                      | Datum: WGS84  |
| Logbook No.: 02   | Logbook Page No.:                              | 1                  | Picture No.:    | W84LH030_VE                | CO-VEG-PIT-PLUG   |
| SITE PARAMETERS   |  |                    |                 |                            |   |
| Subregion: Interior Highla  | 25   |                    | Landform (hi    | llslope, terrace, hummock  | is, etc.): Backslope  |
| Slope (%): 24% Aspect   | Na measure                                     | 2                  | Local relief (d | concave, convex, none):    | Concare Hummocky-N  |
| Pre-mapped Alaska LNG/NWI classifica  | ation: U; (A2                                  |                    | Evidence of     | Wildlife Use: None of      | served  |
| Are climatic/hydrologic conditions on the   | e site typical for this time<br>lain in Notes) | of year?           |                 | ormal Circumstances" pre   |   |
| Yes No (if no exp   |  | tly Disturbed?     |                 | (If yes, explain in Notes  | Carlot All Carlot and |
| Are Vegetation, Soil, or Hy   |  | Problematic?       |                 | (If yes, explain in Note   |   |
| SUMMARY OF FINDINGS   |  |                    |                 |                            |   |
| Hydrophytic Vegetation Present? Yes_  | / No   | Is                 | the Sampled     | Area within a Wetland?     | Yes No  |
| Hydric Soil Present? Yes_   | No_K   | _ w                | etland Type:    | U                          |   |
| Wetland Hydrology Present? Yes_   | No   | — Ala              | aska Vegetatio  | n Classification (Viereck) | :1AZ  |
| Notes and Site Sketch: Please include corridor. P. + 209 a whom mocks. P. + 200  Point moved north  J.   A2 | et microsite a patch of                        | with<br>mostly     | concave         | local relief               | Small and moderate  |

|  | Absolute                 | Dominant                      | Indicator  | Dominance Test worksheet:   |
|--|--------------------------|-------------------------------|--|---|
| ree Stratum (Plot sizes: 100 )   | % Cover                  | Species?<br>(Y/N)             | Status   | No. of Dominant Species that are OBL, FACW, or FAC: 3   |
| Picea mariana  | 30                       | 7                             | Far W  | Total Number of Dominant Species Across All Strata:   |
|  |                          |                               | Tacvo  | % Dominant Species that are OBL, FACW, or FAC:  |
|  |                          |                               |  |   |
| 5<br>8   |                          |                               |  | Prevalence Index worksheet:   |
| Total Cov  | er:_30*/                 |                               |  | Total % Cover of: Multiply by:  |
| 50% of total cov   | er:15 20                 | 0% of total cov               | ver:   | OBL species:X 1 =   |
| apling/Shrub Stratum()   | Absolute<br>% Cover      | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  | FACW species: 58 X 2 = 110  FAC species   |
| Picea Mariana  | 25%                      | 7                             | FacW   | FACU species X 4 = 24 UPL species X 5 =   |
| Rhododendran groenlandicum   | 37.                      |                               | Fac  | Column Totals: (A) (B)  |
| Vaccinum uliginosum  | 21.                      |                               | Fac.   | PI = B/A = 2-35   |
| Vaccinium Vitis-idaea  | 37.                      |                               | Fac  |   |
| Spirea Stevensii   | 37.                      |                               | Fac y:   |   |
| Alnus virdis   | 1./.                     |                               | Fac.   |   |
| Rhododendran tomentosum  | 17.                      |                               | Fach   | ,   |
|  |                          |                               |  |   |
|  |                          |                               |  |   |
|  |                          |                               |  |   |
| Total Cove   |                          |                               |  |   |
| Total Cove   |                          | % of total cov                | er:_7.4  |   |
| 50% of total cove  | er: <u>[8-5</u> 20       | % of total cov                | er: 7.4  |   |
| 50% of total cove  | er: <u>[8-5</u> 20       | % of total cov                | er: 7.4  | Hydrophytic Vegetation Indicators:  |
| 50% of total cove  | er: <u>/8-</u> <u>20</u> | Dominant<br>Species?          |  | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%   |
| 50% of total covered to the second se | er: 8-5 20 ats) Absolute | Dominant                      | Indicator<br>Status  |   |
| GETATION (use scientific names of plan orb Stratum ()  Calamagastas lapponica  | er: 8-5 20 ats) Absolute | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in  |
| EGETATION (use scientific names of planerb Stratum ()  Calamagrastis lapponica   | Absolute % Cover         | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status<br>Fac                                       | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)   |
| EGETATION (use scientific names of planerb Stratum ()  Calamagrasts lapponica Aconogonan alaskanum Spinulum annotinum  | er: 8-5 20 ats) Absolute | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  For Fore ForeM                              | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  |
| EGETATION (use scientific names of planers Stratum ()  Calamagrastis lapponica Aconogonan alaskanum Spinulum annotinum (ornus canadensis   | Absolute % Cover         | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  For Fac | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)   |
| EGETATION (use scientific names of planers Stratum ()  Calamagrostis lapponica Aconogonon alaskanum Spinulum annotinum (ornus canadensis Rubus champemorus   | Absolute % Cover         | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  For Fore ForeM                              | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless  |
| EGETATION (use scientific names of planers Stratum ()  Calamagrostis lapponica Aconogonon alaskanum Spinulum annotinum (ornus canadensis Rubus champemorus Cescaulum Invidicum   | Absolute % Cover         | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  For Fac | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless  |
| EGETATION (use scientific names of planes Stratum ()  Calamagrostis lapponica Aconogonon alaskanum Spinulum annotinum (ornus canadensis Rubus champemorus Geocaulum Inizicum   | Absolute % Cover         | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  For Fac | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.   |
| EGETATION (use scientific names of planers Stratum ()  Calamagrosts lapponica Aconogonon alaskanom Spinulum annotinum (ornus canadensis Rubus champemorus Geocaulum   wir 2 icum   | Absolute % Cover         | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  For Fac | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.  ———————————————————————————————————  |
| EGETATION (use scientific names of planes by Stratum ( )  Calamagrasts lapponica Aconogonan alaskanum Spinulum annotinum (ornus canadensis Rubus chamaemorus Geocaulum Inindicum   | Absolute % Cover         | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  For Fac | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.  ———————————————————————————————————   |
| EGETATION (use scientific names of planers Stratum ()  Calamagrostis lapponica Aconogonen alaskanum Spinulum annotinum (ornus canadensis Rubus champemorus Geocaulum Inidicum  | Absolute % Cover         | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  For Fac | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.   Bare Ground  Cover of Wetland Bryophytes  Total Cover of Bryophytes  Cover of Water  Hydrophytic Vegetation Present (Y/N): |
| EGETATION (use scientific names of planes of stratum ( )  Calamagrasts lapponica Aconogonan alaskanum Spinulum annotinum (ornus canadensis Rubus champemorus Geocaulum   1, 1, 2, cum  | Absolute % Cover 7/ 1/   | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  For Fae | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.  ———————————————————————————————————   |
| EGETATION (use scientific names of planerb Stratum ()  · Calamagrastis lapponica · Aconogonan alaskanum · Spinulum annotinum · Cornus canadensis · Rubus chamaemonus · Cescaulon Invidicum ·   | Absolute % Cover 7/ 1/   | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  For Fae | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unles disturbed or problematic.  Bare Ground  Cover of Wetland Bryophytes  Total Cover of Bryophytes  Cover of Water  Hydrophytic Vegetation Present (Y/N):  |

Page 2 of 4

| SOIL                         |                                     |              | Date F             | eature I    | D                 |                  |                        | Soil Pit Required (Y/N)                   |  |  |
|------------------------------|-------------------------------------|--------------|--------------------|-------------|-------------------|------------------|------------------------|---|--|--|
| SOIL PROF                    | LE DESCRIPTION:                     | (Describe    | to the depth neede | d to doc    | ument the         | indicator or     | confirm the absence    | e of indicators.)                         |  |  |
| Depth                        | Matrix                              |              | Redox Features     | M Sm H      |                   |                  |                        |   |  |  |
| (inches)                     | Color (moist)                       | %            | Color (moist)      | %           | Type <sup>1</sup> | Loc <sup>2</sup> | Texture                | Notes                                     |  |  |
| 0-5                          |                                     |              |                    |             |                   |                  |                        |   |  |  |
| 5-7.5                        | 2.5-13/1                            | 100          |                    |             |                   |                  | SIL                    |   |  |  |
| 75-14                        | 10 tr 5/4                           | 58           |                    |             |                   |                  | Loan                   | moist near saturation                     |  |  |
|                              | 2.5+4/1                             | 15           |                    |             |                   | i i i - Halli    | - Telefall             |   |  |  |
| 14-20                        | 2.546/2                             | 100          | 4-710              |             |                   | ( Pade           | VGRLOUM                | saturated with small                      |  |  |
|                              |                                     |              |                    |             |                   |                  |                        | amount of free water                      |  |  |
|                              |                                     |              |                    |             |                   |                  |                        | at 17 inches - residuum.                  |  |  |
| <sup>1</sup> Type: C=C       | oncentration, D=Dep                 | letion, RN   | M=Reduced Matrix,  | CS=Cov      | rered or Co       | ated Sand (      |                        | PL=Pore Lining, M=Matrix. Planster, Ma    |  |  |
| HYDRIC SC                    | IL INDICATORS                       |              |                    |             |                   |                  |                        | FOR PROBLEMATIC HYDRIC SOILS <sup>3</sup> |  |  |
| Histosol or H                | Histel (A1) N                       | _            | Alaska Gleye       | d (A13)     | N                 | -                | Alaska Color C         | Change (TA4) <sup>4</sup>                 |  |  |
| Histic Epipe                 | don (A2) N                          | 11.          | Alaska Redox       | (A14)       | N                 | 4                | Alaska Alpine          | Swales (TA5) N                            |  |  |
| Black Histic                 | (A3) N                              | 0000         | Alaska Gleye       | d Pores     | (A15) N           | Elise            |                        | with 2.5Y Hue                             |  |  |
| Hydrogen S                   | ulfide (A4)                         | 1            |                    | T visus     | nolle hi          | 1                | Alaska Gleyed<br>Layer | without 5Y Hue or Redder Underlying       |  |  |
|                              | Surface (A12)                       |              |                    |             |                   |                  |                        | Other (Explain in Notes)                  |  |  |
| disturbed or<br>Give details | problematic. s of color change in N | Notes.       |                    |             |                   |                  | appropriate landsca    | ape position must be present unless       |  |  |
| Restrictive I                | ayer (if present): Ty               | pe: NA       |                    | Depth (     | inches):          | NA               |                        |   |  |  |
|                              | Present (V/N):                      | N            |                    |             |                   |                  |                        |   |  |  |
| Hydric Soil                  | Present (1/N).                      |              |                    |             |                   |                  |                        |   |  |  |
|                              |                                     | pravel at of | tree water         | asti<br>rat | c. She            | htte :           | sticker wit            | h Saturation at 115 tion to alpha alpha.  |  |  |

| HYDROLOGY PRIMARY INDICAT                             | ORS (any one indicator is sufficient)  | SECONDARY INDICATORS (2 or more required)     |                                    |  |  |
|---|--|---|------------------------------------|--|--|
| Surface Water (A1)/                                   | Surface Soil Cracks (B6)   | Water-stained<br>Leaves (B9)                  | Stunted or Stressed<br>Plants (D1) |  |  |
| High Water Table (A2)                                 | Inundation Visible on Aerial Imagery (B7)  | Drainage Patterns (B10) Geomorphic Position   |                                    |  |  |
| Saturation (A3)                                       | Sparsely Vegetated<br>Concave Surface (B8)   | Oxidized Rhizospheres along Living Roots (C3) | Shallow Aquitard (D3) _ N          |  |  |
| Water Marks (B1)                                      | Marl Deposits (B15)  | Presence of Reduced<br>Iron (C4)              | Microtopographic<br>Relief (D4)    |  |  |
| Sediment Deposits (B2)                                | Hydrogen Sulfide Odor (C1)   | Salt Deposits (C5)                            | FAC-Neutral Test (D5)              |  |  |
| Drift Deposits (B3)                                   | Dry-Season<br>Water Table (C2)   | Notes: Some free water at 17.                 |                                    |  |  |
| Algal Mat or Crust (B4)                               | Other (Explain in Notes):  | Business and area (Business                   |                                    |  |  |
| Iron Deposits (B5)                                    | The second secon | n i de la compania ma                         | Action in all converses at         |  |  |
| Surface Water Present (Y/N): 人                        | Depth (in): NA   |   |                                    |  |  |
| Water Table Present (Y/N): 7 Depth (in): 17 free      |  | Wetland Hydrology Present (Y/N):              |                                    |  |  |
|   | - Account -  | EC: NK  |                                    |  |  |
| Saturation Present (Y/N): (includes capillary fringe) | Depth (in): \  | EC: An  |                                    |  |  |

### AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed  |
| Percent Cover (P):         Tree (>5 dbh, >6m tall)         Sapling (<5 dbh, <6m tall)  |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even   |
| Vegetation Density/Dominance (P):         Sparse (0-20%)         Low Density (20-40%)         Medium Density (40-60%)         High Density (60-           80%)         Very High Density (80-100%)         High Density (80-100   |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="255">25% Scattered/Peripheral Cover"&gt;25% Scattered/Peripheral Cover</a> 26-75% Scattered or Peripheral Cover   |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover  |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)   |
| Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
| SOIL VARIABLES   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Histosol: Sa |
| Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey  |
| HYDROLOGIC VARIABLES   |
| Inlet/Outlet Class (P): No Inlet/Outlet  |
| Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Pere  |
| Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded  |
| Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)  |
| Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 y |
| Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow   |
| Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading  |
| Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable  |
| Basin Topographic Gradient (M):       Low Gradient (<2%)   |
|  |
| LANDSCAPE VARIABLES (M)  |
| Wetland Juxtaposition:       Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below         Only Connected Above Connected Upstream & Downstream Unknown  |
| Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)   |
| Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized >50% Urbanized  |
|  |

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#### Wetland Determination Data Form QA/QC Checklist

This form to be completed before leaving the field site.

| Featur | e ID: W84 L14030 Field Target: 15202 Date: 7/31/15   |
|--------|--|
|        | items not checked, please provide detailed explanation in the notes section of data form.  |
|        |  |
| 7.25   |  |
| 1.     | Site Description   |
|        | <ul><li>☑ Site description, site parameters and summary of findings are complete?</li><li>☑ A detailed site sketch is included?</li></ul>  |
| 2.     | Vegetation   |
|        | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  |
|        | Vegetation names are entered legibly for all strata present?   |
|        | Cover calculations are complete and correct?   |
|        | All dominant species have been determined and recorded per strata?  Indicator status is correct for each species?  |
|        | Dominance Test and Prevalence Index have been completed?   |
| 3.     | Soil   |
|        | Soil profile is complete?  |
|        | ■ Appropriate hydric soil indicators are marked?   |
| 4.     | Hydrology  |
|        | ☑ Appropriate hydrology indicators are marked?   |
|        | Surface water, water table, and saturation depths are recorded if present?   |
| 5.     | Functions and Values   |
|        | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6.     | Field Logbook  |
|        | Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated? |

#### 7. Maps

| B | Wetland boundaries have been corrected if necessary? |
|---|--|
| V | Maps are initialed and dated?                        |

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

| SITE DESCRIPTION   |                                       |                   |  | awaites              |               | Completion of the Completion o |  |
|--|---------------------------------------|-------------------|--|----------------------|---------------|--|--|
| Survey Type: Centerline k  | Access Road (explain)                 | Other (expla      | in)                                    | Field Targe          | et:15312      | Map #: NA Map Date: 6/18/1   |  |
| Date: 8/1/15   | Project Name & No.:                   | Alaska LNG        |  |                      |               | :M8474031  |  |
| Investigators: Bran S  | Lone                                  |                   | Take Market                            |                      |               | Team No.: W84  |  |
| State: Alaska  | Region: Alaska                        |                   | Milepost: 4                            | 64.6                 |               |  |  |
| Latitude: 64° 40 19.45   |                                       | Longitude         |  |                      |               | Datum: WGS84   |  |
| Logbook No.: 02  | Logbook Page No.:                     |                   | Picture No.: W84LH031_VCG_VCG_PIT_PLUC |                      |               |  |  |
| SITE PARAMETERS  |                                       |                   |  | William Charles      |               |  |  |
| Subregion: Janana - Kus  | column Louisens                       | 2                 | Landform (hi                           | llslope, terrac      | e, hummock    | is, etc.): Terraco   |  |
| Slope (%): )   | E Description of the second           |                   | Local relief (d                        | concave, conv        | ex, none):    | Flat   |  |
| Pre-mapped Alaska LNG/NWI clas   | ssification: PF04/554R                |                   |  | Wildlife Use:        |               |  |  |
| Are climatic/hydrologic conditions Yes No (if no   | on the site typical for this time     | of year?          |  | ormal Circum         | stances" pre  |  |  |
| Are Vegetation, Soil,  | or Hydrology Significant              | tly Disturbed?    | No_X                                   | (If yes, expl        | ain in Notes  | 3)   |  |
| Are Vegetation, Soil,  | or Hydrology Naturally I              | Problematic?      | No_×                                   | (If yes, exp         | lain in Note  | s.)  |  |
| SUMMARY OF FINDINGS  |                                       |                   |  |                      |               |  |  |
| Hydrophytic Vegetation Present?  | Yes No                                | Is                | the Sampled                            | Area within a        | Wetland?      | Yes No   |  |
| Hydric Soil Present?   | Yes NoX_                              | we                | etland Type:                           | U                    |               |  |  |
| Wetland Hydrology Present?   | Yes No                                | — Ala             | aska Vegetatio                         | n Classification     | on (Viereck): | 102  |  |
| Corridor. Gently sloping. White Sprace, Br. PICGLA. Sar POPE Hom is Flet or De  Pense Public Bon | POPTRE<br>PR SENZINGS.<br>EPRESCIONAL | Provide 102, 11B2 | LHO31<br>Jic2                          | North (open) eathers | and e         | ast harge mature<br>scallered Bebb Will<br>with EQUPRA, CONCA  |  |
|  |                                       | PFOL/SS           | )                                      |                      |               | Page 1 o   |  |

|  | Absolute            | Dominant          | Indicator                        | Dominance Test worksheet:  |
|--|---------------------|-------------------|----------------------------------|--|
| 「ree Stratum (Plot sizes: 100 )  | % Cover             | Species?<br>(Y/N) | Status                           | No. of Dominant Species that are OBL, FACW, or FAC: 2  |
| Picea glavea   | 35/                 | Y                 | Fac II                           | Total Number of Dominant Species Across All Strata:  |
| Betula neoglasicana  | 1.0                 |                   | Fac                              | % Dominant Species that are OBL, FACW, or FAC: 58/- (  |
| Populus tremulaidies   | 10%                 |                   | FOR U                            | A SHIP OF STREET   |
|  |                     |                   |                                  | Prevalence Index worksheet:  |
| Total Cover:   | 55/-                |                   |                                  | Total % Cover of: Multiply by:   |
| 50% of total covers  | 27.5 20             | % of total cov    | /er:                             | OBL species:X 1 =  |
| pling/Shrub Stratum ( 26 )   | Absolute            | Dominant          | Indicator                        | FACW species: 40 X 2 = 80  |
|  | % Cover             | Species?<br>(Y/N) | Status                           | FAC species 2.0 X 3 = 78   |
| Picea glavea   | F11.                | Y                 | FOR U                            | FACU species   |
| Populus tremulaidies   | 37                  |                   | Facu                             | Column Totals: 127 (A) 402 (B)   |
| The state of the s |                     |                   | The Co                           | PI = B/A = 3.16  |
| Salix bebbiana   | 1./ -               |                   | Fac                              |  |
| Zhododendron groenlandis   |                     |                   | For                              |  |
| Sherperdia canadensis  | 11.                 |                   | FACU                             |  |
| Linaea borealis  | 17.                 |                   | Facu                             |  |
| Vaccinium vitis-Idaea  | 10                  | Y                 | Fac                              | Street, Science  |
| Rosa acicularis  | 17.                 |                   | Facu                             |  |
| Total Cover:   | 29                  |                   | 1000                             |  |
| 50% of total cover:  | 14.5 20             | % of total cov    | er: 5,8                          |  |
| EGETATION (use scientific names of plants  |                     |                   |                                  |  |
|  | )                   |                   |                                  | Value of the state |
|  | Absolute            | Dominant          | Indicator                        | Hydrophytic Vegetation Indicators:   |
|  |                     | Species?          | Indicator<br>Status              | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  |
| rb Stratum(  | Absolute<br>% Cover |                   | Status                           | De Root de Contraction de la Contraction de Contrac |
| Equisation prateinse   | Absolute<br>% Cover | Species?          | Status<br>Fore M                 | _N Dominance Test is > 50%   |
| Cornus canadensis  | Absolute<br>% Cover | Species?          | Status Fae W Fae W               | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  |
| Equisation pratense<br>Cornus canadensis   | Absolute<br>% Cover | Species?          | Status<br>Fore M                 | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)   |
| Cornus canadensis  | Absolute % Cover    | Species?          | Status Fae W Fae W               | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless   |
| Equisation pratense<br>Cornus canadensis<br>Geocaulon lividicum<br>Perola se<br>Chemerion engustifolism  | Absolute<br>% Cover | Species?          | Status Fae W Fae W               | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)   |
| Equisation praterise Cornus canadensis Geocaulon lividicum Prola se Chemerion angustifolium Mertensia Paniculata   | Absolute % Cover    | Species?          | Fae W<br>Fae W<br>Fae W          | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.   |
| Equisation pratense<br>Cornus canadensis<br>Geocaulon lividicum<br>Perola se<br>Chamarion angustifolism  | Absolute % Cover    | Species?          | Fac W<br>Fac W<br>Fac W          | Dominance Test is > 50% Prevalence Index is ≤ 3.0 Morphological Adaptations¹ (Provide supporting data in Notes) Problematic Hydrophytic Vegetation¹ (Explain) Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  ———— % Bare Ground   |
| Equisation pratense<br>Cornus canadensis<br>Geocaulon lividicum<br>Perola se<br>Chemerion engustifolism  | Absolute % Cover    | Species?          | Fac W<br>Fac W<br>Fac W          | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Cover of Wetland Bryophytes  |
| Equisation (26)  Equisation Praterise Cornus canadensis Geocaulon lividicum Prola se Chamarion angustifolium Mertensia Paniculata  | Absolute % Cover    | Species?          | Fac W<br>Fac W<br>Fac W          | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  ———————————————————————————————————   |
| Equisation (26)  Equisation Praterise Cornus canadensis Geocaulon lividicum Priola se Chemerion angustifolium Mertensia Paniculata   | Absolute % Cover    | Species?          | Fac W<br>Fac W<br>Fac W          | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Represent Unless disturbed or problematic.  |
| Equisation Pratense<br>Cornus canadensis<br>Geocaulon lividicum<br>Prola se<br>Chemerion angustifolism<br>Mertensia Paniculata   | Absolute % Cover    | Species?          | Fac W<br>Fac W<br>Fac W          | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Compared Wetland Bryophytes  Total Cover of Bryophytes  Cover of Water  Hydrophytic Vegetation Present (Y/N):   |
| Equisation (26)  Equisation Praterise Cornus canadensis Geocaulon lividicum Perola se Chamerion angustifolium Mertensia Paniculata   | Absolute % Cover    | Species?<br>(Y/N) | Fac W<br>Fac W<br>Fac W<br>Fac W | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Represent Unless disturbed or problematic.  Cover of Wetland Bryophytes  Total Cover of Bryophytes  Cover of Water  |
| Equisation praterise Cornus canadensis Geocaulon lividicum Prola se Chenerion aggistifolism Mertensia Paniculata  Total Cover:   | Absolute % Cover    | Species?<br>(Y/N) | Fac W<br>Fac W<br>Fac W<br>Fac W | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Compared Wetland Bryophytes  Total Cover of Bryophytes  Cover of Water  Hydrophytic Vegetation Present (Y/N):   |

| SOIL   |  |                                      | Date For   | eature ID_                           |  |  |  | Soil Pit Required (Y/N)  |
|--|--|--------------------------------------|--|--------------------------------------|--|--|--|--|
| SOIL PROFI   | LE DESCRIPTION:  | Describe                             | to the depth neede   | d to docum                           | ent the i  | ndicator or c  | onfirm the absen   | ce of indicators.)   |
|  | Matrix   |                                      | Redox Features   | -11                                  |  |  |  |  |
| Depth<br>(inches)  | Color (moist)  | %                                    | Color (moist)  | % T                                  | ype <sup>1</sup>   | Loc <sup>2</sup>   | Texture  | Notes  |
| 0.3.5  | Color (moist)  | 70                                   | Color (moist)  | 70 1                                 | ypo  | 200  | TOXIGIO  | 110.00   |
| -  | 2.5-14/2   | 90                                   |  |                                      | _  |  | SIL  | 7.5-14/4 2 matrix co   |
| 3.5-5  |  | 60                                   | 1- //  |                                      | C  | M  |  | frost nothles Low ch   |
| 5-11   | 2.575/1  |                                      | 10-125/6   | 10                                   |  | 10(  | VESAL  |  |
| 1 00   | 2.5-15/2   | 30                                   |  |                                      |  |  | +  | parent material  |
| 1-22   | 2.5-15/2+  | 98                                   | 10-12 5/6  | 2                                    | _  | M  |  | Fine Blater, Some frost  |
| ¹Type: C=Co  | oncentration, D=Dep  | letion, RN                           | /=Reduced Matrix, (  | CS=Covere                            | d or Coa   | ated Sand G  | rains. <sup>2</sup> Locatio  | n: PL=Pore Lining, M=Matrix.   |
| HYDRIC SOI   | IL INDICATORS  |                                      |  |                                      | MAN A  |  | The state of the s | FOR PROBLEMATIC HYDRIC SOILS   |
| Histosol or H  | listel (A1)N   | -                                    | Alaska Gleye   | d (A13)                              | 7  |  | Alaska Color   | Change (TA4) <sup>4</sup>  |
| Histic Epiped  | don (A2)   |                                      | Alaska Redox   | (A14)^                               | 1  |  |  | Swales (TA5)   |
| Black Histic (   |  | 100                                  | Alaska Gleye   |                                      |  | J  |  | x with 2.5Y Hue  |
|  | ulfide (A4) N  | -                                    |  | 7,200,71                             | 16   |  | The second second second second second   | d without 5Y Hue or Redder Underlying  |
| Thick Dark S   | Surface (A12) N  |                                      |  |                                      |  |  | Other (Explai  | n in Notes)  |
| Restrictive La   | of color change in Nayer (if present): Typ   | pe: NA                               |  | Depth (inch                          | nes):  | N  |  | The state of the s |
| Restrictive La   |  | N N                                  |  |                                      | nes):  | N  | Age of the Age   | The second secon |
| Hydric Soil  Notes: Lac  | ayer (if present): Type Present (Y/N):   | pe: N                                | Parent May   | teral.                               |  |  | Y INDICATORS   | (2 or more required)   |
| Hydric Soil  Notes: Lace   | Present (Y/N):   | N  ATORS (a                          | Parent May   | teral.                               | E  |  | d "  | (2 or more required)  Stunted or Stressed Plants (D1)  |
| Hydric Soil  Notes: Lace  HYDROLOG  Surface Wate   | Present (Y/N):   | ATORS (a                             | any one indicator is a reface Soil Cracks (Bundation Visible on A  | sufficient)                          | Service Control of the Control of th | SECONDAR'<br>Vater-stained<br>Leaves (B9)  | terns (B10) N  | Stunted or Stressed<br>Plants (D1)   |
| Hydric Soil  Notes: Lace  HYDROLOG  Surface Wate   | Present (Y/N):  Symples   Now the series   Now the series | ATORS (a                             | parent may any one indicator is unface Soil Cracks (Bundation Visible on A   | sufficient)  Serial Image            | Service Control of the Control of th | SECONDAR' Water-stained Leaves (B9) Drainage Pat Dxidized Rhiz Living Roots                                  | terns (B10)/<br>zospheres along<br>(C3)/   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)   |
| Hydric Soil  Notes: Lee  HYDROLOG  Surface Water 1   | Present (Y/N):  Present (Y/N):  SY PRIMARY INDICATE  FOR (A1)  Table (A2)  | ATORS (a Su Inu (B) Sp Co            | any one indicator is  undation Visible on A   | sufficient)  Note: Aerial Image      | Service Control of the Control of th | SECONDAR' Water-stained Leaves (B9) Drainage Pat   | terns (B10)/<br>zospheres along<br>(C3)/<br>Reduced  | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)   |
| Hydric Soil  Notes: Lace  HYDROLOG  Surface Wate  High Water T  Saturation (A  Water Marks  Sediment De  | Present (Y/N):  Present (Y/N): | ATORS (a Su Inu (B) Sp Co Ma Hy Oc   | any one indicator is  Inface Soil Cracks (Bundation Visible on A  T)  Parsely Vegetated oncave Surface (B8)  and Deposits (B15)  Idrogen Sulfide dor (C1)  | sufficient)  Note: Aerial Image      | EPTY C   | Water-stained<br>Leaves (B9)   | terns (B10)<br>zospheres along<br>(C3)<br>Reduced  | Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic  |
| Hydric Soil  Notes: Lac  HYDROLOG  Surface Wate  High Water T  Saturation (A  Water Marks  Sediment De  Drift Deposit                                | Present (Y/N):  Present (Y/N):  BY PRIMARY INDICA  Per (A1)  Table (A2)  BY (B1)  Present (B2)  Present (Y/N):  Present (Y/N): | ATORS (a Su Int. (B) Sp Co           | any one indicator is  Inface Soil Cracks (Bundation Visible on Art)  Inarsely Vegetated oncave Surface (B8)  Indrogen Sulfide dor (C1)   | sufficient)  Solution   Narial Image | EPTY C   | Vater-stained<br>Leaves (B9) Drainage Pat<br>Dxidized Rhiz<br>Living Roots<br>Presence of Fron (C4)          | terns (B10)<br>zospheres along<br>(C3)<br>Reduced  | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)   |
| Hydric Soil  Notes: Lace  HYDROLOG  Surface Wate  High Water T  Saturation (A  Water Marks  Sediment De  Drift Deposit  Algal Mat or                 | Present (Y/N):  Present (Y/N): | ATORS (a Su Int. (B) Sp Co           | any one indicator is  Iface Soil Cracks (Bundation Visible on Ary)  Inarsely Vegetated Incave Surface (B8)  Inarl Deposits (B15)  Indrogen Sulfide Incorrection (C1)  Indrogen | sufficient)  Solution   Narial Image | EPTY C   | Water-stained<br>Leaves (B9)   | terns (B10)/<br>zospheres along<br>(C3)/<br>Reduced  | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)   |
| Hydric Soil  Notes: Lace  HYDROLOG  Surface Wate  High Water T  Saturation (A  Water Marks  Sediment De  Drift Deposit  Algal Mat or                 | Present (Y/N):  Present (Y/N):  BY PRIMARY INDICA  Per (A1)  Table (A2)  BY (B1)  Present (B2)  Present (Y/N):  Present (Y/N): | ATORS (a Su Int. (B) Sp Co           | any one indicator is  Inface Soil Cracks (Bundation Visible on Art)  Inarsely Vegetated oncave Surface (B8)  Indrogen Sulfide dor (C1)   | sufficient)  Solution   Narial Image | EPTY C   | Water-stained<br>Leaves (B9)   | terns (B10)/<br>zospheres along<br>(C3)/<br>Reduced  | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)   |
| Hydric Soil  Notes: Lace  HYDROLOG  Surface Wate  High Water To  Saturation (A  Water Marks  Sediment De  Drift Deposit  Algal Mat or  Iron Deposits | Present (Y/N):  Present (Y/N): | ATORS (a Su Inc. (B) Coo Ma Hy Oc Ot | any one indicator is  Inface Soil Cracks (Bundation Visible on Art)  Inarsely Vegetated oncave Surface (B8)  Indrogen Sulfide dor (C1)   | sufficient)  Solution   Narial Image | S S V L L L L L L L L L L L L L L L L L  | Vater-stained Leaves (B9) Drainage Pat Dxidized Rhiz Living Roots Presence of Fron (C4) Salt Deposits Notes: | terns (B10)  | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)  |
| Hydric Soil  Notes: Lace  HYDROLOG  Surface Wate  High Water To  Saturation (A  Water Marks  Sediment De  Drift Deposit  Algal Mat or  Iron Deposits | Present (Y/N):  Present (Y/N): | ATORS (a Su Inc. (B) Coo Ma Hy Oc Ot | any one indicator is a rface Soil Cracks (Bundation Visible on Art) and a result of the control  | sufficient)  Solution   Narial Image | S S V L L L L L L L L L L L L L L L L L  | Vater-stained Leaves (B9) Drainage Pat Dxidized Rhiz Living Roots Presence of Fron (C4) Salt Deposits Notes: | terns (B10)/<br>zospheres along<br>(C3)/<br>Reduced  | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5)  |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M  | = Matrix  |
|--|---|
| Forested-Evergreen-Needle-leaved   | Cking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-   |
| Percent Cover (P): Tree (>5 dbh, >6m tall)_<br>Dwarf shrub (<0.5m) Tall herb (≥1n  | Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short herb (<1m) Moss-Lichen Floating Submerged   |
|  | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
|  | 0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60  |
| Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered   | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or lor Peripheral Cover N/A   |
| Plant Species Diversity (P): Low (< 5 plant s  | pecies) Medium (5-25 species) High (>25)  |
|  | One or Few Several to Many N/A  |
|  | No Veg. Solitary, Scattered Stems 1 or More Large Patches: Parts of Site  |
| Dead Woody Material (P): Low Abundance (CAbundant (>50% of surface)  | 25% of surface) Moderately Abundant (25-50% of surface)   |
| <b>Vegetative Interspersion (P)</b> : Low (large pringly (small groupings, diverse and intersperse   | patches, concentric rings) Moderate (broken irregular rings)  |
| HGM Class (P): Slope Flat  | Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
|  |   |
| SOIL VARIABLES   |   |
| Soil Factors (P): Soil Lacking Mineral: Gravelly Mineral: Sandy  | Histosol: Fibric Histosol: Hemic Histosol: Sapric  Mineral: Clayey  |
| HVDDOLOGIO VADIADI FO  |   |
| HYDROLOGIC VARIABLES   | AND THE RESERVE AND ADDRESS OF THE PARTY OF |
| Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Interm | No Inlet/Intermittent OutletNo Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Outlet  |
| Wetland Water Regime (P): Drier: Seaso<br>Wet: Perm. Flooded, Intermittently Exposed, Se   | nally Flooded, Temporarily Flooded, Saturated   |
|  | Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment   |
| Microrelief of Wetland Surface (P): Absent_  | Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)  |
| Frequency of Overbank Flooding (P): No Overb | erbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs   |
| Degree of Outlet Restriction (P): No Outflow_  | Restricted Outflow Unrestricted Outflow   |
|  | cumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading   |
| Surficial Geologic Deposit Under Wetland (P<br>Glacial Till/Not Permeable  | ): High Permeability Stratified Deposits Low Permeability Stratified Deposits   |
| Basin Topographic Gradient (M): Low G  Evidence of Seeps and Springs (P): No Seep  | radient (<2%) High Gradient (≥2%)<br>s or Springs Seeps Observed Intermittent Spring Perennial Spring   |
| (r ): No coop  | s or Springs Seeps Observed Intermittent Spring Perennial Spring  |
| LANDSCAPE VARIABLES (M)  |   |
| Wetland Juxtaposition: Wetland Isolated  | Wetlands within 400m, Not Connected Only Connected Below Upstream & Downstream Unknown  |
| Wetland Land Use: High Intensity (i.e., ag   | .) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)  |
| Watershed Land Use: 0-5% Rural   | 5-25% Urbanized >50% Urbanized  |
| Size: Small (<10 acres) Mediur   | n (10-100 acres) Large (>100 acres)   |
| Crow Chief ON/OC shooks  |   |

Page 4 of 4

## Wetland Determination Data Form QA/QC Checklist

This form to be completed before leaving the field site.

| -       | -1.81  |
|---------|--|
|         | re ID: W8424031 Field Target: 15312 Date: 8/1/15   |
| For all | items not checked, please provide detailed explanation in the notes section of data form.  |
|         |  |
|         |  |
| 1.      | Site Description   |
|         | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included?   |
| 2.      | Vegetation   |
|         | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  |
|         | ∠ Vegetation names are entered legibly for all strata present?   |
|         | Cover calculations are complete and correct?   |
|         | <ul> <li>☑ All dominant species have been determined and recorded per strata?</li> <li>☑ Indicator status is correct for each species?</li> </ul>                                    |
|         | ☑ Dominance Test and Prevalence Index have been completed?   |
| •       |  |
| 3.      | Soil   |
|         | Soil profile is complete?  |
|         | ☑ Appropriate hydric soil indicators are marked?   |
| 4.      | Hydrology  |
|         | Appropriate hydrology indicators are marked?   |
|         | Surface water, water table, and saturation depths are recorded if present?   |
| 5.      | Functions and Values   |
|         | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6.      | Field Logbook  |
|         | Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated? |

### 7. Maps

| ☑ Wetland boundaries have been corrected if necessary | ary? |
|---|------|
|---|------|

☑ Maps are initialed and dated?

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X Jennifer Anderson Jente M 8/11/5
Wetland Scientist (print)

| SITE DESCRIPTION  |  | 17.6   |                 |                |                            |   |
|---|--|--|-----------------|----------------|----------------------------|---|
| Survey Type: Centerline 🔀 Acce  | ess Road (explain)                     | Other (expla   | ain)            | Field Targ     | et: <u>15299</u>           | Map #: <u> ル                                 </u> |
| Date: 8/1/15  | Project Name & No.:                    | Alaska LNG   | 60418403        |                | Feature Id:                | W84CH-032   |
| Investigators: BS, JA   |  |  |                 |                |                            | Team No.: いるし                                     |
| State: Alaska   | Region: Alaska                         | W  | Milepost: 니     | 165.5          | 8                          |   |
| Latitude: 64°40' 15.11  |  | Longitude  | 14901           | 52 21          |                            | Datum: WGS84                                      |
| Logbook No.: 02   | Logbook Page No.:                      | 12   | Picture No.:    | W84 6H         | 032 1                      | EG. VEG. PIT. PLUG                                |
| CITE DADAMETERS   | to a know a desired                    |  |                 |                | THE WAY                    | STANSON AND A STANSON                             |
| SITE PARAMETERS   | 1 1 1 ~                                | THE STATE OF THE S | Landform (hil   | Islope, terrac | e. hummocks                | s, etc.): Terrace                                 |
| Subregion: Tanana - Lus (co   | kwim Lowanz                            | 2-7  | Local relief (c | concave, con   | vex. none): <              | Slightly concercy,                                |
| Pre-mapped Alaska LNG/NWI classific   | eation:                                |  | Evidence of V   | Wildlife Use:  | Masser                     | Hommocky-Moder                                    |
| Are climatic/hydrologic conditions on the site typical for this time of year? |  |  |                 |                | nstances" pre              | ~   |
| Yes No (if no ex  | plain in Notes)                        |  |                 | <u>`</u>       |                            | olain in Notes.)                                  |
| Are Vegetation, Soil, or H  | 3 07 0                                 | tly Disturbed?   |                 |                | lain in Notes              |   |
| Are Vegetation, Soil, or H  | ydrology Naturally F                   | Problematic?   | No_X            | _ (It yes, exp | olain in Notes             |   |
| SUMMARY OF FINDINGS   |  |  |                 | THE THE        |                            | No. 2   |
| Hydrophytic Vegetation Present? Yes   | No                                     | Is   | the Sampled A   | Area within a  | a Wetland?                 | YesX No   |
| Hydric Soil Present? Yes  | × No                                   | w  | etland Type: "  | PSS1/F         | olC.                       | h -   |
| Wetland Hydrology Present? Yes  | ≻ No_                                  | — Ala  | aska Vegetatio  | n Classificati | on (Viereck):              | 11B2,1B3,111A2                                    |
|   | EMIE PEMIE POSH PSSI/FOIC              | ben<br>beric   | ;1CZ            | LI             | 1032<br>551/F016<br>BZ,1B3 | MP 465  |
| PUBU  | } \\ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ |  | T               | D-1            | 1                          | Page 1  |

| VEGETATION (use scientific names of plants | 3)                  |                               |                     |  | re de      |            |  |
|--|---------------------|-------------------------------|---------------------|--|------------|------------|--|
| Tree Stratum (Plot sizes: (00)             | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test workshee  No. of Dominant Species tha | at are OBI |            |  |
| T. Betula neoalaskana                      | 12                  | 1                             | Fac                 | Total Number of Dominant S                           |            |            | ,  |
| 2. Picca glavea                            | 57                  | -1                            | Fac.U               | % Dominant Species that are                          | e OBL, FA  | ACW, or FA | O: <u>_ ∂''</u> _ (A/B)  |
| 3.   | /                   |                               | T CLE ST            |  |            |            |  |
| 4.   |                     |                               |                     | Prevalence Index workshe                             | et:        |            | THE RESIDENCE AND ADDRESS OF THE PARTY OF TH |
| Total Cover:                               | 17                  |                               |                     | Total % Cover of:                                    |            | Multiply b | Dy:  |
| 50% of total cover:                        | · 8.5 20            | % of total cov                | er: <u>٦،५</u>      | OBL species:   | _X 1 = _   | 1          | -  |
| Sapling/Shrub Stratum ( 2.5 )              | Absolute            | Dominant                      | Indicator           | FACW species:  | _X 2 = _   | 2          |  |
|  | % Cover             | Species?<br>(Y/N)             | Status              | FAC species 149                                      |            |            |  |
| Detola moalaskana                          | 25%                 | 4                             | For                 | UPL species  |            |            | -  |
| 2. Picea glavea                            | 22                  |                               | Facil               | Column Totals: 158                                   |            |            | _ (B)  |
| 3. Alnus incana                            | 50                  | 7                             | FOR                 | PI = B/A = 3.02                                      | =8°14 ==   |            | _ (-/  |
| 4. Salix bebbinna                          | 21                  |                               | Fac                 |  |            |            |  |
| 5. Salve Pulchra                           | T                   |                               | Fac-Wi              |  |            |            |  |
| 6. Chame Japhne caltolata                  | 1.                  |                               | Fac W               |  |            |            |  |
| 7.   |                     |                               |                     |  |            |            |  |
| 8.   |                     |                               |                     |  |            |            |  |
| 9.   |                     |                               |                     |  |            |            |  |
| Total Cover:                               | 50                  |                               |                     |  |            |            |  |
| 50% of total cover:                        | 25 20               | % of total cov                | er:( <u></u> 0      |  |            |            |  |

| VEGETATION (use scientific names of plants   | )                   |                               |                                |  |
|--|---------------------|-------------------------------|--------------------------------|--|
| Herb Stratum ( 2 6 )   | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status            | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  |
| 1. Calamagnostis canadensis 2. Rubus areticus 3. Commarum palustre 4. Errophorum vaginatum 5. Trientalis éulopea | 907 -<br>T<br>17-   |                               | Fac.<br>For<br>Obl<br>For W    | Prevalence Index is ≤ 3.0  Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. |
| 6. Gallion trilidon  |                     |                               | Facyl                          |  |
| 7. Carroph<br>8.<br>9.   |                     |                               |                                | % Bare Ground% Cover of Wetland Bryophytes   |
| Total Cover: 50% of total cover:   | 92<br>46 20         | % of total cov                | er: <u>(</u> P <sub>c</sub> c( | Hydrophytic Vegetation Present (Y/N):  Notes: (If observed, list morphological adaptations below):   |

| SOIL   |                                 | A. Carrie  | Date Feature II                              |                   |  |                           | Soil Pit Required (Y/N)                           |
|--|---------------------------------|------------|--|-------------------|--|---------------------------|---|
| SOIL PROF  | ILE DESCRIPTION: (              | Describe   | to the depth needed to docu                  | ıment the         | indicator or   | confirm the abser         | nce of indicators.)                               |
| Depth  | Matrix                          |            | Redox Features                               |                   |  |                           |   |
| (inches)   | Color (moist)                   | %          | Color (moist) %                              | Type <sup>1</sup> | Loc <sup>2</sup>   | Texture                   | Notes   |
| 7-7  |                                 |            |  |                   |  |                           |   |
| 3-6  | 10-12 2/2                       | (00        |  |                   |  | MICSIL                    |   |
| <u> </u>   | 101-16                          | 10.0       |  |                   |  | 14/16 7/1 /2001           |   |
| 8-8  | 10 nol 16                       | 70         | f  |                   |  | SIL                       | basically a 2 inch bo                             |
| , ,  | N570                            | 30         |  |                   |  |                           | of iron concentration                             |
| -16  | NS/6                            | (00)       |  |                   |  | SiL                       | SIL/VfSal Thixotrop                               |
| 6+   | N3/0                            | 100        |  |                   |  | SiL                       | Sulvisac  |
|  |                                 |            | 1=Reduced Matrix, CS=Cove                    | red or Co         | ated Sand (  |                           | on: PL=Pore Lining, M=Matrix.                     |
|  | OIL INDICATORS                  | N. S. P.   | PARTY IS WELL TO BE                          | - 17 - 22         | 10-7   |                           | S FOR PROBLEMATIC HYDRIC SOILS                    |
| STATE STATE OF THE | -listel (A1)N                   |            | Alaska Gleyed (A13) _                        | 7                 |  |                           | Change (TA4) <sup>4</sup>                         |
|  | don (A2)                        | -          | Alaska Redox (A14)                           |                   | _  |                           | e Swales (TA5)/\                                  |
|  |                                 |            | Alaska Gleyed Pores                          |                   | ) and the second |                           | x with 2.5Y Hue                                   |
| Black Histic   | -                               |            | Alaska Gleyed Pores                          | A15)              |  |                           | ed without 5Y Hue or Redder Underlying            |
| lydrogen S   | ulfide (A4)                     |            |  |                   |  | Layer                     |   |
| hick Dark  | Surface (A12) N                 |            |  |                   |  | Other (Explai             | in in Notes) Reduced Matrix                       |
| lotes: 7 h   | Present (Y/N):                  | , 1 A      |  | Aprile,           | we k   | Has odor                  | . High a-value so                                 |
| IYDROLOG   | GY PRIMARY INDICA               | TORS (a    | nny one indicator is sufficient              | )                 | SECONDAR   | RY INDICATORS             | (2 or more required)                              |
| Surface Wa   | ter (A1)                        |            | face Soil Cracks (B6)\                       | — l               | Water-staine<br>Leaves (B9)  | ed × 7                    | Stunted or Stressed Plants (D1) _ \( \subseteq \) |
| ligh Water   | Table (A2)                      | lnu<br>(B7 | ndation Visible on Aerial Ima<br>') <u>ト</u> | igery I           | Drainage Pa  | utterns (B10)             | Geomorphic Position (D2)                          |
| Saturation (   | A3)                             | Spa        | arsely Vegetated<br>ncave Surface (B8)       |                   | Oxidized Rhi<br>Living Roots   | izospheres along<br>(C3)\ | Shallow Aquitard (D3)                             |
| Vater Mark   | s (B1) _ N                      | Ма         | rl Deposits (B15)                            |                   | Presence of<br>Iron (C4)   |                           | Microtopographic<br>Relief (D4)                   |
| Sediment D   | eposits (B2)                    |            | drogen Sulfide<br>or (C1)                    | ;                 | Salt Deposit   | s (C5) _ N                | FAC-Neutral Test (D5)                             |
| Drift Deposi   | ts (B3) _/\                     | Dry<br>Wa  | r-Season<br>tter Table (C2)                  |                   | Notes:   |                           |   |
| Algal Mat or   | Crust (B4)                      |            | ner (Explain in Notes): 🔎                    |                   |  |                           |   |
| ron Deposit  | ts (B5) N                       |            |  |                   |  |                           |   |
|  | W = 1 1 1 2 1 2 2               | A MARIE    |  | 1000              | F1176 17   | NAME OF STREET            |   |
| Surface Wa   | ter Present (Y/N): 🖊            |            | Depth (in): , ()人                            |                   |  |                           |   |
|  | Present (Y/N):                  |            | Depth (in):                                  | We                | etland Hydro   | ology Present (Y          | /N):/   |
| Vater Table  |                                 |            |  |                   |  |                           | - A   |
| Saturation F   | Present (Y/N): spillary fringe) |            | Depth (in): 3                                | EC                | :_ NA  |                           |   |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P):       Vegetation Lacking       Forested-Deciduous-Needle-leaved       Forested-Deciduous-Broad-leaved         Forested-Evergreen-Needle-leaved       Scrub Shrub-Deciduous-Needle-leaved       Scrub Shrub-Deciduous-Broad-leaved       X         Scrub Shrub-Evergreen-Broad-leaved       Scrub Shrub-Evergreen-Needle-leaved       Emergent-Non-persistent       Emergent-Non-persistent  |
| Percent Cover (P): Tree (>5 dbh, >6m tall) 17 Sapling (<5 dbh, <6m tall) 27 Tall shrub (2-6m) 22 Short shrub (0.5-2m) 3 Dwarf shrub (<0.5m) ○ Tall herb (≥1m) ○ Short herb (<1m) 2 Moss-Lichen 3 Floating ○ Submerged ○  |
| Number of Wetland Types (M): 2 Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| Vegetation Density/Dominance (P): Sparse (0-20%)Low Density (20-40%)Medium Density (40-60%)High Density (60-80%)80%)Very High Density (80-100%)—   |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="#">— &lt;25% Scattered/Peripheral Cover26-75% Scattered or Peripheral CoverN/A</a>  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover_ 🔀   |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)   |
| Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings)  |
| HGM Class (P): Slope Flat X Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
|  |
| SOIL VARIABLES  Listopoli Sondo  |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey   |
|  |
| HYDROLOGIC VARIABLES   |
| HYDROLOGIC VARIABLES  Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Outlet Perennial Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial  |
| Inlet/Outlet Class (P): No Inlet/Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perenni  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inle   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermitt            |
| Inlet/Outlet Class (P): No Inlet/Outlet  No Inlet/Intermittent Outlet  No Inlet/Perennial Outlet  Intermittent Inlet/Intermittent Outlet  Perennial Inlet/Perennial Outlet  Perennial Inlet/Intermittent Outlet  Perennial Inlet/Perennial Outlet  Perennial Inlet/No Outlet  Perennial Inlet/Intermittent Outlet  Perennial Inlet/Perennial Outlet  Perennial Inlet/Perennial Outlet  Intermittent Inlet/No Outlet  Perennial Inlet/Intermittent Inlet/No Outlet  Perennial Inlet/Perennial Outlet  Perennial Inlet/Perennial Outlet  Perennial Inlet/No Outlet  Perennial Inlet/No Outlet  Intermittent Inlet/No Outlet  Perennial Inlet/Perennial Outlet  Perennial Inlet/No Outlet  Perennial Inlet/Perennial Outlet  Perennial Inlet/Perennial Outlet  Perennial Inlet/No Outlet  Perennial Inlet/No Outlet  Perennial Inlet/Perennial Outlet  Inlet/Inlet/Inlet/Inlet/Inlet/Inlet/Inlet/Inlet/Inlet/Inlet/Inlet/Inlet/Inlet/Inlet/Inl |
| Inlet/Outlet Class (P): No Inlet/Outlet  |

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#### Wetland Determination Data Form QA/QC Checklist

This form to be completed before leaving the field site.

|                        | いうういつ               | _ /          |
|------------------------|---------------------|--------------|
| Feature ID: W84 (14032 | Field Target: 15299 | Date: 8/1/15 |

For all items not checked, please provide detailed explanation in the notes section of data form.

#### 1. Site Description

- Site description, site parameters and summary of findings are complete?
- ☑ A detailed site sketch is included?

### 2. Vegetation

- At least 80% of onsite vegetation has been keyed to species, or collected for later identification?
- ☑ Vegetation names are entered legibly for all strata present?
- Q Cover calculations are complete and correct?
- All dominant species have been determined and recorded per strata?
- ☑ Indicator status is correct for each species?
- □ Dominance Test and Prevalence Index have been completed?

#### 3. Soil

- Soil profile is complete?
- Appropriate hydric soil indicators are marked?

#### 4. Hydrology

- Appropriate hydrology indicators are marked?
- Surface water, water table, and saturation depths are recorded if present?

#### 5. Functions and Values

Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?

#### 6. Field Logbook

- Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?
- Each logbook page is initialed and dated?

#### 7. Maps

- M Wetland boundaries have been corrected if necessary?
- Maps are initialed and dated?

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

Wetland Scientist (print)

Jule An

8/1/15

Brem Strong &

8/1/15

| SITE DESCRIPTION   |   | 70/7  | 101.0                          |
|--|---|---|--------------------------------|
| Survey Type: Centerline Acce   | ss Road (explain) Other   | (explain) Field Target:) S256 Map #:Map Date:   | (18/1)                         |
| Date: 8/2/18   | Project Name & No.: Alaska  |   |                                |
| Investigators: Brown Stron   | ng Dennifer An  | Zerson Team No.: W84  |                                |
| State: Alaska  | Region: Alaska  | Milepost: 4441  |                                |
| Latitude: 64° 12'52.56   | Long  | gitude: /49°/9′08.09 Datum: WGS84   |                                |
| Logbook No.: 02  | Logbook Page No.: 3   | Picture No.: W84LH03]_VEG_NEG_PIT_PI  | -UG, N                         |
| SITE PARAMETERS  |   |   | *                              |
| Subregion: Tanana - Kusk   | okwin howlands  | Landform (hillslope, terrace, hummocks, etc.): Terrace  |                                |
| Slope (%): 17,   |   | Local relief (concave, convex, none): Frat Humacker   | -smal                          |
| Pre-mapped Alaska LNG/NWI classific  | ation:  | Evidence of Wildlife Use: None observed   |                                |
| Are climatic/hydrologic conditions on the  | e site typical for this time of yea<br>plain in Notes)                  | r? Are "Normal Circumstances" present: Yes No (If no, explain in Notes.)  |                                |
| Are Vegetation, Soil, or Hy  | drology Significantly Distr   | urbed? No(If yes, explain in Notes)   |                                |
| Are Vegetation, Soil, or Hy  | drology Naturally Problem   | natic? No (If yes, explain in Notes.)   |                                |
| SUMMARY OF FINDINGS  |   | 医动物性神经 医多种皮肤 医多种性 医皮肤   |                                |
| Hydrophytic Vegetation Present? Yes  | 7 No  | Is the Sampled Area within a Wetland? Yes No  | _                              |
| Hydric Soil Present? Yes_  | No  | Wetland Type: (   |                                |
| Wetland Hydrology Present? Yes_  | NoX   | Alaska Vegetation Classification (Viereck): [[ A ]  |                                |
| corridor. 012 burn. Que<br>number of downfall-<br>tree-Plot has a sol<br>Very dense even age<br>Anit with POPTRE | te a few old s<br>stems, One small<br>ony of POPTRE-<br>2 stand of PICM | terline, Length of feature, Distances from Centerline, Photo Locations, and S  fanding Lead POPTRE BETNEO, A 50  l opening near the edge of the 50 re  The steep Lectine. Very first very  ARZ-Sap 12-18' fall. Was likely an open.  IARZ. Very space understory and a car  lichen. | od<br>Lions<br>mell d<br>mixes |

Page 2 of 4

| VEGETATION (use scientific names of plant                       | s)                  |                               |                     |   |
|---|---------------------|-------------------------------|---------------------|---|
| Tree Stratum (Plot sizes:)                                      | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: (A)  |
| 1. Picea mariana 20'  | 7                   | -/                            | Fach                | Total Number of Dominant Species Across All Strata: (B)                             |
| 2. Papalus fremutoidies   |                     |                               | Facu                | % Dominant Species that are OBL, FACW, or FAC: (A/B)                                |
| 4.  |                     |                               |                     | Prevalence Index worksheet:   |
| Total Cover   | : 8                 |                               |                     | Total % Cover of: Multiply by:  |
| 50% of total cover  |                     | 0% of total co                | ver: \-lo           | OBL species:X 1 =   |
| Sapling/Shrub Stratum ( 25 )                                    | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator           | FACW species: 77  |
| 1. Pieca mariana 18"  | 70                  | 1                             | FacW                | UPL speciesX 5 =  |
| 2.  |                     | 1                             |                     | Column Totals: 81 (A) LGS (B)   |
| 3. himages boreals  | T                   |                               | Fac U.              | PI = B/A = 2.07   |
| 4. Vaccinium Vitis-12aca  | 2                   |                               | FAC                 |   |
| 5.<br>6.  |                     |                               |                     |   |
| 7.  |                     |                               |                     |   |
| 8.  |                     |                               |                     |   |
| 9.  |                     |                               |                     |   |
| 50% of total cover:  VEGETATION (use scientific names of plants |                     | % of total cov                | rer: 14,6           |   |
| Herb Stratum (26)   | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%                         |
| 1. Geocaulon lividicum  | 1                   |                               | Facul               | Prevalence Index is ≤ 3.0   |
| 2.  |                     |                               |                     | Morphological Adaptations¹ (Provide supporting data in Notes)                       |
| 3.  |                     |                               |                     | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)                           |
| 4.  |                     |                               |                     | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless |
| 5.  |                     |                               |                     | disturbed or problematic.   |
| 6.  |                     |                               |                     |   |
| 7.  |                     |                               |                     | % Bare Ground   |
| 8.  |                     |                               |                     | % Cover of Wetland Bryophytes   |
| 9.  |                     |                               |                     | Total Cover of Bryophytes   |
| 10.   |                     |                               |                     | % Cover of Water  |
| Total Cover:_   |                     |                               |                     | Hydrophytic Vegetation Present (Y/N):   |
| 50% of total cover:   |                     | % of total cove               | er: D.a             | Notes: (If observed, list morphological adaptations below):                         |
|   |                     |                               |                     | Feather Moss 97   |
|   |                     |                               |                     | Nephroma apothisa 3   |

| SOIL                   |  |           | Date         | Feature I                         |             |                  | Name of the last o | Soil Pit Required (Y/N)_              |  |  |
|------------------------|--|-----------|--------------|-----------------------------------|-------------|------------------|--|---------------------------------------|--|--|
| SOIL PROF              | ILE DESCRIPTION: (   | Describe  | to the depth | needed to doc                     | ument the   | indicator or cor | nfirm the absence  | of indicators.)                       |  |  |
| Depth                  | Matrix   |           | Redox Feat   | ures                              | . 24        |                  |  |                                       |  |  |
| (inches)               |  |           | Color (mois  | Color (moist) % Type <sup>1</sup> |             | Loc <sup>2</sup> | Texture  | Notes                                 |  |  |
| 0-6                    |  |           |              |                                   |             |                  |  |                                       |  |  |
| 6-8                    | 10-a 4/1   | 100       |              |                                   |             |                  | 5.1  |                                       |  |  |
| 8-11                   | 5-12 4/6   | 100       | T            |                                   |             |                  | vfsaz  |                                       |  |  |
| 11-17                  | 10 TR 5/4  | 85        |              |                                   |             |                  | NFSEL  |                                       |  |  |
| 7.                     | 2.5 + 6/4  | 15        |              |                                   |             |                  |  |                                       |  |  |
| 17-21                  | 10TR 5/6   | (00)      |              |                                   |             | CR               | Loanyfine  | Sanz Bravels ~ 17%                    |  |  |
|                        |  |           |              |                                   |             |                  |  |                                       |  |  |
| <sup>1</sup> Type: C=C | oncentration, D=Depl   | etion, RN | 1=Reduced N  | Matrix, CS=Cov                    | ered or Co  | ated Sand Gra    |  | PL=Pore Lining, M=Matrix.             |  |  |
| HYDRIC SC              | IL INDICATORS  | Y         |              |                                   |             |                  | AND RESIDENCE OF THE PARTY OF T | FOR PROBLEMATIC HYDRIC SOI            |  |  |
| Histosol or I          | Histel (A1)  |           | Alaska       | Gleyed (A13)                      | N           | -                |  | nange (TA4) <sup>4</sup>              |  |  |
| Histic Epipe           | don (A2)   |           | Alaska       | Redox (A14) _                     | N           |                  |  | Swales (TA5)N                         |  |  |
| Black Histic           | (A3)   |           | Alaska       |                                   |             |                  |  | Alaska Redox with 2.5Y Hue            |  |  |
| Hydrogen S             | ulfide (A4)  |           |              | 1 1                               |             |                  | Alaska Gleyed  | without 5Y Hue or Redder Underlyi<br> |  |  |
| Thick Dark             | Surface (A12)  |           |              |                                   |             |                  | Other (Explain i   |                                       |  |  |
| disturbed or           | tor of hydrophytic veg<br>problematic.<br>s of color change in N<br>ayer (if present): Typ | otes      |              |                                   | and hydrolo |                  | propriate landsca  | pe position must be present unless    |  |  |
| Hydric Soil            | Present (Y/N):   | N         |              |                                   |             |                  | avelly all   | unum Spodic mate                      |  |  |

| ORS (any one indicator is sufficient)   | SECONDARY INDICATORS (2 or more required)  |  |  |  |
|---|--|--|--|--|
| Surface Soil Cracks (B6)  | Water-stained<br>Leaves (B9)   | Stunted or Stressed<br>Plants (D1)   |  |  |
| Inundation Visible on Aerial Imagery (B7)   | Drainage Patterns (B10)N   | Geomorphic Position (D2)   |  |  |
| Sparsely Vegetated Concave Surface (B8)   | Oxidized Rhizospheres along<br>Living Roots (C3)   | Shallow Aquitard (D3)  |  |  |
| Marl Deposits (B15)   | Presence of Reduced<br>Iron (C4)   | Microtopographic<br>Relief (D4)  |  |  |
| Hydrogen Sulfide<br>Odor (C1)   | Salt Deposits (C5)   | FAC-Neutral Test (D5)  |  |  |
| Drift Deposits (B3) Dry-Season Water Table (C2) Algal Mat or Crust (B4) Other (Explain in Notes): |  |  |  |  |
|   |  |  |  |  |
|   |  |  |  |  |
| Depth (in): NA  |  |  |  |  |
| Surface Water Present (Y/N): Depth (in): A  Water Table Present (Y/N): Depth (in):                |  | N  |  |  |
| Saturation Present (Y/N): includes capillary fringe)  Depth (in):                                 |  | EC: NA   |  |  |
|   | Surface Soil Cracks (B6)  Inundation Visible on Aerial Imagery (B7)  Sparsely Vegetated Concave Surface (B8)  Marl Deposits (B15)  Hydrogen Sulfide Odor (C1)  Dry-Season Water Table (C2)  Other (Explain in Notes):  Depth (in): | Surface Soil Cracks (B6) Water-stained Leaves (B9) Drainage Patterns (B10) Sparsely Vegetated Concave Surface (B8) Drainage Patterns (B10) Presence of Reduced Iron (C4) Presence of Reduced Iron (C4) Presence Odor (C1) Salt Deposits (C5) Notes:    Depth (in): Depth (in): Water Table (C2) Wetland Hydrology Present (Y/N): |  |  |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= N  | Natrix Natrix  |
|---|--|
| rorested-Evergreen-Neegle-leaved Sc   | rub Shrub-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved<br>Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved<br>Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-   |
| Dwarr stride (<0.5m) rail field (<1m)_  | Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short herb (<1m) Moss-Lichen Floating Submerged  |
| Number of Wetland Types (M):  | renness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| Vegetation Density/Dominance (P): Sparse (0-280%) Very High Density (80-100%)_                          | 20%)   Low Density (20-40%)   Modium Density (40,60%)   Uist Density (60   |
| Interspersion of Cover & Open Water (P): 10 Peripheral Cover >75% Scattered or                          | 0% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant species   | cies) Medium (5-25 species) High (>25)   |
| Presence of Islands (M): Absent (none)  | One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): No Open Small Scattered Patches                               | Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover  |
| Dead Woody Material (P): Low Abundance (0-29)<br>Abundant (>50% of surface)                             | of surface) Moderately Abundant (25-50% of surface)  |
| <b>Vegetative Interspersion (P)</b> : Low (large pate High (small groupings, diverse and interspersed)_ | ches, concentric rings) Moderate (broken irregular rings)  |
| HGM Class (P): Slope Flat L   | acustrine Fringe Depressional Riverine Estaurine Fringe  |
| SOIL VARIABLES  |  |
|   | losol:Fibric Histosol:Hemic Histosol: Sapric   |
| Mineral: Gravelly Mineral: Sandy Mineral: Sandy   | Mineral: Silty Mineral: Clayey   |
| HYDROLOGIC VARIABLES  |  |
| Inlet/Outlet Class (P): No Inlet/Outlet   | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No et Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet |
| Wetland Water Regime (P): Drier: Seasonal Wet: Perm. Flooded, Intermittently Exposed, Semi              | perm. Flooded  |
| Evidence of Sedimentation (P): No Evidence O Created  | bserved Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment   |
|   | Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)   |
| Frequency of Overbank Flooding (P): No Overbank Return Interval >5 yrs                                  | ank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs   |
| Degree of Outlet Restriction (P): No Outflow  | Restricted Outflow Unrestricted Outflow  |
|   | neutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading   |
| Surficial Geologic Deposit Under Wetland (P): Glacial Till/Not Permeable                                | High Permeability Stratified Deposits Low Permeability Stratified Deposits   |
| Basin Topographic Gradient (M): Low Grad  | ient (<2%) High Gradient (≥2%)   |
| Evidence of Seeps and Springs (P): No Seeps o   | r Springs Seeps Observed Intermittent Spring Perennial Spring  |
| LANDSCAPE VARIABLES (M)   |  |
| Wetland Juxtaposition: Wetland Isolated   | Wetlands within 400m, Not ConnectedOnly Connected Below  |
| Only Connected Above Connected Up:  |  |
|   |  |
| Wetland Land Use: High Intensity (i.e., ag.)_   | Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)  |
| Wetland Land Use: High Intensity (i.e., ag.)_ Watershed Land Use: 0-5% Rural                            |  |

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## Wetland Determination Data Form QA/QC Checklist

This form to be completed before leaving the field site.

| Feature    | ID: <u>W84 LH03 3</u> Field Target: <u>15256</u> Date: 8/2/15  |
|------------|--|
|            | tems not checked, please provide detailed explanation in the notes section of data form.   |
|            |  |
| 1.         | Site Description   |
|            | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included?   |
| 2.         | Vegetation   |
|            | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  |
|            | <ul> <li>○ Vegetation names are entered legibly for all strata present?</li> <li>○ Cover calculations are complete and correct?</li> </ul>   |
| 15         | All dominant species have been determined and recorded per strata?   |
|            | Indicator status is correct for each species?  Dominance Test and Prevalence Index have been completed?  |
|            | Soil   |
|            | Soil profile is complete? Appropriate hydric soil indicators are marked?   |
| 4.         | Hydrology  |
|            | Appropriate hydrology indicators are marked?  Surface water, water table, and saturation depths are recorded if present?   |
| <b>5</b> . | Functions and Values   |
| )          | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6.         | Field Logbook  |
|            | Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated? |

### 7. Maps

|       | ■ Wetland boundaries have been corrected if necessary? ■ Maps are initialed and dated?   |
|-------|--|
| 8.    | Photos   |
|       | <ul> <li>□ Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?</li> <li>□ Two photos were taken for each Observation Point (vegetation/site overview)?</li> </ul> |
| X     | Jennifer Andresson July ph 8/2/45  |
| Wetla | and Scientist (print)  |
| <     | Bran Strong Brown 8/2/15   |

|   |  |   |                                    |   |                       |   | The state of the s |         |
|---|--|---|------------------------------------|---|-----------------------|---|--|---------|
| Survey Type: Centerline   | Access Road (explain)  | Other (expla                                    | ain)                               | Field Target:                                       | 15126                 | Мар #:                                      | Map Date   | :6/18/1 |
| Date: 8/2/15  | Project Name & No.   | : Alaska LNG                                    | 60418403                           | F   | eature Id:            | W84L+                                       | 4034   |         |
| Investigators: Brand  | Hong Dennife   | - Anders  | Son                                |   |                       | Team No.:                                   | 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1  |         |
| State: Alaska   | Region: Alaska   |   | Milepost:                          | 62.2  |                       |   |  |         |
| Latitude: 64° 1012 8.0  | 950  | Longitude                                       | 14901                              | 7/21,50   | 4                     | Datum: W                                    | /GS84  |         |
| Logbook No.: 02   | Logbook Page No.:  |   | According to the second            | W842HO  | ,                     | G_VEC                                       | - PIT-   | PLUG    |
| SITE PARAMETERS   |  | And Street                                      |                                    |   |                       |   |  |         |
| Subregion: anana - K  | uskokum Lowlan   | 25  | Landform (hi                       | Ilslope, terrace,                                   | hummocks              | , etc.): 1 e                                | race   |         |
| / 4   | Aspect: 12   |   | Local relief (d                    | concave, convex                                     | , none): -            | lat to                                      | slightly,  | PARGUE  |
| Pre-mapped Alaska LNG/NWI clas  |  | 2_  | Evidence of \                      | concave, convex                                     | ame -                 | trail                                       | hummac   | ky-mode |
| Are climatic/hydrologic conditions<br>Yes No (if no   | on the site typical for this time  | e of year?                                      | Are "N                             | ormal Circumsta                                     | inces" pres           | sent:                                       |  |         |
| Are Vegetation, Soil,   |  | ntly Disturbed?                                 |                                    | (If yes, explain                                    |                       |   | 5.)  | No.     |
| Are Vegetation, Soil,   |  | Problematic?                                    |                                    | _ (If yes, explain                                  |                       |   |  |         |
| SUMMARY OF FINDINGS   |  |   |                                    | _ (11 )00, 000                                      | 140163.               |   |  |         |
| Hydrophytic Vegetation Present?   | Yes No   | Is t  | he Sampled A                       | Area within a W                                     | etland?               | Yes   | No_  | ×       |
| Hydric Soil Present?  | Yes NoX_   | Wo  |                                    | 1   |                       |   |  | 1000    |
|   |  |   | tland Type:                        | )   |                       |   |  |         |
| Notes and Site Sketch: Please incl  | Yes No   | Ala Ala   | ska Vegetation                     | n Classification (                                  | m Contor              | ina Dhata I                                 | onations one   | Survey  |
| Notes and Site Sketch: Please incloorridor. Dense, even<br>nore of an open<br>rea. Borlarline w | yes No   | Ala  W, Centerline, L  St betwee  A shar  Creek | ength of feature the earth distant | re, Distances from Point as<br>St. BETA<br>nee to t | om Centerly 2 + 120 s | ine, Photo L<br>he his<br>cattera<br>orth o | ocations, and hower led throat 40° de  | er gul  |
|   | yes No  Jude Directional & North Arrow  aged Mixed Fore  Canopy downs!  1,xed forest  and bottomes  that this elev | Ala  W, Centerline, L  St betwee  A shar  Creek | ength of feature the earth distant | re, Distances from Point as<br>St. BETA<br>nee to t | om Centerly 2 + 120 s | ine, Photo L<br>he his<br>cattera<br>orth o | ocations, and hower I  hower I | er gul  |

Page 1 of 4

**VEGETATION** (use scientific names of plants)

| Tree Stratum (Plot sizes:)  | Absolute<br>% Cover                  | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: (A)  |
|---|--------------------------------------|-------------------------------|--|---|
| 1. Picea mariana  | 35                                   | 7                             | Fae W  | Total Number of Dominant Species Across All Strata: (B)   |
| 2. Betila necalaskana   | 20                                   | 7                             | Falu   | % Dominant Species that are OBL, FACW, or FAC: (A/B)  |
| 3.  | 20                                   |                               | FULL   | · · · · · · · · · · · · · · · · · · ·   |
| 4.  |                                      |                               |  | Prevalence Index worksheet:   |
| Total Cover:  | 55                                   |                               | III III  | Total % Cover of: Multiply by:  |
| 50% of total cover:   | 27.5 20                              | % of total cov                | er:l   | OBL species:X 1 =   |
| Sapling/Shrub Stratum ( 26 )  | Absolute<br>% Cover                  | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  | FACW species: 42  |
| 1. Pices Mariana  | 4/.                                  | 7                             | Farw   | UPL speciesX 5 =  |
| 2 Betula nevalaskana  | 3/-                                  | Y                             | Fac  | Column Totals: 96 (A) 248 (B)   |
| 3. Salix bebbiana   | +                                    |                               | Fac  | PI = B/A = 2.58   |
| 4. Salix Pulchra  | T                                    |                               | FACH   |   |
| 5. Rhododendron groenlandicu  | M 21.                                |                               | Fac.   |   |
| 6. Vaccinism vitis-idaea  | 1-21/                                |                               | FOC.   |   |
| 7. Linnaen borealis   |                                      |                               | Facu   |   |
| 8. Rosa acicularis  | T                                    |                               | Fork   |   |
| 9. Total Cover:   | 14                                   |                               |  |   |
|   |                                      |                               |  |   |
|   |                                      | 1% of total cov               | ver: 2.8   |   |
| 50% of total cover:   |                                      | % of total cov                | ver: 2.8   |   |
|   | 7 20                                 | % of total cov                | rer: 2.8   |   |
| 50% of total cover:   | 7 20                                 | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%   |
| 50% of total cover:  VEGETATION (use scientific names of plants   | ) Absolute                           | Dominant<br>Species?          | Indicator  | Dominance Test is > 50% Prevalence Index is ≤ 3.0   |
| VEGETATION (use scientific names of plants  Herb Stratum ( 2 6 )  | Absolute<br>% Cover                  | Dominant<br>Species?          | Indicator<br>Status  |   |
| VEGETATION (use scientific names of plants  Herb Stratum ( 26 )   | Absolute % Cover                     | Dominant<br>Species?          | Indicator<br>Status  | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in  |
| VEGETATION (use scientific names of plants  Herb Stratum ( 26 )  1. Carex by lown  2. Calanagrostes lapponica   | Absolute % Cover                     | Dominant<br>Species?          | Indicator<br>Status<br>Fac<br>Foc                                | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)   |
| 1. Carex by lown 2. Calamagrosts lapponica 3. Calamagrosts canadensis   | Absolute % Cover                     | Dominant<br>Species?          | Indicator<br>Status  Fac Foc Fac                                 | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  |
| 1. Carex big lawin  2. Calamagiostis canadensis  4. Equisation 5-livations  | Absolute % Cover                     | Dominant<br>Species?          | Indicator Status  Fac Foc Fac Fac                                | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless  |
| 1. Carex biglown  2. Calamagiostis lapponica  3. Calamagiostis canadensis  4. Equisation Salvation  | Absolute % Cover                     | Dominant<br>Species?          | Indicator Status  Fac Foc Fac Fac Fac Fac Fac Fac Fac Fac Fac Fa | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless  |
| 1. Carex big lowin  2. Calamagiostis lapponica  3. Calamagiostis canadensis  4. Equisation Salvation  5. Geocaslan Invidicum  6. Carodyera Repens   | Absolute % Cover                     | Dominant<br>Species?          | Indicator Status  Fac Foc Fac Fac Fac Fac Fac Fac Fac Fac Fac Fa | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Bare Ground  Company Service S |
| 1. Carex big lowin  2. Calamagrostis lapponica  3. Calamagrostis canadensis  4. Eguisation Salvation  5. Geocaslan Invidicum  6. Carodyera Repens  7. Pyrola asen folia   | Absolute % Cover                     | Dominant<br>Species?          | Indicator Status  Fac Foc Fac Fac Fac Fac Fac Fac Fac Fac Fac Fa | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  ———————————————————————————————————  |
| 1. Carex big lown  2. Calamagiostis lapponica  3. Calamagiostis canadensis  4. Equisation Salvation  5. Cacadon Invidicum  6. Cacadon Repuis  7. Pyrola asen folial  8.   | Absolute % Cover                     | Dominant<br>Species?          | Indicator Status  Fac Foc Fac Fac Fac Fac Fac Fac Fac Fac Fac Fa | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  Notes)  Notes  Problematic Hydrophytic Vegetation¹ (Explain)  Notes)  Notes  Problematic Hydrophytic Vegetation¹ (Explain)  Notes  Notes  Notes  Problematic Hydrophytic Vegetation¹ (Explain)  Notes  N |
| 1. Carex biglown  2. Calamagiostis lapponica  3. Calamagiostis canadensis  4. Equisation Salvatieum  5. Geocaulan Invidiam  6. Caoodyere Repens  7. Pyrola asen filla  8.  9.  10.  Total Covers  | 7 20 Absolute % Cover 2 / 20 2 / 1 / | Dominant<br>Species?<br>(Y/N) | Indicator Status  Fac Foc Fac Fac Fac Fac Fac Fac Fac Fac Fac Fa | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  ———————————————————————————————————  |
| 1. Carex big lowin  2. Calamagiostis lapponica  3. Calamagiostis canadensis  4. Equisation Silvation  5. Geocaston lividicum  6. Caoodyera Repens  7. Pyrola asen folia  8.  9.   | 7 20 Absolute % Cover 2 / 20 2 / 1 / | Dominant<br>Species?          | Indicator Status  Fac Foc Fac Fac Fac Fac Fac Fac Fac Fac Fac Fa | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Morphological adaptation Bryophytes  Cover of Wetland Bryophytes  Cover of Water  Hydrophytic Vegetation Present (Y/N):  Notes: (If observed, list morphological adaptations below):   |
| 1. Carex biglown  2. Calamagiostis lapponica  3. Calamagiostis canadensis  4. Equisation Salvatieum  5. Geocaulan Invidiam  6. Caoodyere Repens  7. Pyrola asen filla  8.  9.  10.  Total Covers  | 7 20 Absolute % Cover 2 / 20 2 / 1 / | Dominant<br>Species?<br>(Y/N) | Indicator Status  Fac Foc Fac Fac Fac Fac Fac Fac Fac Fac Fac Fa | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Description:  Total Cover of Wetland Bryophytes  Problematic Hydrophytic Vegetation Present (Y/N):   |
| 50% of total covers  VEGETATION (use scientific names of plants  Herb Stratum ( 26 )  1. Carex by lown 2. Calanagiostis lapponica 3. Calanagiostis canadensis 4. Equisation Salvatieum 5. Ceocaulan Invideum 6. Caoodyere Republic 7. Pyrda asen folial 8. 9. 10.  Total Covers | 7 20 Absolute % Cover 2 / 20 2 / 1 / | Dominant<br>Species?<br>(Y/N) | Indicator Status  Fac Foc Fac Fac Fac Fac Fac Fac Fac Fac Fac Fa | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  Bare Ground  Morphological adaptation Bryophytes  Cover of Wetland Bryophytes  Cover of Water  Hydrophytic Vegetation Present (Y/N):  Notes: (If observed, list morphological adaptations below):   |

ecf

| SOIL                                      |   |           | Date F                               | eature ID |                   |   |                            | Soil Pit Required (Y/N)                   |  |  |
|---|---|-----------|--------------------------------------|-----------|-------------------|---|----------------------------|---|--|--|
| SOIL PROFI                                | LE DESCRIPTION:   | Describe  | to the depth neede                   | d to docu | ment the          | indicator or  | confirm the absenc         | e of indicators.)                         |  |  |
| Depth                                     | Matrix  |           | Redox Features                       |           |                   |   |                            | 1000                                      |  |  |
| (inches)                                  | Color (moist)   | %         | Color (moist)                        | %         | Type <sup>1</sup> | Loc <sup>2</sup>  | Texture                    | Notes                                     |  |  |
| 0-6                                       |   |           |                                      |           |                   |   |                            |   |  |  |
| 6-11                                      | 10112/2   | 100       |                                      |           |                   | 1   | SIL                        |   |  |  |
| 11-63                                     | 2.543/1   | 15        | +                                    |           |                   |   | SIL                        | 5-12 4/6 - Spodie materia                 |  |  |
| 10000                                     | 2.574/1   | 78        |                                      |           |                   |   |                            |   |  |  |
| 3-17                                      | 2.574/1   | 78        | - 30                                 |           |                   |   | 5. L                       | 5xx4/6 spodic matria                      |  |  |
|   | 2.573/1   | 15        |                                      |           |                   |   |                            |   |  |  |
| 7-20                                      | 546/1   | 8.2       |                                      |           |                   |   | LFSa                       | 20th 5/6- weatherez san                   |  |  |
|   | oncentration, D=Depl  | etion, RM | =Reduced Matrix,                     | CS=Cove   | red or Co         | ated Sand G   |                            | PL=Pore Lining, M=Matrix.                 |  |  |
| HYDRIC SO                                 | IL INDICATORS   |           |                                      |           |                   |   | INDICATORS                 | FOR PROBLEMATIC HYDRIC SOILS <sup>3</sup> |  |  |
|   | istel (A1) _ N  |           | Alaska Gleye                         | d (A13) _ | N                 |   | Alaska Color C             | hange (TA4) <sup>4</sup>                  |  |  |
| Histic Epiped                             | lon (A2) _ N  |           | Alaska Redox                         | (A14) _   | N                 |   | Alaska Alpine              | Alaska Alpine Swales (TA5)                |  |  |
| Black Histic (                            | (A3) N  |           | Alaska Gleye                         | d Pores ( | A15)              |   | Alaska Redox with 2.5Y Hue |   |  |  |
| Hydrogen Su                               | lydrogen Sulfide (A4)/\)  |           |                                      |           |                   | Alaska Gleyed without 5Y Hue or Redder Underlying Layer \( \sqrt{\chi} \) |                            |   |  |  |
|   | urface (A12)  |           |                                      |           |                   |   | Other (Explain in Notes)   |   |  |  |
| disturbed or  Give details Restrictive La | problematic. of color change in No ayer (if present): Typ  Present (Y/N): | otes.     | 0                                    | Depth (in | ches):            | 13  |                            | pe position must be present unless        |  |  |
|   | Y PRIMARY INDICA  |           |                                      |           |                   |   | Y INDICATORS (2            | or more required)                         |  |  |
| Surface Wate                              | er (A1) N   | Sur       | face Soil Cracks (B                  | 6) 1      |                   | Vater-staine<br>eaves (B9)  |                            | Stunted or Stressed Plants (D1)/\(\)      |  |  |
| High Water T                              | able (A2)   | - (B7     |                                      | erial Ima | gery              | Orainage Pat  | terns (B10)                | Geomorphic Position (D2) \(\int\)         |  |  |
| Saturation (A                             | (3) [   | Spa       | rsely Vegetated<br>cave Surface (B8) | N         | _   (             | Oxidized Rhiz<br>Living Roots   | zospheres along<br>(C3)N   | Shallow Aquitard (D3)                     |  |  |
| Water Marks                               | (B1) N  | Mar       | Deposits (B15) _                     | 1         |                   | Presence of I   | Reduced                    | Microtopographic<br>Relief (D4)           |  |  |
|   |   |           |                                      |           |                   |   |                            |   |  |  |

| HYDROLOGY PRIMARY INDICATO                        | PRS (any one indicator is sufficient)     | SECONDARY INDICATORS (2 o                         | r more required)   |  |
|---|---|---|--|--|
| Surface Water (A1)N                               | Surface Soil Cracks (B6)                  | Water-stained<br>Leaves (B9)                      | Stunted or Stressed Plants (D1)  |  |
| High Water Table (A2)                             | Inundation Visible on Aerial Imagery (B7) | Drainage Patterns (B10)                           | Geomorphic Position (D2) _\times   |  |
| Saturation (A3)                                   | Sparsely Vegetated Concave Surface (B8)   | Oxidized Rhizospheres along Living Roots (C3) _ N | Shallow Aquitard (D3)  |  |
| Water Marks (B1)                                  | Marl Deposits (B15)                       | Presence of Reduced<br>Iron (C4)                  | Microtopographic<br>Relief (D4)  |  |
| Sediment Deposits (B2)                            | Hydrogen Sulfide<br>Odor (C1)             | Salt Deposits (C5)                                | FAC-Neutral Test (D5)  |  |
| rift Deposits (B3) Dry-Season Water Table (C2) N  |   | Notes:  | The State of the House   |  |
| Algal Mat or Crust (B4)                           | Other (Explain in Notes):                 | and approved point of our                         |  |  |
| Iron Deposits (B5)                                |   |   | Land the land to the control of the  |  |
| Surface Water Present (Y/N):                      | Depth (in): №                             |   | . /  |  |
| /ater Table Present (Y/N): Depth (in):            |   | Wetland Hydrology Present (Y/N):                  |  |  |
| Saturation Present (Y/N): Depth (in): Depth (in): |   | EC: NA  |  |  |
| Notes:  |   |   | 1841 475 August 1841 August 18 |  |
|   |   |   |  |  |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, I   | M= Matrix  |
|---|--|
| Forested-Evergreen-Needle-leaved  | acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-   |
| Percent Cover (P): Tree (>5 dbh, >6m tall)_<br>Dwarf shrub (<0.5m) Tall herb (≥1  | Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Moss-Lichen Floating Submerged   |
| Number of Wetland Types (M):  | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even  |
| Vegetation Density/Dominance (P): Sparse<br>80%) Very High Density (80-100%)  | e (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-   |
| Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered  | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant   | species) Medium (5-25 species) High (>25)  |
|   | One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): Open Small Scattered Patches_   | No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover   |
| Dead Woody Material (P): Low Abundance<br>Abundant (>50% of surface)  | (0-25% of surface) Moderately Abundant (25-50% of surface)   |
| Vegetative Interspersion (P): Low (large<br>High (small groupings, diverse and interspers   | e patches, concentric rings) Moderate (broken irregular rings) sed)  |
| HGM Class (P): Slope Flat   | Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
| 100   |  |
| SOIL VARIABLES  | History Files  |
| Soil Factors (P): Soil Lacking<br>Mineral: Gravelly Mineral: Sandy  | Histosol: Fibric Histosol: Hemic Histosol: Sapric  Mineral: Silty Mineral: Clayey  |
|   |  |
|   |  |
| HYDROLOGIC VARIABLES  |  |
| HYDROLOGIC VARIABLES Inlet/Outlet Class (P): No Inlet/Outlet  | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial  |
| HYDROLOGIC VARIABLES  Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I  | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial nlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial |
| HYDROLOGIC VARIABLES  Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed,   | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial nlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created   | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial nlet/Perennial Outlet sonally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded  |
| Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_ Perennial I  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created_  Microrelief of Wetland Surface (P): Absented  | No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial nlet/Perennial Outlet sonally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded nce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment  |
| Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent OutletPerennial I  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider CreatedMicrorelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Comments of Com | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial nlet/Perennial Outlet Perennial Inlet/No Outlet Perennial sonally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded nce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment t Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.) Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs   |
| Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_ Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created_ Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Creaturn Interval >5 yrs  | No Inlet/Intermittent OutletNo Inlet/Perennial OutletIntermittent Inlet/No t OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial nlet/Perennial OutletPerennial Inlet/No OutletPerennial nlet/Perennial Outlet sonally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded nce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment  E  |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent  Frequency of Overbank Flooding (P): No Created Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflood Water pH (P): No surface water Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable   | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No toutlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial  |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrelief of Wetland Surface (P): Absent  Frequency of Overbank Flooding (P): No Orectant Orectant Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water  Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low   |  |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent  Frequency of Overbank Flooding (P): No Created Return Interval >5 yrs Degree of Outlet Restriction (P): No Outflood Water pH (P): No surface water Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable   |  |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrelief of Wetland Surface (P): Absent  Frequency of Overbank Flooding (P): No Orectant Orectant Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water  Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low   |  |
| Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_ Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created_ Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Interval >5 yrs   | No Inlet/Intermittent Outlet   |
| Inlet/Outlet Class (P): No Inlet/OutletOutlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_ Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created_ Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Interval >5 yrs   | No Inlet/Intermittent Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No CReturn Interval >5 yrs Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Comparison of Glacial Till/Not Permeable Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No See LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolate Only Connected Above Connected   | No Inlet/Intermittent Outlet   |
| Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created   | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No toutlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet_   |

Page 4 of 4

## Wetland Determination Data Form QA/QC Checklist

This form to be completed before leaving the field site.

| Feature | e ID: <u>W84CH034</u> Field Target: <u>  5/26</u> Date: <u>8/2/(J</u>  |
|---------|--|
| For all | items not checked, please provide detailed explanation in the notes section of data form.  |
|         |  |
| 1.      | Site Description   |
|         | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included?   |
| 2.      | Vegetation   |
|         | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  |
|         | Vegetation names are entered legibly for all strata present?  Cover calculations are complete and correct?   |
|         | All dominant species have been determined and recorded per strata?   |
|         | Indicator status is correct for each species?  |
|         | Dominance Test and Prevalence Index have been completed?   |
| 3.      | Soil   |
|         | Soil profile is complete?  Appropriate hydric soil indicators are marked?  |
| 4.      | Hydrology  |
|         | Appropriate hydrology indicators are marked?  Surface water, water table, and saturation depths are recorded if present?   |
| 5.      | Functions and Values   |
|         | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6.      | Field Logbook  |
|         | Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated? |

### 7. Maps

| Wetland boundaries have been corrected if necessary?  Maps are initialed and dated?  |
|--|
| 8. Photos  |
| <ul> <li>□ Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?</li> <li>□ Two photos were taken for each Observation Point (vegetation/site overview)?</li> </ul> |
|  |
|  |
| Wetland Scientist (print)  8/5/17  |
| Brean Strong 8/2/15  |
|  |
|  |
|  |

| SHE DESCRIPTION   |  | <b>地震主力和主义</b>        | 100                                     |   |
|---|--|-----------------------|---|---|
| Survey Type: Centerline / Acces   | ss Road (explain) Other (  | explain)              | Field Target: 15124                     | Map #:Map Date: 4/19/15   |
| Date: 8/2/15  | Project Name & No.: Alaska   | LNG 60418403          | Feature Id:                             | W54L4635  |
| Investigators: Bran Stron   | ng Dennifer And  | erson                 |   | Team No.: W84   |
| State: Alaska   | Region: Alaska   | Milepost: ≤           | 02                                      |   |
| Latitude: 64° 10' 40.68   | Longit   | tude: 149°/7'         | 34.56                                   | Datum: WGS84  |
| Logbook No.: 62   | Logbook Page No.:  | Picture No.:          | M8424035-11                             | EG-VEG-PIT-PLUG   |
| SITE PARAMETERS   | A STATE OF THE STA |                       | HARL FOR MERCHAN                        | THE RESERVE OF THE PARTY OF   |
| Subregion: Tanana - Kuske   | skin Lowlands  | Landform (hill        | Islope, terrace, hummock                | s, etc.):   |
| Slope (%):5 Aspect  | E  | Local relief (c       | oncave, convex, none): F                | Tat to slightly concave   |
| Pre-mapped Alaska LNG/NWI classifica  | ition: PSS4B 1A2   | Evidence of V         |   | hummocley-sm  |
| Are climatic/hydrologic conditions on the Yes No (if no expl  |  | Are "No<br>Yes_       | ormal Circumstances" pre No (If no, exp |   |
| Are Vegetation, Soil, or Hyd  | drology Significantly Disturt  | oed? No_x             | _(If yes, explain in Notes              |   |
| Are Vegetation, Soil, or Hyd  | drology Naturally Problema   | tic? No               | _ (If yes, explain in Notes             | .)  |
| SUMMARY OF FINDINGS   | (10) (10) (10) (10) (10) (10) (10) (10)  |                       |   | CALL THE PARTY OF |
| Hydrophytic Vegetation Present? Yes_  | No   | Is the Sampled A      | rea within a Wetland?                   | Yes No  |
| Hydric Soil Present? Yes_   | No   | Wetland Type:         | ) /                                     |   |
| Wetland Hydrology Present? Yes_   | X No   | Alaska Vegetation     | Classification (Viereck):               | IAZ   |
| Notes and Site Sketch: Please include Decorridor.  Closed canopy Canual Canal | AP, GEOLIV, FEW  | noss. S<br>/no shribs | A Amarist                               | sixed in Nearly<br>dens Very sparce   |

| VEGETATION (use scientific names of plants | )                   |                               |                     |   |
|--|---------------------|-------------------------------|---------------------|---|
| Tree Stratum (Plot sizes: 100)             | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC:  Total Number of Dominant Species Across All Strata: |
| 1. Pices mariana                           | 50%                 | 4                             | Fac W               | % Dominant Species that are OBL, FACW, or FAC:  |
| 2. Betola revalusiana                      | 5%                  |                               | Fac II              | 70 Dominant Species that are ODE, 1 AOVV, OF 1 AC.  |
| 3.   |                     |                               |                     |   |
| 4.   |                     |                               |                     | Prevalence Index worksheet:   |
| Total Cover:                               | 55                  |                               |                     | Total % Cover of: Multiply by:  |
| 50% of total cover:                        | 27.5 20             | % of total cov                | er:                 | OBL species:X 1 =   |
| Sapling/Shrub Stratum ( 26 )               | Absolute            | Dominant                      | Indicator           | FACW species: X 2 = 11 4  |
|  | % Cover             | Species?                      | Status              | FAC species 17 X 3 = 51   |
|  |                     | (Y/N)                         |                     | FACU species X 4 = 20   |
| 1. Pices Marians                           | 7                   | 7                             | Fach                | UPL speciesX 5 =  |
| 2.   |                     |                               | FACRIS              | Column Totals: 75 (A) 185 (B)   |
| 3. Vaccinium vitis-idaea                   | 1/-                 |                               | Fac                 | PI = B/A = 2.34   |
| 4. Thedodendron groenlandierm              | T                   |                               | Foe                 |   |
| 5. Salix bebliana                          | 1                   |                               | Fac                 |   |
| 6. Rosa acicularis                         | T                   |                               | FACU                |   |
| 7.   |                     |                               | 1:                  |   |
| 8.   |                     |                               |                     |   |
| 9.   |                     |                               |                     |   |
| Total Cover:                               | 9                   |                               |                     |   |
| 50% of total cover:                        | 4.5 20              | % of total cov                | er: 1.8             | 5 - 1   |
| VEGETATION (use scientific names of plants | ) [                 |                               |                     |   |
| Herb Stratum (                             | Absolute            | Dominant                      | Indicator           | Hydrophytic Vegetation Indicators:  |
|  | % Cover             | Species?                      | Status              | Dominance Test is > 50%   |

| VEGETATION (use scientific names of plants | )                   |                               | THE REAL PROPERTY.  | A Tale to define a proper through the same  |
|--|---------------------|-------------------------------|---------------------|---|
| Herb Stratum ( 76 )                        | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%   |
| 1. Calamagiastis lapponica                 | 10%                 | 7                             | Fac U               | Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  |
| 3. Rquisetum Sylvatieum 4. 5.              | T                   |                               | FOC                 | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. |
| 6.   |                     |                               |                     | THE RESERVE TO SERVE SHEET SHEET, STORY   |
| 7.   |                     |                               |                     | % Bare Ground   |
| 8.   |                     |                               |                     | % Cover of Wetland Bryophytes   |
| 9.   |                     |                               |                     | Total Cover of Bryophytes   |
| 10.  |                     |                               |                     | % Cover of Water  Hydrophytic Vegetation Present (Y/N):   |
| Total Cover: 50% of total cover:           | 100                 | % of total cov                | er:3                | Notes: (If observed, list morphological adaptations below):   |

Feather Moss 87 Litter 3 Lichen 10

Depth (in): NA

Depth (in):

Depth (in):

Surface Water Present (Y/N):

Water Table Present (Y/N):

Saturation Present (Y/N): (includes capillary fringe)

Notes:

|  |  |  | Date Fe  | ature ID    | 7840                  |  |  | Soil Pit Required (Y/N)   |
|--|--|--|--|-------------|-----------------------|--|--|---|
| OIL PROF   | ILE DESCRIPTION:   | (Describe                                | to the depth needed  | to docum    | nent the              | indicator or o   | confirm the absence                                      |   |
| Depth  | Matrix   | - 32                                     | Redox Features   |             |                       |  |  | ,   |
| (inches)   | Color (moist)  | %  | Color (moist)  | % -         | Type <sup>1</sup>     | Loc²   | Texture  | Notes   |
| 0-6  |  |  |  |             |                       |  |  |   |
| 6-9  | 10724/1  | 85                                       |  |             |                       |  |  | 10-12 4/3 2nd matrix color  |
| 9-12   | 575/1  | 90                                       | 107RJ/6  | 10          | C                     | M  | VESAL  | frost nottles/1 = matrix  |
|  | 1 - 1 - 2  |  |  |             |                       |  | 15.00  |   |
| 12-17  | 10-45/6  | 82                                       |  |             |                       |  | UFSal  |   |
|  | 5+5/1  | 15                                       |  |             |                       |  |  |   |
| 17.20+   |  | 70                                       |  |             |                       |  | vfSal  | SPOZIC, 7.5-124/4, 2.5-15/2   |
| OF STREET, STR | oncentration, D=Dep  | letion, RM                               | I=Reduced Matrix, C  | S=Covere    | ed or Co              | ated Sand G  | rains. <sup>2</sup> Location:                            | PL=Pore Lining, M=Matrix.   |
|  | IL INDICATORS  |  |  |             |                       |  | INDICATORS   | FOR PROBLEMATIC HYDRIC SOILS <sup>3</sup>   |
|  | Histel (A1)  |  | Alaska Gleyed  | (A13)       | N                     |  | Alaska Color C   | hange (TA4) <sup>4</sup>  |
|  | don (A2) _ N   |  | Alaska Redox (   | (A14)       | 1                     |  | Alaska Alpine  | Swales (TA5)  |
| Black Histic   | (A3)   | 10                                       | Alaska Gleyed  | Pores (A    | 15)^                  | )  |  | with 2.5Y Hue N   |
| Hydrogen St  | ulfide (A4)  | _  | 1  |             |                       |  | Alaska Gleyed<br>Layer                                   | without 5Y Hue or Redder Underlying   |
| hick Dark S  | Surface (A12) N  |  |  |             |                       | Other (Explain in Notes)   |  |   |
| listurbed or<br>Give details<br>Restrictive L  | problematic. s of color change in N ayer (if present): Typ   | otes.                                    | unfrost D  | epth (incl  |                       | gy, and an a   | ppropriate landsca                                       | pe position must be present unless  |
| isturbed or<br>Give details<br>lestrictive L   | problematic. s of color change in N  | otes.                                    | unfrost D  | epth (incl  | nes):                 | 17   | ppropriate landsca                                       | spe position must be present unless   |
| disturbed or Give details Restrictive L  | problematic. s of color change in N ayer (if present): Typ  Present (Y/N):   | Low e                                    | hroma parer  | epth (incl  | nes):                 | 17   |  | or more required)   |
| disturbed or Give details Restrictive L  | problematic. s of color change in N ayer (if present): Typ  Present (Y/N):  SaA 240  | tow e                                    | hroma parer  | epth (incl  | nes):                 | 17   | (INDICATORS (2   |   |
| HYDROLOG   | problematic. s of color change in N ayer (if present): Type  Present (Y/N):  Salvation  Syprimary Indicates  | ATORS (a                                 | hrama Pereviny one indicator is surface Soil Cracks (B6)   | repth (incl | s v L                 | SECONDAR' Vater-stained eaves (B9)   | (INDICATORS (2   | or more required)  Stunted or Stressed  |
| Hydric Soil  | problematic. s of color change in N ayer (if present): Typ  Present (Y/N):  SaA 24000  EY PRIMARY INDICA  er (A1)  | ATORS (a Sur - (B7                       | hrama Pereviny one indicator is surface Soil Cracks (B6)   | ufficient)  | s v L cory D C L cory | ECONDAR' Vater-stained eaves (B9) Prainage Patr Oxidized Rhiz iving Roots              | erns (B10) Nospheres along C3) N                         | or more required)  Stunted or Stressed Plants (D1)  |
| Hydric Soil  | problematic. s of color change in N ayer (if present): Typ  Present (Y/N):  SaAratro  EY PRIMARY INDICA  er (A1)  Table (A2)  A3)  | ATORS (a Sur - (B7 Spa Cor Mai           | ny one indicator is surface Soil Cracks (B6) Indation Visible on Aei Insely Vegetated Incave Surface (B8)  | rial Image  | s S V L Cory D C L P  | ECONDAR' Vater-stained eaves (B9) Prainage Pati  | erns (B10) _\times_ cospheres along C3) _\times_ Reduced | or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  |
| Hydric Soil  Hydric Hydr | problematic. s of color change in N ayer (if present): Typ  Present (Y/N):  SaAratro  EY PRIMARY INDICA  er (A1)  Table (A2)  A3)  | ATORS (a Sur Inui (B7 Spa Cor Mai        | ny one indicator is surface Soil Cracks (B6) Indation Visible on Aerolatica Surface (B8) Independent of the control of the con | rial Image  | s v L C C L C P Ir    | Vater-stained eaves (B9) orainage Patriving Roots (Iresence of Fon (C4) / alt Deposits | erns (B10) Nospheres along C3) Nospheres                 | or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic             |
| Hydric Soil  Hydric Hydric Soil  Hydric | problematic. s of color change in N ayer (if present): Typ  Present (Y/N):  Sad radio  BY PRIMARY INDICA  BY PRIMARY INDICA  BY (A1)  Table (A2)  A3)  BY (B1)  Proposits (B2) | Sur Inuity (B7 Spa Cor Mai               | ny one indicator is surface Soil Cracks (B6) Indation Visible on Aei Insely Vegetated Incave Surface (B8) In Deposits (B15)  | rial Image  | s v L C C L C P Ir    | Vater-stained<br>eaves (B9)  | erns (B10) Nospheres along C3) Nospheres                 | or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4) |
| Hydric Soil  Hydric Hydr | problematic. s of color change in N ayer (if present): Typ  Present (Y/N):  SaA ratio  BY PRIMARY INDICA  er (A1)  Table (A2)  (B1)  Preposits (B2)                            | Sur Inui (B7 Spa Cor Mai Hyc Odd Dry Wai | ny one indicator is surface Soil Cracks (B6) Indation Visible on Aei Insely Vegetated Incave Surface (B8) In Deposits (B15) In Organ Sulfide In CC1) In Season   | ufficient)  | s v L C C L C P Ir    | Vater-stained eaves (B9) orainage Patriving Roots (Iresence of Fon (C4) / alt Deposits | erns (B10) Nospheres along C3) Nospheres                 | or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4) |

Wetland Hydrology Present (Y/N):

EC: NA

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix   |
|---|
| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Evergreen-Needle-leaved_ Scrub Shrub-Deciduous-Needle-leaved_ Scrub Shrub-Deciduous-Broad-leaved_ Scrub Shrub-Evergreen-Needle-leaved_ Emergent-Non-persistent_ Emergent-Persistent_ Aquatic Bed  |
| Percent Cover (P):         Tree (>5 dbh, >6m tall)         Sapling (<5 dbh, <6m tall)   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even  |
| Vegetation Density/Dominance (P): Sparse (0-20%)         Low Density (20-40%)         Medium Density (40-60%)         High Density (60-80%)           80%)         Very High Density (80-100%)         High Density (80-100%)         High Density (80-100%)  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="25">25% Scattered/Peripheral Cover</a> 26-75% Scattered or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)   |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover   |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface)<br>Abundant (>50% of surface)   |
| Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)  |
| HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
|   |
| SOIL VARIABLES  |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey  |
|   |
| HYDROLOGIC VARIABLES  |
| HYDROLOGIC VARIABLES  Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Outl  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/Intermittent Inlet/Intermitte               |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/P  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial In   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet_ Perennial Inlet/Perennial Outlet_ Perennial Inlet/Perennial Outlet_ Perennial Inlet/Perennial Outlet_ Perennial Inlet/No Outlet_ Perennial Inlet/Perennial Inlet/Pere   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennia  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermitte          |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial I  |
| Inlet/Outlet Class (P): No Inlet/Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Inlet/Intermitte |
| Inlet/Outlet Class (P): No Inlet/Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet   |

Page 4 of 4

### Wetland Determination Data Form QA/QC Checklist

This form to be completed before leaving the field site.

| Feature | e ID: W84LH 035 Field Target: 1507 Date: 8/2/15  |
|---------|--|
| For all | items not checked, please provide detailed explanation in the notes section of data form.  |
|         |  |
| 1.      | Site Description   |
|         | <ul><li>Site description, site parameters and summary of findings are complete?</li><li>A detailed site sketch is included?</li></ul>  |
| 2.      | Vegetation   |
|         | <ul> <li>At least 80% of onsite vegetation has been keyed to species, or collected for later identification?</li> <li>Vegetation names are entered legibly for all strata present?</li> <li>Cover calculations are complete and correct?</li> <li>All dominant species have been determined and recorded per strata?</li> <li>Indicator status is correct for each species?</li> <li>Dominance Test and Prevalence Index have been completed?</li> </ul> |
| 3.      | Soil   |
|         | ☐ Soil profile is complete? ☐ Appropriate hydric soil indicators are marked?   |
| 4.      | Hydrology  |
|         | Appropriate hydrology indicators are marked?  Surface water, water table, and saturation depths are recorded if present?   |
| 5.      | Functions and Values   |
|         | ☑ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6.      | Field Logbook  |
|         | Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?   |

### 7. Maps

|       | D       | Wetland boundaries have be<br>Maps are initialed and dated |   |        |
|-------|---------|--|---|--------|
| 8.    | Ph      | otos   |   |        |
|       | Ď.      | soil pit, 1 soil plug)?                                    | each Wetland Determination Data ach Observation Point (vegetation |        |
|       |         |  |   |        |
| Wetla | nd Sci  | entist (print)   | Som   | 8/2/15 |
| K     | )<br>(4 | can Etrong   | BOM   | 8/2/15 |

W84LH036

| SITE DESCRIPTION  |  |                         |  |               | STATE OF                                     |   |
|---|--|-------------------------|--|---------------|--|---|
| Survey Type: Centerline Acce  | ss Road (explain)  | Other (expla            | ain)   | Field Targ    | et:15112_                                    | Map #: 13 9 Map Date: 6/19/15                                   |
| Date: 8/25/15   | Project Name & No.:  | Alaska LNG              | 60418403   |               | Feature Id                                   | W84HTOHY " W84FHC   |
| Investigators: Trum Str   | y Jessu  | e Bro                   | unler  |               |  | Team No.: & 4   |
| State: Alaska   | Region: Alaska   |                         | Milepost:  | 27.4          |  |   |
| Latitude: 63° 56' 21, 54  | ic/ "  | ,Longitude              | 1490   | 5 37.         | 1041   | Datum: WGS84  |
| Logbook No.: 03   | Logbook Page No.:  | 011                     |  |               |  | NEC. NCG. PIT- PLUC   |
| SITE PARAMETERS   |  | OF NO.                  |  | WEYLH         | 004-7  | FCVKO-PIT_PLUS BET  |
| Subregion: Alaska Roman   |  |                         | Landform (hil  | lslope, terra | ce, hummock                                  | s, etc.): TCICACO / FOOTSlope                                   |
| Slope (%): 2% messured  |  |                         | Local relief (c  | oncave, con   | vex, none): F                                | STEPHY CONTANT MODERAL  |
| Pre-mapped Alaska LNG/NWI classifica  | ation: 0;102,111   | 12                      | Evidence of V  | Vildlife Use: | None o                                       | ASCINES MOSERTE   |
| Are climatic/hydrologic conditions on the Yes No (if no exp   | e site typical for this time<br>lain in Notes)                   | of year?                |  |               | nstances" pre<br>(If no; ex                  | esent:<br>plain in Notes.)                                      |
| Are Vegetation, Soil, or Hy   | drologySignificant   | tly Disturbed?          | NoX  | _(If yes, ex  | olain in Notes                               | )   |
| Are Vegetation, Soil, or Hy   | drology Naturally F  | Problematic?            | No   | _ (If yes, ex | plain in Notes                               | 3) Problematic Sits   |
| SUMMARY OF FINDINGS   |  |                         |  | 9011035       | E PROPERTY.                                  | <b>《</b> 在》,是第二世纪录  |
| Hydrophytic Vegetation Present? Yes_  | 7 No   | Is                      | the Sampled A  | rea within    | a Wetland?                                   | Yes No  |
| Hydric Soil Present? Yes_   | / No   | We                      | etland Type: 何   | Pss1/4        | S  |   |
| Wetland Hydrology Present? Yes_   |  | — Ala                   | aska Vegetation  | n Classificat | on (Viereck):                                | 11 A 3, 11 C 2  |
| Notes and Site Sketch: Please include I corridor. Open strated me more correction of correction conditions, allowers, allowers. In sphagnon and allowers subjected it moderate in size. | INE 2 SPINICE  OF BETAIN  MAPPINE HAR  MARY MASS ON  AC Print, A | woodland 2-2,9<br>herbo | nz. Mossis Lall or coors conscious conscious conscious conscious successions | Hy Pu         | cow + S.  de a b  ent o-  dur + o-  eve - co | at of MACOLI. ARCHA  I the site. A mix  eller of standary water |
| Mt<br>Slure.  | 14004  |                         | MA LHOOL OF  |               | 1-   | Source Comment  |
|   |  | (                       | 5161   | ZHE<br>PSS    | 1/43   |   |

| VEGETATION (use scientific names of plants |                     |                               |                     |  |                                  |                  |
|--|---------------------|-------------------------------|---------------------|--|----------------------------------|------------------|
| Tree Stratum (Plot sizes: 100)             | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test workships No. of Dominant Species to Total Number of Dominant | that are OBL, FACW, or           |                  |
| 1.   |                     |                               |                     | % Dominant Species that  |                                  |                  |
| 2.   |                     |                               |                     | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,                                      |                                  | ···              |
| 3,   |                     |                               |                     |  |                                  |                  |
| 4,   |                     |                               |                     | Prevalence Index workst  | heet:                            |                  |
| Total Cover:                               |                     |                               | 2                   | Total % Cover of:  | Multiply b                       | Y.               |
| 50% of total covers                        | 20                  | % of total cov                | er:                 | OBL species:   | X 1 =                            | -                |
| Sapling/Shrub Stratum ( 24)                | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species: 2 P FAC species 8 I FACU species 10                            | X 3 = 2415                       | -                |
| 1. Picca glavea                            | 10                  |                               | FARO                | UPL species  |                                  |                  |
| 2. Piece Marina                            | 2                   |                               | F of Cons           | Column Totals: 119   |                                  |                  |
| 3. Belula stendulosa                       | 5                   |                               | 5 × 6               | PI = B/A = 2.85  |                                  | 2                |
| 4. Bedula nana                             | 31                  | 7                             | FAC                 |  |                                  |                  |
| 5. Cally politics                          | 3                   |                               | FACUD               |  |                                  |                  |
| 6. Vaccion istiginaria                     | 15                  | 7                             | TA3                 |  |                                  |                  |
| 7. Vacciona vitre idea                     | 14                  |                               | FAC                 |  |                                  |                  |
| 8. Emperon signing                         |                     |                               |                     |  |                                  |                  |
| 9. Phododendron tomentosur                 | -[-                 |                               |                     |  |                                  |                  |
| Total Cover:                               |                     |                               |                     |  |                                  |                  |
| 50% of total cover:                        | <u>48</u> 20        | % of total cov                | er: 19.2            |  |                                  | 1.0              |
| Wear Parious                               | GIS TO THE STORY    | EN EXCESS A                   |                     | DWINED ACCOUNTS TO USE OF  | DALL SHE WAS A SHE WAS A SHE WAS | UNITED TO STREET |

| Herb Stratum ( 2.( )                | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N)         | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  ¬— Prevalence Index is ≤ 3.0   |
|-------------------------------------|---------------------|---------------------------------------|---------------------|---|
| 1. Archagostic latifolia            | 1/2                 | 7                                     | FACA3               | Morphological Adaptations¹ (Provide supporting data in Notes)   |
| 5. Festuca allarea                  | 2                   | 31                                    | FA(L)               | Problematic Hydrophytic Vegetation <sup>†</sup> (Explain) <sup>1</sup> Indicators of hydric soll and wetland hydrology must be present unless disturbed or problematic. |
| 6. 7. 8.                            | ,                   |                                       |                     | % Bare Ground<br>% Cover of Wetland Bryophytes  |
| 9.                                  |                     |                                       |                     |   |
| Total Cover:<br>50% of total cover: |                     | Hydrophytic Vegetation Present (Y/N): |                     |   |

| 6600                               | Commission of the Commission o |                 | 61,52116                              |             | <del>ज्यान</del>                              | TOPIC   | 19 2010 20 10 20   | Sell Dis De Missel OVAN   |  |
|------------------------------------|--|-----------------|---------------------------------------|-------------|---|---|--|---|--|
| SOIL                               |  |                 |                                       | eature ID   |   |   |  | Soil Pit Required (Y/N)   |  |
| SOIL PROFIL                        | E DESCRIPTION: (   | (Describe       |                                       | d to docu   | ment the                                      | indicator or co   | onfirm the absence   | e of indicators.)   |  |
| Depth                              | Matrix   | 1               | Redox Features                        | 1           |   | 1. 2  |  |   |  |
| (inches)                           | Color (moist)  | %               | Color (moist)                         | %           | Type <sup>1</sup>                             | Loc <sup>2</sup>  | Texture  | Notes   |  |
| 0.4                                |  |                 |                                       |             |   |   |  | Alaxamina libers  |  |
| 4.5-6                              | 25 510   | 100             |                                       |             |   |   | VISAL  |   |  |
| 6-8                                | 2513/2   | ටහා             | -                                     |             |   | <del></del>   | VFSAL  | 10 SALDI  |  |
| 2.2.3                              | 2.543/2  |                 | 5-12-4/6                              | 40          | C   | PLIM  | V-OSAL   | backelly a bead of non  |  |
|                                    | 2.5-14/1   | 30              | 57 571                                | 10          |   | PILM  |  | indicating persistent me  |  |
| 9:5-13                             | 10-12 4/6  | 30              | 54 5/1                                | (0)         | 0   | 1 8 aft   |  |   |  |
| 13 - 20                            | 516/1  | 75              | 1972516                               | 15          | C.  | 200   | 15-6   | dextores like lover 11  |  |
|                                    | ncentration, D=Deple   | etion, RN       | l=Reduced Matrix,                     | CS=Cove     | red or Co                                     | ated Sand Gra   |  | PL=Pore Lining, M=Matrix.   |  |
| HYDRIC SOIL                        | INDICATORS   | N 30 19         |                                       | S WA        |   | Wall State  | CALL STREET, SALES   | FOR PROBLEMATIC HYDRIC SOILS  |  |
| Histosol or His                    | stel (A1)/   |                 | Alaska Gleye                          |             |   |   |  | hange (TA4) <sup>4</sup>  |  |
| Histic Epipedo                     | n (A2) <u>N</u>  |                 | Alaska Redox                          | (A14)_      | 7*  |   | Alaska Alpine S  | Swales (TA5)  |  |
| Black Histic (A                    | .3) <u>N</u> (E.   | h .             | Alaska Gleye                          | d Pores (   | <u>ل ا                                   </u> |   |  | with 2.5Y Hue/×   |  |
| Hydrogen Sulf                      | ide (A4) <u>N</u>  | -               |                                       |             |   |   | Alaska Gleyed<br>Layer N   | without 5Y Hue or Redder Underlying   |  |
|                                    | rface (A12) <u>\( \lambda \)</u>   |                 | 3.                                    |             |   |   |  | in Notes) y sec notes like  |  |
| disturbed or pr<br>Give details of | roblematic.  f color change in Nover (if present): Type  | otes.           |                                       |             | ches):  |   | пргорпале наповса  | pe position must be present unless L o  |  |
| Hydric Soll P                      | resent (Y/N):/   | mass            | ine Africa                            |             |   |   |  |   |  |
| context                            | with a box   | Z of<br>TORS (a | concentration                         | Sufficient) |   | ECONDARY<br>Vater-stained   | the water +  | concert of Ak readox<br>ect. The low chrone in<br>able strongly indicates a<br>or more required)  Stunted or Stressed |  |
|                                    | 95-10-3  |                 | ndation Visible on A                  |             | non/  | eaves (B9)  | 7 (240) 1)   | Plants (D1)  Geomorphic Position (D2)   |  |
| High Water Ta                      | DIB (AZ)   | (B7             |                                       |             |   | Drainage Patterns (B10) N Geomorphic Position                       |  |   |  |
| Saturation (A3                     | )  | Spa<br>Cor      | rsely Vegetated<br>ncave Surface (B8) | <u>u</u>    |   | Oxidized Rhizospheres along Living Roots (C3) Shallow Aquitard (D3) |  |   |  |
| Water Marks (I                     | 31) _ N  | Mar             | l Deposits (B15)                      | <u>N</u>    |   | Presence of Reduced Microtopographic Relief (D4)                    |  |   |  |
| Sediment Depo                      | osits (B2)   |                 | lrogen Sulfide<br>or (C1)             |             |   | Salt Deposits (C5) 1 FAC-Neutral Test (D5)                          |  |   |  |
| Drift Deposits (                   | B3) _ N  | Dry-<br>Wat     | -Season<br>ter Table (C2)/            |             | N   | lotes:  | Corencial  | flow from weeter out 7  |  |
| Algal Mat or Cr                    | ust (B4) _ \( \bullet \)   | _ Oth           | er (Explain in Notes                  | s):         | 4   | he hei  | long to  | Recent inns reinforce it the time of sit  |  |
| Iron Deposits (                    | B5)  |                 |                                       |             |   | < , t-  |  |   |  |
|                                    |  | MANAGE          | MATERIAL PROPERTY                     |             | N. Person                                     |   | DESCRIPTION OF THE PERSON OF T |   |  |
|                                    | Surface Water Present (Y/N): Depth (in): Depth (in): 7   |                 |                                       |             |   |   | ogy Present (Y/N   | ):  |  |
| Saturation Pres                    | sent (Y/N):  |                 | Depth (in): "/<br>Depth (in): பு      |             | EC:   |   | No do  | mdink water   |  |
| (includes capill<br>Notes:         | ary minge) (   |                 |                                       |             |   |   | /YU C, 'K  | WATE  |  |
|                                    |  |                 |                                       |             |   | . 45  | ~B 11 /2   |   |  |

# AQUATIC SITE ASSESSMENT DATA FORM

USYLHOSY <del>। २०१५ च्य</del> ७७५

N841-17044 8 2515

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved     Forested-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved/       Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved/     /   |
| Percent Cover (P): Tree (>5 dbh, >6m tall) ○ Sapling (<5 dbh, <6m tall) 12 Tall shrub (2-6m) ○ Short shrub (0.5-2m) 70         Dwarf shrub (<0.5m) 1   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly UnevenModerately even  |
| Vegetation Density/Dominance (P): Sparse (0-20%)       Low Density (20-40%)       Medium Density (40-60%)       High Density (60-80%)         80%)       Very High Density (80-100%)       X   |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) X High (>25)  |
| Presence of Islands (M): Absent (none)X One or Few Several to Many N/A   |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover_ ×   |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)   |
| Vegetative Interspersion (P):       Low (large patches, concentric rings)       Moderate (broken irregular rings)         High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat X Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
| Flat/Stope complex   |
| SOIL VARIABLES   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey   |
|  |
| HYDROLOGIC VARIABLES   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet   |
| Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated X Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded  |
| Evidence of Sedimentation (P): No Evidence Observed X Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.)_*x Pronounced (>18in.)   |
| Frequency of Overbank Flooding (P): No Overbank Flooding Keturn Interval 1-2 yrs Return Interval 2-5 y |
| Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow   |
| Water pH (P): No surface water / Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading  |
|  |
| Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable  |
|  |
| Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) / 2 / .  Evidence of Seeps and Springs (P): No Seeps or Springs / Seeps Observed Intermittent Spring Perennial Spring   |
| Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) / 2 / .  Evidence of Seeps and Springs (P): No Seeps or Springs / Seeps Observed Intermittent Spring Perennial Spring  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected  Only Connected Below   |
| Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) / 2 / .  Evidence of Seeps and Springs (P): No Seeps or Springs / Seeps Observed Intermittent Spring Perennial Spring .  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Above Connected Upstream & Downstream Unknown  |
| Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) / 2 //  Evidence of Seeps and Springs (P): No Seeps or Springs / Seeps Observed Intermittent Spring Perennial Spring  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below Only Connected Above Connected Upstream & Downstream Unknown Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space) ✓   |
| Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%) / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 / 2 /   |

GPS Technician QA/QC check:

| SITE DESCRIPTION  | Fremmilde Sha              |  |                            |                       |                     |                              |
|---|----------------------------|--|----------------------------|-----------------------|---------------------|------------------------------|
| Survey Type: Centerline × Acces   | s Road (explain)           | Other (expla   | iln)                       | Field Targ            | jet: <u>] \$118</u> | Map #: 132 Map Date: 6/19/15 |
| Date: 8/25/15   | Project Name & No.:        | 60418403   |                            | Feature Id:           | WEYLHTOY & W84LH037 |                              |
| Investigators: Brun Stran   | y Dessie                   | Drown  | ber                        |                       |                     | Team No.: いざく                |
| State: Alaska   | Region: Alaska             |  | Milepost: ≤                | 22.1                  |                     |                              |
| Latitude: 63 54 45,135  | ,                          | Longitude  | -149 0                     | 4 25.                 | 396                 | Datum: WGS84                 |
| Logbook No.: 03   | Logbook Page No.:          | Ħ  | Picture No.>               | W8411-7               | 545 -V6             | ic_vac_PIT_Plub              |
| SITE PARAMETERS   |                            | SCHOOL SECTION   | Jan Williams               | ~84 LH                | 005 -VE             | DIVEG - PIT- PLUG            |
| Subregion: Alaska Pange   | MITMEN AND AND AND AND     |  | Landform (hill             | slope, terrac         | ce, hummock         | s, etc.): Terrace            |
| Slope (%): 7. <   |                            |  | Local relief (c            |                       |                     |                              |
| Pre-mapped Alaska LNG/NWI classificat   | tion: P<<.T>               | , ,  | Evidence of V              |                       |                     |                              |
| Are climatic/hydrologic conditions on the   | site typical for this time |  | Are "No                    | rmal Circun           | nstances" pre       | sent:                        |
| Yes No (if no expla   |                            | h. Dist b 10   | Yes                        | No                    |                     | plain in Notes.)             |
| Are Vegetation, Soil, or Hyd  |                            | ly Disturbed?  | NO NJ                      | _(If yes, ext         | NOTOS               | ) ATV tail-well vesel        |
| Are Vegetation, Soil, or Hyd  | rology Naturally F         | Problematic?   | No_N                       | _ (If yes, ex         | piain in Notes      |                              |
|   | TACABIEN DAMPERSON         | The state of the s | THE PERSON NAMED IN COLUMN | ANT SURFERENCE STREET |                     | Van                          |
| Hydrophytic Vegetation Present? Yes   |                            | Is 1   | the Sampled A              | rea within            | a Wetland?          | Yes No_1.                    |
| Hydric Soil Present? Yes  | No                         | We   | etland Type: )             | )                     |                     |                              |
| Wetland Hydrology Present? Yes  | No_ N                      | — Ala  | iska Vegetation            | Classificati          | on (Viereck):       | (( C )                       |
| Notes and Site Sketch: Please include D<br>corridor. Close 2 Low Shrub<br>Community to the n<br>No his diology. | Birch Commu                | vity (   | See 2 517                  | C2 P1                 | UCIA -              | Sould amy                    |
|   | A TOUS HOOS                |  |                            | h.                    |                     |                              |

| VEGETATION (use scientific names of plants | )                   |                               | Nation 1            | Charles and the second of the second  |
|--|---------------------|-------------------------------|---------------------|---|
| Tree Stratum (Plot sizes: 100 )            | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: (A)  Total Number of Dominant Species Across All Strata: (B) |
| 1. Picca Stavea                            | 3                   |                               | FACU                | % Dominant Species that are OBL, FACW, or FAC: (0) (A/B)  |
| 2.   |                     |                               |                     |   |
| 3.   |                     |                               |                     | <b>原等的是一种的一种,但是一种的一种的一种。</b>  |
| 4. /                                       |                     |                               |                     | Prevalence Index worksheet:   |
| Total Cover:                               |                     |                               |                     | Total % Cover of: Multiply by:  |
| String String Som of total cover:          | 20                  | % of total cove               | er:                 | OBL species:X 1 =   |
| Sapling/Shrub Stratum ( 2 6 )              | Absolute            | Dominant                      | Indicator           | FACW species: 2 X 2 =   |
|  | % Cover             | Species?<br>(Y/N)             | Status              | FAC species   |
| 1. Picen glaver                            | 7                   |                               |                     | UPL speciesX 5 =  |
| 273 clula Mana 3                           | 70                  | 7                             | FAC                 | Column Totals: 113 (A) (B)  |
| 3. Vaccinium oliginosum                    | 3                   |                               | FAC                 | PI = B/A = 3.01   |
| 4. Salix pulchra                           | 2                   |                               | FACIL               |   |
| 5. Phododendron graculadicas               | , —                 |                               |                     |   |
| 6. Salix bebbiana 31                       |                     |                               |                     |   |
| 7. Vaccinion vitis idace                   | 2.5                 | 7                             | FAC                 | *   |
| 8.   |                     |                               |                     |   |
| 9.   | W                   |                               |                     |   |
| Total Cover:<br>50% of total cover:        |                     | % of total cove               | er:                 |   |

| VEGETATION (use scientific names of plants   |                     |                               |                     |  |
|--|---------------------|-------------------------------|---------------------|--|
| Herb Stratum ( 2 C )   | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:   |
| 1. Calamagnostis lapponica<br>2. Equisetum Silvaticum<br>3. Mertensia Paniculata<br>4. |                     | 7                             | FAC                 | Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. |
| 6. 7. 8. 9. 10. Total Cover: 50% of total cover:                                       |                     | % of total cove               | er:                 |  |
|  |                     |                               |                     | Freather Stors 75  |

Mass Alphahamse Foliose tacker

T Page 2 of 4

W84LH037

| Depth                    | Matrix   | LE DESCRIPTION: (Describe |                       |                           |                   |                  |                               |   |  |  |
|--------------------------|--|---------------------------|-----------------------|---------------------------|-------------------|------------------|-------------------------------|---|--|--|
| (inches)                 | Color (moist)  | %                         | Color (moist)         | %                         | Type <sup>1</sup> | Loc <sup>2</sup> | Texture                       | Notes   |  |  |
| > - 3                    |  |                           |                       |                           |                   |                  |                               |   |  |  |
| 3 - 5                    | 10-12 3/1  | 100                       |                       |                           |                   |                  | SIL                           |   |  |  |
| 5-60                     | 5-123/4  | [00]                      |                       |                           |                   |                  | SIL                           |   |  |  |
| = 9                      | 25-16/1  | 9,5                       |                       |                           |                   |                  | Sic                           |   |  |  |
|                          | 10725/6  | 10                        |                       |                           | 7                 |                  |                               |   |  |  |
| -2                       | 2.5-15/4   | (00)                      |                       |                           |                   |                  | V+Sac                         |   |  |  |
|                          | Concentration, D=Dep   | letion, RM                | l≂Reduced Matrix,     | CS=Cov                    | ered or Co        | ated Sand G      | Grains. <sup>2</sup> Location | n; PL=Pore Lining, M=Matrix.                        |  |  |
| YDRIC SO                 | OIL INDICATORS   | S. Bulletin               | 图 \$10.00mm (10.00mm) |                           |                   | <b>建筑建</b>       | INDICATORS                    | FOR PROBLEMATIC HYDRIC SOILS                        |  |  |
| listosol or l            | Histel (A1) N  |                           | Alaska Gleye          | d (A13)                   | N                 |                  | Alaska Color                  | Change (TA4)*                                       |  |  |
| Histic Epipedon (A2) _ ん |  |                           | Alaska Redo           | Alaska Redox (A14)        |                   |                  |                               | Alaska Alpine Swales (TA5) _ N                      |  |  |
| Black Histlc (A3)        |  |                           | Alaska Gleye          | Alaska Gleyed Pores (A15) |                   |                  |                               | Alaska Redox with 2.5Y Hue                          |  |  |
| Hydrogen Sulfide (A4)    |  |                           |                       | Alaska<br>Layer_          |                   |                  |                               | aska Gleyed without 5Y Hue or Redder Underlying yer |  |  |
| Thick Dark Surface (A12) |  |                           |                       |                           |                   |                  | Other (Explain in Notes)      |   |  |  |
| listurbed or             | tor of hydrophytic veg<br>problematic.<br>s of color change in N |                           | ne primary indicato   | r of wetla                | and hydrolo       | gy, and an a     | appropriate landso            | cape position must be present unless                |  |  |
| Give detail:             |  | pe: NA                    |                       | Donth /i                  | nches):^          | 1 A              |                               |   |  |  |

| ORS (any one indicator is sufficient)  | SECONDARY INDICATORS (2 of                    | more required)                   |  |  |  |
|--|---|----------------------------------|--|--|--|
| Surface Soil Cracks (B6)   | Water-stained<br>Leaves (B9)                  | Stunted or Stressed Plants (D1)  |  |  |  |
| Inundation Visible on Aerial Imagery (B7)  | Drainage Patterns (B10)                       | Geomorphic Position (D2) N       |  |  |  |
| Sparsely Vegetated Concave Surface (B8)  | Oxidized Rhizospheres along Living Roots (C3) | Shallow Aquitard (D3)            |  |  |  |
| Marl Deposits (B15)  | Presence of Reduced Iron (C4) N               | Microtopographic<br>Relief (D4)  |  |  |  |
| Hydrogen Sulfide<br>Odor (C1)  | Salt Deposits (C5)                            | FAC-Neutral Test (D5)            |  |  |  |
| Dry-Season<br>Water Table (C2)   | Notes:  |                                  |  |  |  |
| Algal Mat or Crust (B4) Other (Explain in Notes):  |   |                                  |  |  |  |
|  |   |                                  |  |  |  |
|  |   |                                  |  |  |  |
| Surface Water Present (Y/N): N Depth (in): NA  Water Table Present (Y/N): N Depth (in): NA |   |                                  |  |  |  |
|  |   | Wetland Hydrology Present (Y/N): |  |  |  |
| Saturation Present (Y/N): (includes capillary fringe)                                      |   | EC: NA                           |  |  |  |
|  | Surface Soll Cracks (B6)                      | Surface Soll Cracks (B6)         |  |  |  |

| VEGETATION VARIABLES P# Plot, I  | M≅ Matrix  |          |
|--|--|----------|
| Forested-Evergreen-Needle-leaved   | acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Emergent-Non-persistent Emergent-   | -        |
| Percent Cover (P): Tree (>5 dbh, >6m tall)_<br>Dwarf shrub (<0.5m) Tall herb (≥1   | Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m)  |          |
| Number of Wetland Types (M):   | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even  |          |
| Vegetation Density/Dominance (P): Sparse<br>80%) Very High Density (80-100%)   | e (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (6   | 60-      |
| Interspersion of Cover & Open Water (P):<br>Peripheral Cover>75% Scattere  | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered ed or Peripheral Cover N/A   | ed or    |
| Plant Species Diversity (P): Low (< 5 plant  | species) Medium (5-25 species) High (>25)  |          |
|  | One or Few Several to Many N/A   |          |
| Cover Distribution of Dominant Layer (P): Open Small Scattered Patches_  | No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Continuous Cover   |          |
|  | (0-25% of surface) Moderately Abundant (25-50% of surface)   |          |
| Vegetative Interspersion (P): Low (large<br>High (small groupings, diverse and interspers  | e patches, concentric rings) Moderate (broken irregular rings)   |          |
| HGM Class (P): Slope Flat  | Lacustrine Fringe Depressional Riverine Estaurine Fringe   |          |
| Sales Succession (Sec.   |  | (Fattos) |
| SOIL VARIABLES   |  | 12112    |
| Soil Factors (P): Soil Lacking  Mineral: Gravelly Mineral: Sandy   | Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Silty Mineral: Clayey   |          |
|  |  |          |
| HYDROLOGIC VARIABLES   |  | 2011     |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I   | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Outlet  | nnial    |
| Inlet/Outlet Class (P): No Inlet/OutletOutletIntermittent Inlet/Intermittent Outlet Perennial I  | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Peren<br>Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet<br>sonally Flooded, Temporarily Flooded, Saturated   | nnial    |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Eviden   | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Peren<br>Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet<br>sonally Flooded, Temporarily Flooded, Saturated   |          |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence  | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Peren<br>Inlet/Perennial Outlet<br>sonally Flooded, Temporarily Flooded, Saturated<br>Semiperm. Flooded   | nt       |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Eviden Created Microrellef of Wetland Surface (P): Absent   | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Peren<br>Inlet/Perennial Outlet<br>sonally Flooded, Temporarily Flooded, Saturated<br>Semiperm. Flooded<br>nce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sedimer   | nt       |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Eviden Created Microrellef of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Company (P): No Comp | t OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/PoutletPerennial Inlet/No OutletPerennial Inlet/No Outlet                        | nt       |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Eviden Created Microrellef of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No C Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water C  | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Ou   | nt       |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evidence Treated Microrellef of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No CReturn Interval >5 yrs_Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water_O  | t OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/PooletPerennial Inlet/PooletPerennial OutletPerennial OutletPerennial OutletPerennial Inlet/No OutletPere                          | nt       |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrellef of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Prequency of Overbank Flooding (P): No Created Prepared Pr | t OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial Inlet/No OutletPerennial Inlet/No Outlet   | nt       |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrellef of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No CReturn Interval >5 yrs_Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water_CSurficial Geologic Deposit Under Wetland Glacial Till/Not Permeable   | t OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial Inlet/No OutletPerennial Inlet/No Outlet   | nt       |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of Sedimentation (P): No Evider Created  Microrellef of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created Prequency of Overbank Flooding (P): No Created Prepared Pr | t OutletIntermittent Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial OutletPerennial Inlet/No OutletPerennial Inlet/Perennial Inlet/No OutletPerennial Inlet/No Outlet   | nt       |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intermittent Inter | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet  | nt       |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Intermittent Inter | t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Sediment Sediment Sediment Sediment Sediment Sediment Sediment Sediment Sediment Inlet/No Outlet Perennial Sediment S | nt       |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial I Perennial I Perenni | t Outlet   | nt       |
| Inlet/Outlet Class (P): No Inlet/Outlet_Outlet_Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet_Perennial I Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Evidence of SedImentation (P): No Evidenceated  Microrellef of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No Created  Frequency of Overbank Flooding (P): No Created Power of Overbank Flooding (P): No Ove | t Outlet   | nt       |

| SITE DESCRIPTION   |                     |              |                 |                |                    | <b>计数据编码的数据编码</b>            |
|--|---------------------|--------------|-----------------|----------------|--------------------|------------------------------|
| Survey Type: Centerline_X_ Acces   | s Road (explain)    | Other (expla | ain)            | Field Targ     | et: <u>  \$117</u> | Map #: 13-1 Map Date: 6/19/1 |
| Date: 8/25/15  | Project Name & No.: | Alaska LNG   | 60418403        |                | Feature Id         | 6 754 1 1046 W84LH038        |
| Investigators: Bryan Stron   | ng Dressie          | Brown        | mlee            |                |                    | Team No.: W84                |
| State: Alaska  | Region: Alaska      |              | Milepost: 5     | 72.4           |                    | ,                            |
| Latitude: 63 34 21,807   |                     | Longitude    | 149 0           | 4 46 6         | 164                | Datum: WGS84                 |
| Logbook No.: 03  | Logbook Page No.: ¿ | 712          | Picture No.:,   | W84H           | 10-16. V           | To Mas Prt. Plub             |
| SITE PARAMETERS  | TO THE WHEN SHE     |              | PONTONIA ST     | WEA # 144      | 200 300            | 160-VEG- PIT-PLOG            |
| Subregion: Maska Range   |                     |              | Landform (hill  | slope, terrac  | e, hummocks        | s, etc.): Torrace            |
| Slope (%): 3   | 3                   |              | Local relief (c |                |                    |                              |
| Pre-mapped Alaska LNG/NWI classificat  | lion: U; (1C2, 1(A  | 2            |                 |                |                    | 12.15 MANSE SIGN             |
| Are climatic/hydrologic conditions on the Yes No (if no expla  |                     | of year?     | Are "No         | mal Circun     | stances" pre       |                              |
| Are Vegetation, Soil, or Hyd   |                     | y Disturbed? |                 |                | lain in Notes)     |                              |
| Are Vegetation, Soil, or Hyd   | rology Naturally P  | roblematic?  | No              | _ (If yes, exp | olain in Notes     | .)                           |
| SUMMARY OF FINDINGS  | <b>经营业的编辑</b>       | CONTENSANT.  | 的模型的            | 清明。            | 2428               |                              |
| Hydrophytic Vegetation Present? Yes  | <u>У</u> No         | Is           | the Sampled A   | rea within a   | Wetland?           | Yes No                       |
| Hydric Soil Present? Yes   | / No                | _   w        | etiand Type: {  | PSS4/F         | su B               |                              |
| Wetland Hydrology Present? Yes   | / No                | — Ala        | iska Vegetation | Classification | on (Viereck):      | 1112,1162                    |
| Notes and Site Sketch: Please include Dicorridor. Place Somewhat & Small mounts of situal Marginal site. | shoessed/shu        | ried, 1      | perlicula       | 11.12          | he fic             | a Process in Plat            |

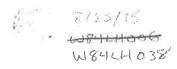
| VEGETATION (use scientific names of plants | )                   |                               |   |   |
|--|---------------------|-------------------------------|---|---|
| Tree Stratum (Plot sizes:)                 | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status                               | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: (A)  Total Number of Dominant Species Across All Strata: (B) |
| 1. Picea mariana 20.35                     | 12                  | 7                             | FACIN   | % Dominant Species that are OBL, FACW, or FAC: _/ O (A/B)   |
| 2 Pices glaves 20.25                       | 10                  |                               |   |   |
| 3.   |                     |                               |   |   |
| 4.   |                     |                               |   | Prevalence Index worksheet:   |
| Total Cover:                               |                     |                               |   | Total % Cover of: Multiply by:  |
| 50% of total cover:                        |                     | % of total cov                | er: <u>? .                                   </u> | OBL species:X 1 =   |
| Sapling/Shrub Stratum ( ? ( )              | Absolute            | Dominant                      | Indicator   | FACW species: X 2 = 1 \ 2.  |
|  | % Cover             | Species?<br>(Y/N)             | Status  | FAC species   |
| 1. Pices Mariana                           | 22                  | -/                            | FACW  | UPL species X 5 =   |
| 2. Dices of sice                           | 3                   |                               | TACU  | Column Totals: (A) (B)  |
| 3. Betala Assas                            | 10                  |                               | FAC   | PI = B/A = 2.63   |
| 4. Betula estandolosa 56                   | 7                   |                               |   |   |
| 5. Vaccinom uligenous                      | 30                  | ~/                            | FAC   |   |
| 6. 72 hododerdon tomentosa                 | 57                  |                               | FACW  |   |
| 7. Rhododendran givenlande                 | Jn 4                |                               | FAC   | .(4)  |
| 8. Salix Polatra                           | 2                   |                               | FACUL   |   |
| 9 Vaccinion vila idaen                     | 20                  | 7                             | FAC   |   |
| Total Cover:                               |                     |                               | ,   | 36  |
| 50% of total cover:                        | 49 20               | % of total cov                | er: 1916  |   |

| VEGETATION (use scientific names of plants | )                   | W. Alexandria                 |                     |   |
|--|---------------------|-------------------------------|---------------------|---|
| Herb Stratum ( I )                         | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  |
| 1. Carex bullown                           | 10                  | -/                            | FAC                 | Morphological Adaptations¹ (Provide supporting data in Notes)   |
| 4. 5.                                      | 3                   |                               | FACI                | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain) <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic. |
| 6.<br>7.<br>8.                             |                     |                               |                     | % Bare Ground<br>% Cover of Wetland Bryophytes  |
| 9.   |                     |                               |                     |   |
| Total Cover:<br>50% of total cover:        |                     | % of total cov                | er: <u>7</u>        | Notes: (If observed, list morphological adaptations below):   |

W847H038

|   | Matrix   |  | Redox Fe   | atures   |               |                   |  | 141  |   |
|---|--|--|--|--|---------------|-------------------|--|--|---|
| Depth<br>inches)  | Color (moist)  | 1%   | Color (mo  |  | 1%            | Type <sup>1</sup> | Loc <sup>2</sup>   | Texture  | Notes   |
| 7   | Osioi (inolat)   | 1  | COIOI (IIIO  |  | /0            | . , , , ,         | - 200  | TOAKUIB  | Sudvented black   |
| 7-8   | 2.5-6 2.5-11   | 603  |  |  |               |                   | -  | MK.S.L   | Constant of Mile City   |
| 1-10  | 2543/1   | 100  | 0  |  |               |                   |  | vfSai.   |   |
| 3-22  | 2.5-15/3   | 700  | 10TR S   | 15.  | 3             |                   |  | UFSAL  | Thiretropic   |
|   |  |  | 5- 51  |  | 5             |                   |  | 0.01   | Weak plat-1 below   |
|   |  |  |  |  |               |                   |  |  | MASSIVE above 10  |
|   |  |  |  |  |               |                   |  |  | ,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,,   |
| Type: C=Co  | oncentration, D=Deple  | tion, RM   | l=Reduced  | Matrix, CS   | =Cove         | ered or Co.       | ated Sand G  | rains. <sup>2</sup> Locatio  | n: PL=Pore Lining, M=Matrix.  |
| YDRIC SO  | IL INDICATORS  | 3474   | Market Mark  |  | 2             |                   |  | INDICATORS   | FOR PROBLEMATIC HYDRIC SO   |
| listosol or H   | listel (A1)  |  | Alask  | a Gleyed (/  | A13)_         | N                 |  | Alaska Color   | Change (TA4)4   |
|   | don (A2)   |  |  | a Redox (A   |               |                   |  |  | Swales (TA5)  |
| Black Histic (  |  | - M  | _  | a Gleyed P   |               |                   | ) (4)  |  | with 2.5Y Hue _ N   |
|   | ulfide (A4) N  |  |  |  |               | - 1               |  | Alaska Gleye   | d without 5Y Hue or Redder Underlyi   |
|   |  |  | 370  |  |               |                   |  | Layer N  |   |
|   | urface (A12)   | otion =  | an primare:  | Indicates of   | Lhymal -      | nd hadest-        | au and an  | Other (Explai  | n in Notes)<br>cape position must be present unless   |
| lydric Soil I   | Present (Y/N):   | Ma   | ent rai  | histic   | n for         | Pipedi            | on with  | - Mockers  | IL A. Free weder at   |
| YDROLOG   | Y PRIMARY INDICAT  | ORS (a   | ny one Indi  |  | ficient       | )                 | ECONDAR<br>Vater-stained<br>eaves (B9)   | y indicators (   | 2 or more required)  Stunted or Stressed  Plants (D1)   |
| YDROLOG   | Y PRIMARY INDICAT  or (A1) \( \text{V} \)  able (A2) \( \text{Y} \)  | Sur<br>Inui<br>(B7   | ny one Indi<br>face Soll Ci<br>ndation Visi  | cator is suff<br>racks (B6) _<br>ible on Aeri-<br>tated  | ficient<br>// | ) S               | SECONDAR<br>Vater-stained<br>eaves (B9)<br>Orainage Pat<br>Oxidized Rhi                                    | terns (B10) N  | 2 or more required) Stunted or Stressed   |
| YDROLOG<br>curface Water<br>ligh Water T  | Y PRIMARY INDICAT  or (A1) \( \sum_{\text{Y}} \)  able (A2) \( \sum_{\text{Y}} \)                                    | Sur<br>Inui<br>(B7<br>Spa<br>Cor                                 | ny one Indi<br>face Soll Ci<br>ndation Visi  | cator is sufficient in the cator is sufficient in the cator in the cat | ial Ima       | ) S               | SECONDAR<br>Vater-stained<br>eaves (B9)<br>Orainage Pat  | Y INDICATORS (  Total Control  | 2 or more required)  Stunted or Stressed Plants (D1)M  Geomorphic Position (D2)   |
| YDROLOG<br>Jurface Water<br>Ligh Water T<br>aturation (A  | Y PRIMARY INDICAT  or (A1) \( \sum_{\text{Y}} \)  able (A2) \( \sum_{\text{Y}} \)                                    | Sur Inuu (B7 Spa Cor Mai   | ny one Indi<br>face Soll Ci<br>ndation Visi<br>normal Vege<br>cave Surfa<br>I Deposits (<br>progen Sulfi<br>or (C1)  | cator is sufficacks (B6) _<br>tated tated(B15)/  | ial Ima       | y L               | Vater-stained<br>eaves (B9)<br>Prainage Pat<br>Oxidized Rhia<br>Iving Roots<br>Presence of I               | terns (B10) N<br>zospheres along<br>(C3) N<br>Reduced  | 2 or more required)  Stunted or Stressed Plants (D1)M  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic                        |
| YDROLOG<br>turface Water T<br>aturation (A<br>Vater Marks<br>ediment Dep  | Y PRIMARY INDICAT  or (A1) \( \text{\bar} \)  sable (A2) \( \text{\bar} \)  (B1) \( \text{\bar} \text{\bar} \)       | Sur Inuu<br>(B7<br>Spa<br>Cor<br>Mai                             | ny one Indi<br>face Soll Ci<br>indation Visi<br>),<br>ursely Vege<br>icave Surfa<br>I Deposits (<br>lrogen Sulfi   | cator is sufficacks (B6) tated (B15)/ de   | ial Ima       | y L               | Vater-stained<br>eaves (B9)<br>Prainage Pat<br>Oxidized Rhia<br>Iving Roots<br>Presence of I               | terns (B10)N cospheres along (C3)Reduced   | 2 or more required)  Stunted or Stressed Plants (D1)M  Geomorphic Position (D2)  Shallow Aquitard (D3)/  Microtopographic Relief (D4)/          |
| YPROLOG<br>Surface Water<br>Ligh Water T<br>aturation (A<br>Vater Marks<br>ediment Deposits   | Y PRIMARY INDICAT  or (A1)   | Sur Inui<br>(B7<br>Spa<br>Cor<br>Mai<br>Hyd<br>Odd<br>Dry<br>Wat | ny one Indi<br>face Soll Cr<br>Indation Vision Indation Vision Indiana V | cator is sufficient is sufficient in the cator is sufficient in the cator is sufficient in the cator in th | ial Ima       | y L               | Vater-stained<br>eaves (B9)<br>Prainage Pat<br>Oxidized Rhia<br>Iving Roots<br>Presence of I               | terns (B10) N<br>zospheres along<br>(C3) N<br>Reduced  | 2 or more required)  Stunted or Stressed Plants (D1)M  Geomorphic Position (D2)  Shallow Aquitard (D3)/  Microtopographic Relief (D4)/          |
| YPROLOG<br>Surface Water<br>Ligh Water T<br>aturation (A<br>Vater Marks<br>ediment Deposits   | Y PRIMARY INDICAT  or (A1) N  Table (A2) Y  (B1) N  posits (B2) N  Crust (B4) N                                      | Sur Inui<br>(B7<br>Spa<br>Cor<br>Mai<br>Hyd<br>Odd<br>Dry<br>Wat | ny one Indi<br>face Soll Cr<br>indation Visi<br>) r J<br>ursely Veger<br>cave Surfa<br>I Deposits (<br>drogen Sulfi<br>or (C1)   | cator is sufficient is sufficient in the cator is sufficient in the cator is sufficient in the cator in th | ial Ima       | y L               | Vater-stained<br>eaves (B9)<br>Prainage Pat<br>Oxidized Rhia<br>Iving Roots<br>Presence of I               | terns (B10) N<br>zospheres along<br>(C3) N<br>Reduced  | 2 or more required)  Stunted or Stressed Plants (D1)M  Geomorphic Position (D2)  Shallow Aquitard (D3)/  Microtopographic Relief (D4)/          |
| typeolog<br>turface Water T<br>aturation (A<br>Vater Marks<br>ediment Dep<br>rift Deposits  | Y PRIMARY INDICAT  or (A1) \(\)  fable (A2) \(\)  (B1) \(\)  posits (B2) \(\)  (B3) \(\)  Crust (B4) \(\)  (B5) \(\) | Sur inuu (B7 Spa Cor Mar Hyc Oddo Dry Wat Oth                    | ny one Indi<br>face Soll Ci<br>ndation Visi<br>on Property<br>face Surfa<br>I Deposits (<br>progen Sulfi<br>or (C1)  | cator is sufficacks (B6) tated (B15)/ de in Notes):  | ial Ima       | y L               | Vater-stained<br>eaves (B9)<br>Prainage Pat<br>Oxidized Rhia<br>Iving Roots<br>Presence of I               | terns (B10) N<br>zospheres along<br>(C3) N<br>Reduced  | 2 or more required)  Stunted or Stressed Plants (D1)M  Geomorphic Position (D2)  Shallow Aquitard (D3)/  Microtopographic Relief (D4)/          |
| typeolog<br>turface Water T<br>aturation (A<br>Vater Marks<br>ediment Dep<br>rift Deposits  | Y PRIMARY INDICAT  or (A1) N  Table (A2) Y  (B1) N  posits (B2) N  Crust (B4) N                                      | Sur inuu (B7 Spa Cor Mar Hyc Oddo Dry Wat Oth                    | ny one Indi<br>face Soll Cr<br>indation Visi<br>) r J<br>ursely Veger<br>cave Surfa<br>I Deposits (<br>drogen Sulfi<br>or (C1)   | cator is sufficacks (B6) tated (B15)/ de in Notes):  | ial Ima       | gery C            | Vater-stained eaves (B9) Orainage Patroxidized Rhizliving Roots Presence of Iron (C4) Salt Deposits Idea:  | terns (B10) No cospheres along (C3) No cospheres along (C5) No cospheres along | Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) Y             |
| AVEROLOG<br>Furface Water T<br>aturation (A<br>Vater Marks<br>ediment Deposits<br>ligal Mat or C<br>on Deposits<br>urface Wate            | Y PRIMARY INDICAT  or (A1) \(\)  fable (A2) \(\)  (B1) \(\)  posits (B2) \(\)  (B3) \(\)  Crust (B4) \(\)  (B5) \(\) | Sur Inuu (B7 Spac Cor Main Hyco Oddo Dry Wat Oth                 | ny one Indi face Soll Cr Indation Visit Lirsely Vegericave Surfa I Deposits ( Irogen Sulfi or (C1) Season er Table (C) er (Explain Depth (in):   | cator is sufficacks (B6) tated   (B15)/ de in Notes):  | ial Ima       | gery C            | Vater-stained eaves (B9) Orainage Patroxidized Rhizliving Roots Presence of Iron (C4) Salt Deposits Idea:  | terns (B10) N zospheres along (C3) N Reduced (C5) N  | Stunted or Stressed Plants (D1)M Geomorphic Position (D2) Shallow Aquitard (D3) /_ Microtopographic Relief (D4) /_ FAC-Neutral Test (D5) /_ N): |
| YPROLOG<br>curface Water<br>ligh Water T<br>aturation (A<br>Vater Marks<br>ediment Deposits<br>ligal Mat or Con Deposits<br>curface Water | Y PRIMARY INDICAT  or (A1)  Table (A2)Y  3)Y  (B1)  posits (B2)J  Crust (B4)  (B5)  or Present (Y/N):  pesent (Y/N): | Sur Inui<br>(B7<br>Spa<br>Cor<br>Mai<br>Hyd<br>Odd<br>Dry<br>Wat | ny one Indi face Soll Cr Indation Visit Lirsely Vegericave Surfa I Deposits ( Irogen Sulfi or (C1) Season er Table (C) er (Explain Depth (in):   | cator is sufficacks (B6)   | ial Ima       | gery C            | Vater-stainer eaves (B9) Prainage Pat Oxidized Rhiz Iving Roots Presence of Iron (C4) Salt Deposits Iotes: | terns (B10) N zospheres along (C3) N Reduced (C5) N  | Stunted or Stressed Plants (D1) Geomorphic Position (D2) Shallow Aquitard (D3) Microtopographic Relief (D4) FAC-Neutral Test (D5) Y             |

#### AQUATIC SITE ASSESSMENT DATA FORM



| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved       Forested-Deciduous-Broad-leaved         Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved       Scrub Shrub-Deciduous-Broad-leaved         Scrub Shrub-Evergreen-Broad-leaved       Scrub Shrub-Evergreen-Needle-leaved         Persistent       Aquatic Bed |
| Percent Cover (P): Tree (>5 dbh, >6m tall)       12       Sapling (<5 dbh, <6m tall)   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even   |
| Vegetation Density/Dominance (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%) Very High Density (80-100%)  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="mailto:spersion-of-cover"> &lt; 25% Scattered/Peripheral Cover</a> 26-75% Scattered or Peripheral Cover N/A   |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site 'Open Small Scattered Patches Continuous Cover   |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)   |
| Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat_X_ Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
| SOIL VARIABLES   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey   |
| HYDROLOGIC VARIABLES   |
| Inlet/Outlet Class (P): No Inlet/Outlet  |
| Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated  |
| Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created   |
| Microrelief of Wetland Surface (P): AbsentPoorly Developed (6in.)Well Developed (6-18in.)Pronounced (>18in.)   |
| Frequency of Overbank Flooding (P): No Overbank Flooding X Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval >5 yrs  |
| Degree of Outlet Restriction (P): No Outflow X Restricted Outflow Unrestricted Outflow   |
| Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading  Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits  |
| Glacial Till/Not Permeable   |
| Basin Topographic Gradient (M):       Low Gradient (<2%)       High Gradient (≥2%)       X         Evidence of Seeps and Springs (P):       No Seeps or Springs       Seeps Observed       Intermittent Spring       Perennial Spring  |
|  |
| LANDSCAPE VARIABLES (M)  |
| Wetland Juxtaposition:       Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below         Only Connected Above Connected Upstream & Downstream Unknown  |
| Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)   |
| Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized   |
| Size: Small (<10 acres) Medium (10-100 acres) Large (>100 acres)   |

Crew Chief QA/QC check:

GPS Technician QA/QC check:

| SITE DESCRIPTION  |  |                                |                |   |
|---|--|--------------------------------|----------------|---|
| Survey Type: Centerline Acces   | ss Road (explain) Other (e   | xplain) Kield Targ             | et: 15 265     | Map #: Map Date: / 29                   |
| Date: 7/6/15  | Project Name & No.: Alaska L                                       | NG 60418403                    | Feature Id:    | W84PACOI                                |
| Investigators: Bruan Stro   | na Abrague x   | Fisher                         |                | Team No.: W84                           |
| State: Alaska   | Region: Alaska   | Milepost: N//                  | off            | Row                                     |
| Latitude: 68° 77 43,  | 391 Longitu  | ude: 149028 'S8.               | 68°W           | Datum: WGS84                            |
| Logbook No.:  | Logbook Page No.: 37   | Picture No.: PWS4              | YPAU01         | NEG VEB-PITPLUS                         |
| CITE DADAMETERS   |  |                                |                |   |
| SITE PARAMETERS Subregion:  | (1) (1) (1) (1) (1) (1) (1) (1) (1) (1)                            | Landform (hillslope, terrad    | ce, hummocks   | s, etc.): Kene Terrace                  |
| Subregion: Julian Slope (%): 3 - 4 7  |  |                                |                | That to slight concave                  |
| Pre-mapped Alaska LNG/NWI classifica  | tion: 7551 FM1 = 1100  | Evidence of Wildlife Use:      |                |   |
| Are climatic/hydrologic conditions on the   | e site typical for this time of year?                              | Are "Normal Circun             | nstances" pre  | sent:                                   |
| Yes No (if no expl  | ain in Notes) Dry Cond   | Yes No Vifues ever             | (If no, exp    | plain in Notes.)  Large Sarel Pit aljae |
| Are Vegetation, Soil, or Hyd  |  | ×                              | 2.             |   |
| Are Vegetation, Soil, or Hyd  | drology Naturally Problemat  | ic? No (If yes, ex             | plain in Notes |   |
|   | No. + )  | Is the Sampled Area within     | a Wetland?     | Yes No X                                |
| Hydrophytic Vegetation Present? Yes_  | NO_N   | is the Sampled Area within     | a Wedana:      |   |
| Hydric Soil Present? Yes_   | No   | Wetland Type: U                |                | most of area is wetlanz                 |
| Wetland Hydrology Present? Yes_   | No   | Alaska Vegetation Classificati | on (Viereck):  | 11 D 1 Dreas Shub                       |
| Notes and Site Sketch: Please include I corridor. A few Scattere. Moist toward species. I dom. nated moist toward PEM  PEMI/SSIB and PEM  Teclaine  Teves etal  Bare Gravel berm. | SALRIC - mosti<br>Upling morain de<br>dra wetland at<br>MIC MIXED. | POSIT, Transitu                | LI with        | numerous non-acidic                     |
|   |  |                                |                |   |

| VEGETATION (use scientific names of plants | s)                  |                               |                     |  |
|--|---------------------|-------------------------------|---------------------|--|
| Tree Stratum (Plot sizes: 100 )            | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: 2 (A)   |
| 1.   | -                   |                               | -                   | Total Number of Dominant Species Across All Strata: (B)  |
| 2.   | 7-1                 |                               |                     | % Dominant Species that are OBL, FACW, or FAC: _SO (A/B)   |
| 3.   |                     |                               |                     |  |
| 4.   |                     |                               |                     | Prevalence Index worksheet:  |
| Total Cover                                |                     |                               |                     | Total % Cover of: Multiply by:   |
| 50% of total cover                         | : 20                | % of total cov                | er:                 | OBL species:   |
| Sapling/Shrub Stratum ( 26 )               | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species: X 2 =<br>FAC species X 3 = 46 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6 + 6  |
| 1. Vaccinium Viainosum                     | 25                  | 7                             | Fac                 | UPL species X 5 =  |
| 2. Salix reticulata                        | 7                   | N                             | Fac                 | Column Totals: 105 (A) 379 (B)   |
| 3. Drygs integritation                     | 60                  | 7                             | FACO                | PI = B/A = 3.6/  |
| 4. Arctous rober                           | T                   | D                             | Fac.                |  |
| 5. Salia articus                           | T                   | N                             | Fac                 |  |
| 6. Salix Richardsonni                      | T                   | 15                            | Fach                |  |
| 8.   |                     |                               |                     |  |
| 9.   |                     | - 7                           |                     |  |
| Total Cover:                               | 92                  |                               |                     |  |
| 50% of total cover:                        | 46 20               | % of total cove               | er: 18.4            | A THE RESIDENCE OF THE PARTY OF |
| VEGETATION (use scientific names of plants | )                   |                               | ZIANI               |  |
| Herb Stratum ( 26 )                        | Absolute            | Dominant                      | Indicator           | Hydrophytic Vegetation Indicators:   |
|  | % Cover             | Species?<br>(Y/N)             | Status              | N Dominance Test is > 50% 5 %  |
| 1. 5   1   2   2   2   2   2   2   2       |                     |                               | T                   | Prevalence Index is ≤ 3.0  |

| VEGETATION (use scientific names of plants    | )        |                   |             | A STATE OF THE PARTY OF THE PAR |
|---|----------|-------------------|-------------|--|
| Herb Stratum ( 26 )                           | Absolute | Dominant          | Indicator   | Hydrophytic Vegetation Indicators:   |
|   | % Cover  | Species?<br>(Y/N) | Status      | N Dominance Test is > 50% 5 % 5  |
| 1. Stellaria longites                         | 7        |                   | Fac         | Prevalence Index is ≤ 3.0  |
| 2. Bistorta Plumosa                           | 10       | 7                 | Fac         | Morphological Adaptations¹ (Provide supporting data in Notes)  |
| 3. Silene geaulis                             | T        |                   | URK         | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 4. Pedicularis Klandato                       | L T      | 1                 | Fac         | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless  |
| 5. Pedicularis Dederi                         | -        | )                 | 'Al-        | disturbed or problematic.  |
| 6. Carex se Single spike ,                    | T        |                   | Annual Inc. | 是一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个一个  |
| 7. Carex Vaginata Unisexual                   | 3        | 1                 | OSL         | % Bare Ground  |
| 8. Leguminosea se alpinon                     | ? T      |                   | - weepool-  | % Cover of Wetland Bryophytes  |
| 9. Saxifraga herculus                         | T        |                   | UBL         |  |
| 10. Sauserea angustifolium                    | T        |                   | Fac         | % Cover of Water  Hydrophytic Vegetation Present (Y/N):  |
| Paparer Macouali T Fact<br>Oxytopis Nigresans | . /      | % of total cov    |             | Notes: (If observed, list morphological adaptations below):  |
| Rock P  |          |                   |             |  |

Potentella biflora (week) + Moss hichen

| WETLA  | ND DETER   | RMI         | 1 -  |  |                   |  |  | Y   |  |  |  |
|--|--|-------------|--|--|-------------------|--|--|---|--|--|--|
|  | New York Control of the Control of t |             | 7/6/15   | A STATE BARRIOT  | M84 F             | 1400   | April of the State of the  | Soil Pit Required (Y/N)   |  |  |  |
| SOIL   | E DESCRIPTION: (D  |             |  | to docu  |                   | ndicator or  | confirm the absence  | A PROPERTY OF THE PROPERTY OF |  |  |  |
| SOIL PROFILI   | 200000000000000000000000000000000000000  | escribe     | Redox Features   | 10 0000  | arrient the l     | indicator or   |  |   |  |  |  |
| Depth<br>(inches)  | Matrix   | 0/          |  | %  | Type <sup>1</sup> | Loc <sup>2</sup>   | Texture  | Notes   |  |  |  |
| (Inches)   | Color (moist)  | %           | Color (moist)  | 70   | Туре              | 200  | SIL  |   |  |  |  |
| 6-3  | 10-12 2/2,   | (30)        |  |  |                   |  | 1  |   |  |  |  |
| 3-8  | 10-12 4/3  |             |  |  |                   |  | loam   |   |  |  |  |
| 8-16   | 107R3/2  |             |  | F  |                   | 1 11   | GRLoan   | 322 gravel - Till   |  |  |  |
|  |  | _           |  |  |                   |  |  | 10.1  |  |  |  |
| Tallier L  |  |             |  |  |                   |  |  | 1/2   |  |  |  |
| 1= 0.0   | centration, D=Deplet   | ion DA      | 1-Paduaad Matrix C   | S=Cov  | ared or Co        | ated Sand (  | Grains <sup>2</sup> Location:  | PL=Pore Lining, M=Matrix.   |  |  |  |
|  | The second secon | ion, Riv    | N=Reduced Matrix, C  | 3-COV  | ered or Co        | ateu Sanu C  |  | OR PROBLEMATIC HYDRIC SOILS   |  |  |  |
| To so de la company de la comp | INDICATORS   |             | Alaska Gleyed  | (A13)  | A (               | The state of the s |  | nange (TA4) <sup>4</sup>  |  |  |  |
|  | itel (A1)  |             | Alaska Redox   |  |                   | •  |  | wales (TA5)   |  |  |  |
|  | n (A2)   |             |  |  |                   | 1  |  | vith 2.5Y Hue   |  |  |  |
| Black Histic (A<br>Hydrogen Sulf   | 1  |             | Alaska Gleyed  | Pores  | (A15)             |  |  | without 5Y Hue or Redder Underlying   |  |  |  |
|  | rface (A12)  |             |  |  |                   |  | Other (Explain i   | n Notes)  |  |  |  |
| disturbed or produced from the disturbed or produced from the disturbed of the disturbed of the disturbed or produced from the disturbed from the distu | roblematic.  If color change in Not yer (if present): Type  resent (Y/N):  | es.<br>:_ N |  | Depth (i   | nches):           | ٨٨   |  | e position must be present unless   |  |  |  |
| HYDROLOGY  | PRIMARY INDICAT  | TORS (a     | any one indicator is s   | ufficien   | t) :              | SECONDAR   | RY INDICATORS (2   | or more required)   |  |  |  |
| Surface Water  | r (A1)N  | Su          | rface Soil Cracks (Be  | 5) N   |                   | Water-staine<br>Leaves (B9)  |  | Stunted or Stressed<br>Plants (D1)  |  |  |  |
| High Water Ta  | able (A2)  | Inu<br>(B   | indation Visible on A 7)   | erial Im   | agery             | Drainage Pa  | atterns (B10)  | Geomorphic Position (D2)N   |  |  |  |
| Saturation (A3   | B)   | Sp<br>Co    | arsely Vegetated ncave Surface (B8)  | N  |                   | Oxidized Rh<br>Living Roots  | nizospheres along<br>s (C3)  | Shallow Aquitard (D3)   |  |  |  |
| Water Marks  | (B1) N   | Ma          | arl Deposits (B15)   | N  |                   | Presence of ron (C4)   |  | Microtopographic<br>Relief (D4)   |  |  |  |
| Sediment Dep   | posits (B2)  |             | drogen Sulfide   |  | :                 | Salt Deposit   | ts (C5)  | FAC-Neutral Test (D5)   |  |  |  |
| Drift Deposits   | (B3)   | Day Sancan  |  |  |                   |  | Notes:   |   |  |  |  |
| Algal Mat or C   | Crust (B4)   | Ot          | her (Explain in Notes  | ):   | 2414              |  |  |   |  |  |  |
| Iron Deposits  | (B5)   |             | 0_   |  |                   |  |  |   |  |  |  |
|  |  |             | DESCRIPTION OF THE PROPERTY OF | A POPULATION OF THE PARTY OF TH |                   |  | STATE OF THE STATE |   |  |  |  |
|  | r Present (Y/N):   | )           | Depth (in): NA   |  | We                | etland Hydr  | rology Present (Y/N  | ):  |  |  |  |
| Water Table F  | Present (Y/N):   |             | Depth (in): NA   |  |                   |  |  |   |  |  |  |
| Saturation Pre<br>(includes capi   |  | _           | Depth (in): NA   | MI XCS   | EC                | · NA   |  | 日本 日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日本日  |  |  |  |
| Notes:   |  |             |  |  |                   |  |  |   |  |  |  |

## AQUATIC SITE ASSESSMENT DATA FORM

| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed   |
|--|
| Percent Cover (₱):         Tree (>5 dbh, >6m tall)         Sapling (<5 dbh, <6m tall)         Tall shrub (2-6m)         Short shrub (0.5-2m)           Dwarf shrub (<0.5m)   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| Vegetation Density/Dominance (P): Sparse (0-20%)         Low Density (20-40%)         Medium Density (40-60%)         High Density (60-           80%)         Very High Density (80-100%)         High Density (60-   |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A   |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover  |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface)  Abundant (>50% of surface)  |
| Vegetative Interspersion (P):       Low (large patches, concentric rings)       Moderate (broken irregular rings)         High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
| SOIL VARIABLES   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey   |
| willeral, Glayey   |
| HYDROLOGIC VARIABLES   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/   |
| Wetland Water Regime (P): Drier Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded   |
| Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created   |
| Microrelief of Wetland Surface (D): Absent Povoloned (Sin) Well Developed (Sin)  |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)  |
| Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 y |
| Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Peturn Interval >5 yrs Return Interval >5 yrs Restricted Outflow Unrestricted Outflow Unrestricted Outflow  |
| Return Interval 2-5 yrs   Return Interval    |
| Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval 2-5 yrs Return Interval 2-5 yrs Return Interval 2-5 yrs Percentage of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable  |
| Return Interval 2-5 yrs   Return Interval 2-5 yrs   Return Interval 2-5 yrs  |
| Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Re  |
| Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs   Return Interval >5 yrs Pi: No Outflow Restricted Outflow Unrestricted Outflow   Water pH (P): No surface water Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5)  |
| Return Interval 2-5 yrs  |
| Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval >5 yrs Return Interval >5 yrs Return Interval >5 yrs Return Interval >5 yrs Return Interval 2-5 yrs Return Interval >5 yrs Return Interval 2-5 yrs Return   |
| Return Interval 2-5 yrs  |

Page 4 of 4

#### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Fea | ature | e ID: W84PAOO1 Field Target: PA 209 Date: 7/6/15   |
|-----|-------|--|
|     |       | items not checked, please provide detailed explanation in the notes section of data form.  |
|     |       |  |
|     | 1     | Site Description   |
|     |       |  |
|     |       | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included in logbook?                              |
|     | 2.    | Vegetation   |
|     |       | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  |
|     |       | <ul> <li>☒ Vegetation names are entered legibly for all strata present?</li> <li>☒ Cover calculations are complete and correct?</li> </ul>           |
|     |       | All dominant species have been determined and recorded per strata?   |
|     |       | <ul> <li>☑ Indicator status is correct for each species?</li> <li>☑ Dominance Test and Prevalence Index have been completed?</li> </ul>              |
|     |       |  |
|     | 3.    | Soil   |
|     |       | <ul><li>Soil profile is complete?</li><li>Appropriate hydric soil indicators are marked?</li></ul>   |
|     | 4.    | Hydrology  |
|     |       | <ul> <li>Appropriate hydrology indicators are marked?</li> <li>Surface water, water table, and saturation depths are recorded if present?</li> </ul> |
|     | 5.    | Functions and Values   |
|     |       | □ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
|     | 6.    | Field Logbook  |
|     |       | ☑ Notes have been recorded at each site, including general description, sketch, and  |
|     |       | accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?   |
|     | 7     |  |
|     | 7.    | Maps   |
|     |       | <ul><li>✓ Wetland boundaries have been corrected if necessary?</li><li>✓ Maps are initialed and dated?</li></ul>                                     |

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X Abigable Ishe X
Wetland Scientist (print)

Signature / Date

X Bran Strong X Brand 7/6/15

Field Crew Chief (print)

Signature / Date

| SITE DESCRIPTION  |                                 |              |                 |               |                 |                                   |  |
|---|---------------------------------|--------------|-----------------|---------------|-----------------|-----------------------------------|--|
| Survey Type: Centerline Acce                                  | ess Road (explain)              | Other (expla | ain)            | Field Tar     | get: 15235      | Map #: 7 Map Date: 6/29           |  |
| Date: 7/8/15  | Project Name & No.:             | Alaska LNG   | 60418403        |               | Feature Id:     | W84P4002                          |  |
| Investigators: Brush St                                       | rong. Abiac                     | rule +       | Fisher          |               |                 | Team No.: W84                     |  |
| State: Alaska   | Region: Alaska                  | 1            | Milepost:       |               |                 |                                   |  |
| Latitude: 68° 46' 001.  | 88'N                            | Longitude    | : 1480          | 53124         | 1.49"4          | Datum: WGS84                      |  |
| Logbook No.:  | Logbook Page No.:               | 38           | Picture No.:    | P-W8          | 4PACO 2         | LIVEG_VEG_PIT                     |  |
| SITE PARAMETERS   |                                 |              |                 |               |                 |                                   |  |
| Subregion: Acctic Foothi                                      | 115                             |              | Landform (hil   | Islope, terra | ce, hummocks    | i, etc.): Stream terrace          |  |
| Slope (%):  |                                 |              | Local relief (d | concave, cor  | nvex, none): 2  | Lolling w/smill hummoch           |  |
| Pre-mapped Alaska LNG/NWI classifica                          | ation: PSS1 E                   | 11 (2        | Evidence of \   | Wildlife Use: | × /             | Bear seat                         |  |
| Are climatic/hydrologic conditions on the Yes No < (if no exp | e site typical for this time of |              | Are "N          |               | mstances" pres  |                                   |  |
| Are Vegetation, Soil, or Hy                                   | NI VI                           |              |                 | 1             | plain in Notes) |                                   |  |
| Are Vegetation, Soil, or Hy                                   | drology Naturally Pr            | oblematic?   | No_ >           | _ (If yes, ex | plain in Notes. | )                                 |  |
| SUMMARY OF FINDINGS   |                                 |              |                 |               |                 |                                   |  |
| Hydrophytic Vegetation Present? Yes_                          | No                              | _ ls         | the Sampled /   | Area within   | a Wetland?      | Yes No                            |  |
| Hydric Soil Present? Yes_                                     | NoX                             | w            | etland Type:    | )             |                 |                                   |  |
| Wetland Hydrology Present? Yes_                               | No_X                            | Ala          | aska Vegetatio  | n Classificat | ion (Viereck):  | 11cz SBW                          |  |
| Notes and Site Sketch: Please include I corridor.             | Directional & North Arrow,      | Centerline,  | Length of featu | re, Distance  | es from Center  | line, Photo Locations, and Survey |  |
| corridor. Well drained str                                    | ream turna.                     | Very 2       | gravelly 1      | loamt         | Sand be         | dow 19 inches, No                 |  |
| frost table observed  | C 11 breat (                    | band         | of ET           | 1500-         | an occi         | s mostly wet, pssis               |  |
| the fount and the   | FIELD 14300 (                   | west (       |                 | 17577         | They !          | s mistry wet. Pssic               |  |
| In the land selected to the second of                         | 1                               | /            | 103/            |               | /               |                                   |  |
| 1   | 2 11(2)11/42<br>2 11(2)11/42    | / 1          | 103             | /             | /               |                                   |  |
|   | good all resolution             | 151          |                 |               | /               |                                   |  |
| ) \ \   | 84 PA002                        | 06           |                 | /             |                 |                                   |  |
| 182   | Q / MA                          |              | /               | /             |                 |                                   |  |
|   | 2 / 12/                         |              | /               | /             |                 | and the second                    |  |
| Shrib Bire  | h / 11/                         | ,            | /11             |               |                 |                                   |  |
| Low   | 168                             | //           | - NO            |               |                 |                                   |  |
| /855 <sup>1</sup> /   |                                 | //           | 1/              |               |                 |                                   |  |
| 1/3/  |                                 |              | /               |               |                 |                                   |  |
| (,)   | and the same of the same        | /            |                 |               |                 |                                   |  |
| (3)   |                                 |              |                 |               |                 |                                   |  |

| VEGETATION (use scientific names of plants | 5)                  |                               |                     |  |
|--|---------------------|-------------------------------|---------------------|--|
| Tree Stratum (Plot sizes: 100 A)           | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: 4  (A)  |
| 1.   |                     |                               |                     | Total Number of Dominant Species Across All Strata: (B)  |
| 2.   |                     |                               |                     | % Dominant Species that are OBL, FACW, or FAC: (A/B)   |
| 3.   | ,                   |                               |                     |  |
| 4.   |                     |                               |                     | Prevalence Index worksheet:  |
| Total Cover                                |                     | 0% of total cov               | er:                 | Total % Cover of: Multiply by:  OBL species:X 1 =  |
| Sapling/Shrub Stratum ( 26+1)              | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species:  |
| 1. Vaccinium uliainosun                    | 20                  | 4                             | Fac                 | UPL species X 5 =  |
| 2. Empetrum nigrum                         | 2                   | 714                           | Fac                 | Column Totals: 199 (A) 396 (B)   |
| 3. Betula, nana                            | 41)                 | 7                             | Fac                 | PI = B/A = 2 66  |
| 4. Medaderdrum tomento                     | SUM 45              | 7                             | Facul               |  |
| 5. Vaccinum visidala                       | 10                  |                               | Fac                 |  |
| 6. Salix glowca                            | 15                  |                               | Face                |  |
| 7. Salve Dulchra                           | 2                   |                               | Fach                | The second secon |
| 8. Salix Echardsonni                       |                     |                               | Facls               |  |
| 9.   |                     |                               |                     |  |
| Total Cover                                |                     | 0% of total cov               | er: 27.2            |  |
| VEGETATION (use scientific names of plants | 3)                  |                               |                     |  |
| Herb Stratum (                             | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  |
| 1. Valeriana capitate                      |                     |                               | Fac                 | Prevalence Index is ≤ 3.0  |
| 2. Equisetum arvense                       | T                   |                               | Fac                 | Morphological Adaptations <sup>1</sup> (Provide supporting data in Notes)  |
| 3. Bistorta plumosa                        | 4                   | Å                             | Faco                | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 4. Arctagrostis latitolia                  | G                   | Y                             | Facul               | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless  |
| 5. Stellacia tanànoes                      | T                   |                               | Fac                 | disturbed or problematic.  |
| 6. Pag 50.                                 | T                   |                               | -                   |  |
| 7. Fronkoum Vacina                         | UM T                |                               | FACH                | % Bare Ground  |
| 8. Festuca altaica                         | 2                   |                               | Fac                 | % Cover of Wetland Bryophytes  |
| 9. Successes and                           | TILL                |                               | Fac                 | Total Cover of Bryophytes  |
| 10.  | T                   |                               | C                   | Cover of Water   |
| Total Cover                                | 13                  |                               | TAC                 | Hydrophytic Vegetation Present (Y/N):  |
| 50% of total cover                         | 1 E                 | 0% of total cov               | er: 2.6             | Notes: (If observed, list morphological adaptations below):  |
| 11. Peduculores labradorica                |                     |                               | Facu                |  |
| 12. Agragia                                | 1                   |                               |                     |  |
| in Vetagites + cilians                     | 1                   |                               |                     |  |

| COIL DECEN  |  |  | Date Fe  | A STATE OF THE PARTY OF  | Section 19 19 19 19 19 19 19 19 19 19 19 19 19 |  | Anna de la constitución de la co | Soil Pit Required  | Self-Self-         |
|---|--|--|--|--|--|--|--|--|--------------------|
| SUIL PROFIL   | LE DESCRIPTION:  | (Describe  | e to the depth needed  | to doc   | ument the                                      | indicator or o   | onfirm the absen   | ce of indicators.)   |                    |
| Depth   | Matrix   | 1.   | Redox Features   |  |  |  |  |  |                    |
| (inches)  | Color (moist)  | %  | Color (moist)  | %  | Type <sup>1</sup>                              | Loc²   | Texture  | Notes  | ed.                |
| 0-4   |  |  |  |  |  | 3  | Fibrio   |  |                    |
| 4-5.5   | 10-12 2/2  | 100  |  |  |  | 0.14   | SIL  | grander  | 11/1/25            |
| 5.5.19  | 1072 4/2   | 95   | 2.51.5/1   | 3  | D  | M  |  | 0. 1   | +2,00              |
|   | 1  |  | 10424/6  | 2  | 0  | PL   | VGLSa  | Alluvial savel =   | und Sov            |
| 19-21+  | 10/2 4/3   | 100  |  |  |  |  |  | No permatost   | 123                |
| ¹Type: C=Cc   | oncentration, D=Dep  | letion, BI   | M=Reduced Matrix, C  | S=Cove   | ered or Co                                     | ated Sand G  | rains <sup>2</sup> Location  | n: PL=Pore Lining, M=Matrix.   |                    |
|   | L INDICATORS   | iouon, ru  | Marina, C  | 0-001  | 0100 01 00                                     | atod Garia G   |  | FOR PROBLEMATIC HYDR   | IC SOILS           |
| Histosol or H   |  |  | Alaska Gleyed  | (Δ13)  | .)   |  |  | Change (TA4) <sup>4</sup>  | IO SOILC           |
|   | lon (A2)   |  | Alaska Redox   |  |  | -  |  | Swales (TA5) _ N   |                    |
| Black Histic (  |  |  | Alaska Gleyed  |  |  | 1  |  |  | The Land           |
|   |  |  | Alaska Gleyed  | rores  | (410)  |  | The state of the s | with 2.5Y Hue<br>d without 5Y Hue or Redder U  | nderlying          |
| Hydrogen Su   | Ilfide (A4)  | -  | Carlotte State of the State of  |  |  |  | Layer_ N   |  | ndenying           |
|   | urface (A12)   | -  |  |  |  |  | Other (Explain   | n in Notes) cape position must be present  | al semin           |
| <sup>4</sup> Give details<br>Restrictive La   | of color change in Nayer (if present): Typ   | otes.  |  | Depth (ii  | nches):  | 21   | -  | THE THE PARTY OF T |                    |
| Restrictive La  | of color change in Nayer (if present): Type  | pe: No   | 4  | Depth (ii  | nches):  |  | A CANADIS  |  |                    |
| Hydric Soil I<br>Notes:   | ayer (if present): Typ   | ν)   |  |  |  |  | V INDICATORS (   | 2 or more required\  |                    |
| Hydric Soil I Notes:  | ayer (if present): Typ   | ATORS (  | 4  | ufficient  | t) <u> </u>                                    | SECONDAR<br>Water-staine   | d  | 2 or more required) Stunted or Stressed  |                    |
| Hydric Soil I  Notes:  HYDROLOG  Surface Wate   | Present (Y/N):   | ATORS (  | any one indicator is s<br>urface Soil Cracks (Be<br>undation Visible on Ae   | ufficient  | t)   | SECONDAR<br>Water-staine<br>Leaves (B9)  | d  |  | (D2) _~            |
| Hydric Soil I  Notes:  HYDROLOG  Surface Wate   | Present (Y/N):  Present (Y/N): | ATORS ( Su Inin (B) Sp   | any one indicator is s<br>urface Soil Cracks (Be<br>undation Visible on Ae   | ufficient  | t) !   | SECONDAR<br>Water-stainer<br>Leaves (B9)<br>Drainage Pat<br>Oxidized Rhiz<br>Living Roots                              | terns (B10) _ \( \ldots\) zospheres along (C3) _ \( \ldots\)   | Stunted or Stressed Plants (D1)  Geomorphic Position  Shallow Aquitard (D3)  | 1                  |
| Hydric Soil I  Notes:  HYDROLOG  Surface Water  High Water T  Saturation (A  Water Marks  | Present (Y/N):  | ATORS ( Sulla Sp. Co. Ma   | any one indicator is surface Soil Cracks (Beaundation Visible on Aeronausely Vegetated oncave Surface (B8)   | erial Ima  | agery [  | SECONDAR Water-stained Leaves (B9) Drainage Pat Oxidized Rhit Living Roots Presence of Iron (C4)                       | terns (B10)<br>zospheres along<br>(C3)<br>Reduced  | Stunted or Stressed Plants (D1) Geomorphic Position  Shallow Aquitard (D3  Microtopographic Selief (D4)  | mall has           |
| Hydric Soil I  Notes:  HYDROLOG  Surface Water  High Water T  Saturation (A  Water Marks  Sediment De                                     | Present (Y/N):  Present (X/N):  Prese  | ATORS ( Sulphin Supplies of the supplies of th | any one indicator is surface Soil Cracks (Beaundation Visible on Aero)  parsely Vegetated oncave Surface (B8)  arl Deposits (B15)  ardrogen Sulfide dor (C1)   | erial Ima  | agery [  | SECONDAR Water-stained Leaves (B9) Drainage Pate Oxidized Rhit Living Roots Presence of Iron (C4) Salt Deposits        | terns (B10) _ \( \ldots\) zospheres along (C3) _ \( \ldots\)   | Stunted or Stressed Plants (D1) \( \triangle \)  Geomorphic Position  Shallow Aquitard (D3)  | mall has           |
| Hydric Soil I  Notes:  HYDROLOG  Surface Water  High Water T  Saturation (A  Water Marks  Sediment De                                     | Present (Y/N): Present (Y/N):  Present (A1)  Present (B1)  Present (B1)  Present (B2)  Present (B3)  Present (B4)  | ATORS ( St.  | any one indicator is surface Soil Cracks (Beaundation Visible on Aeronausely Vegetated oncave Surface (B8) and Deposits (B15) a | erial Ima  | agery [  | SECONDAR Water-stained Leaves (B9) Drainage Pat Oxidized Rhit Living Roots Presence of Iron (C4)                       | terns (B10)<br>zospheres along<br>(C3)<br>Reduced  | Stunted or Stressed Plants (D1) Geomorphic Position  Shallow Aquitard (D3  Microtopographic Selief (D4)  | mall has           |
| Hydric Soil I Notes:  HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or               | Present (Y/N): Present (X/N):  | ATORS ( St.  | any one indicator is surface Soil Cracks (Beaundation Visible on Ae 7)  parsely Vegetated oncave Surface (B8)  arl Deposits (B15)  drogen Sulfide dor (C1)   | erial Ima  | agery [  | SECONDAR Water-stained Leaves (B9) Drainage Pate Oxidized Rhit Living Roots Presence of Iron (C4) Salt Deposits        | terns (B10)<br>zospheres along<br>(C3)<br>Reduced  | Stunted or Stressed Plants (D1) Geomorphic Position  Shallow Aquitard (D3  Microtopographic Selief (D4)  | mall hos<br>few sm |
| Hydric Soil I  Notes:  HYDROLOG  Surface Water  High Water T  Saturation (A  Water Marks  Sediment De                                     | Present (Y/N): Present (X/N):  | ATORS ( St.  | any one indicator is surface Soil Cracks (Beaundation Visible on Aeronausely Vegetated oncave Surface (B8) and Deposits (B15) a | erial Ima  | agery [  | SECONDAR Water-stained Leaves (B9) Drainage Pate Oxidized Rhit Living Roots Presence of Iron (C4) Salt Deposits        | terns (B10)<br>zospheres along<br>(C3)<br>Reduced  | Stunted or Stressed Plants (D1) Geomorphic Position  Shallow Aquitard (D3  Microtopographic Selief (D4)  | mall hos<br>few sm |
| Hydric Soil I Notes:  HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits | Present (Y/N): Present (X/N):  | ATORS ( St.  | any one indicator is surface Soil Cracks (Beaundation Visible on Aeronausely Vegetated oncave Surface (B8) and Deposits (B15) a | wifficient s) erial Ima ) ): ,)  | agery [  | SECONDAR Water-stained Leaves (B9) Drainage Pat Oxidized Rhin. Living Roots Presence of Iron (C4) Salt Deposits Notes: | terns (B10) zospheres along (C3) Reduced   | Stunted or Stressed Plants (D1) Geomorphic Position  Shallow Aquitard (D3  Microtopographic Relief (D4) FAC-Neutral Test (D5)  | mall hos<br>few sm |
| Hydric Soil I Notes:  HYDROLOG Surface Wate High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or Iron Deposits  | Present (Y/N): Present (Y/N): Present (Y/N):  Present (B1)  Present (B1)  Present (B2)  Present (B2)  Present (B4)  Present (B4)  Present (B4)  Present (B4)   | ATORS ( St.  | any one indicator is surface Soil Cracks (Beaundation Visible on Aeronausely Vegetated oncave Surface (B8) and Deposits (B15) and Deposits (B15) and Deposits (B15) ard Posesson atter Table (C2) arther (Explain in Notes (Explain  | wifficient  in the control of the co | agery [  | SECONDAR Water-stained Leaves (B9) Drainage Pat Oxidized Rhin. Living Roots Presence of Iron (C4) Salt Deposits Notes: | terns (B10)<br>zospheres along<br>(C3)<br>Reduced  | Stunted or Stressed Plants (D1) Geomorphic Position  Shallow Aquitard (D3  Microtopographic Relief (D4) FAC-Neutral Test (D5)  | mall hos<br>few sm |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Deciduous-Broad-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed  |
| Percent Cover (P): Tree (>5 dbh, >6m tall)         Sapling (<5 dbh, <6m tall)         Tall shrub (2-6m)         Short shrub (0.5-2m)           Dwarf shrub (<0.5m)   |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even   |
| Vegetation Density/Dominance (P):         Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-80%)  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="255">25% Scattered/Peripheral Cover</a> 26-75% Scattered or Peripheral Cover N/A  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg. Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover   |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)   |
| Vegetative Interspersion (P):       Low (large patches, concentric rings)       Moderate (broken irregular rings)         High (small groupings, diverse and interspersed)       Moderate (broken irregular rings)   |
| HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
| SOIL VARIABLES   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey   |
|  |
| HYDROLOGIC VARIABLES   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Inlet/                       |
| Inlet/Outlet Class (P): No Inlet/OutletNo Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outle   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet P   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Pere   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet _  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/I         |
| Inlet/Outlet Class (P): No Inlet/OutletNo Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermitten |
| Inlet/Outlet Class (P): No Inlet/OutletNo Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet  |
| Inlet/Outlet Class (P): No Inlet/Intermittent Outlet   |
| Intervolutet Class (P): No Inlet/Outlet  |

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#### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Fe | atur  | D: <u>W84 Pac 02</u> Field Target: <u>15235</u> Date: <u>7/8/15</u>   |
|----|-------|---|
| Fo | r all | ms not checked, please provide detailed explanation in the notes section of data form.  |
|    |       |   |
|    | 1.    | Site Description  |
|    |       | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included in legbook?   |
|    | 2.    | regetation — -Gran  |
|    |       | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  Vegetation names are entered legibly for all strata present?  Cover calculations are complete and correct? |
|    |       | All dominant species have been determined and recorded per strata? Indicator status is correct for each species? Dominance Test and Prevalence Index have been completed?                                       |
|    | 3.    | soil  |
|    |       | Soil profile is complete?  Appropriate hydric soil indicators are marked?   |
|    | 4.    | lydrology   |
|    |       | Appropriate hydrology indicators are marked?  Surface water, water table, and saturation depths are recorded if present?  |
|    | 5.    | unctions and Values   |
|    |       | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?  |
|    | 6.    | ield Logbook  |
|    |       | Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?                            |
|    | 7.    | laps  |
|    |       | Wetland boundaries have been corrected if necessary?  Maps are initialed and dated?   |

#### 8. Photos

☐ Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X Abigayle Fish X Welland Scientist (print) Signature / Date

X Bran Strong

Field Crew Chief (print)

Signature / Date

| SITE DESCRIPTION   |  |                  | 140                        |                         |
|--|--|------------------|----------------------------|-------------------------|
| Survey Type: Centerline Acces  | ss Road (explain) Other  | (explain)        | Field Target: 15266        | Map #: 8 Map Date: 6/29 |
| Date: 7/8/15   | Project Name & No.: Alaska   | LNG 60418403     | Feature Id                 | : W84PA003              |
| Investigators: Bryan 5   | trong, Ahiga   | ule Tisher       |                            | Team No.: (,)84         |
| State: Alaska  | Region: Alaska   | Milepost:        | VIA off ROW                |                         |
| Latitude: 68646 40.2   | ) \ Long   | gitude: 148° 5   | 2'3936"W                   | Datum: WGS84            |
| Logbook No.:   | Logbook Page No.: 3  | Picture No.:     | P-W84PA00                  | 3-VEG-VEG_PIT-P         |
| SITE PARAMETERS  |  |                  |                            |                         |
| Subregion: Avetic Foothi   | Na   | Landform (hi     | Ilslope, terrace, hummoc   | ks, etc.): Terrace      |
| Slope (%):   |  | Local relief (   | concave, convex, none):    | Flat to slight convex   |
| Pre-mapped Alaska LNG/NWI classifica   | tion: PEM1/55113 111   | Evidence of      | Wildlife Use: None ob      | tossock-1-small         |
| Are climatic/hydrologic conditions on the Yes No (if no expl   | e site typical for this time of year<br>ain in Notes)  | ? Are "N         | lormal Circumstances" pr   | esent:                  |
| Are Vegetation, Soil, or Hyd   | drology Significantly Distu  | rbed? No_X       | (If yes, explain in Note:  | s)                      |
| Are Vegetation, Soil, or Hyd   | drology Naturally Problem  | natic? No        | (If yes, explain in Note   | s.)                     |
| SUMMARY OF FINDINGS  |  |                  |                            |                         |
| Hydrophytic Vegetation Present? Yes_   | × No   | Is the Sampled   | Area within a Wetland?     | Yes No                  |
| Hydric Soil Present? Yes_  | × No   | Wetland Type:    | PEMI/SSIB                  | TS /OMSST               |
| Wetland Hydrology Present? Yes_  | × No   | Alaska Vegetatio | n Classification (Viereck) | : 111 AZ, 11 DZ         |
| Notes and Site Sketch: Please include Decorridor.  Moist acidic to decorridor.  Moist acidic to decorridor.  Moist acidic to decorridor.  Massive, plastic s.L. 10  Seepins at interface of the seepins at interface of the seepins at interface of the seepins at interface.  PEMI/SS  MASSITEMISS  PA003 | nda, Small for<br>1285 Co-dominan<br>124/2 Alpha alpha<br>organics with s<br>18<br>02<br>175 | sock cotton      | srass domina               | ites the area with      |
| PSSVEMIB PEMIL   |  | cond             |                            |                         |
| MCZ, MAZ, OMSST TS/OMS   | 11DZ<br>55T  |                  |                            |                         |

| VEGETATION (use scientific names of plants | )                   |                               |  |  |
|--|---------------------|-------------------------------|--|--|
| Tree Stratum (Plot sizes: \\OPF)           | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC:(A)  |
| 1  |                     | -                             | No. and Address of the Local Division of the | Total Number of Dominant Species Across All Strata: (B)  |
| 2.   |                     |                               | a describer  | % Dominant Species that are OBL, FACW, or FAC: (A/B)   |
| 3.   |                     |                               |  |  |
| 4.   |                     |                               |  | Prevalence Index worksheet:  |
| Total Cover:                               |                     |                               |  | Total % Cover of: Multiply by:   |
| 50% of total cover                         | 20                  | % of total cov                | er:  | OBL species:X 1 =  |
| Sapling/Shrub Stratum ( 644)               | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  | FACW species: 98   |
| 1. Vaccinium Wiginosum                     | 16                  | 4                             | Fac  | UPL species X 5 =  |
| 2. Betula nava                             | 4                   | N                             | Fac.   | Column Totals: 117 (A) 253 (B)   |
| 3. Rhadodendrum tomer                      | Hosumb              | 1.                            | FaceW  | PI = B/A = 2.16  |
| 4. Empetamniarus                           | 40                  | N                             | Fac  | "Adar Vogadalico See un iva cotogy dello city Pass   |
| 5. Vaccinium vitis-idaen                   |                     | 4                             | Foc  |  |
| 6. Andrameda polifatio                     | 5                   | N                             | Fach   | Treatment of the second residence of the second second   |
| 7.   |                     |                               |  |  |
| 8.   | The state of        | n interior                    |  | Z selv Triespin E Somer  |
| 9.   |                     |                               |  | Western Street Comment of the Branch W   |
| Total Cover:                               | 1                   |                               |  | •  |
| 50% of total cover                         | : 11,5 20           | % of total cov                | er: 4,6  | Secretaring the second discount of the second secon |
| VEGETATION (use scientific names of plants | 3)                  |                               |  |  |
| Herb Stratum ( 26+1)                       | Absolute            | Dominant                      | Indicator  | Hydrophytic Vegetation Indicators:   |
|  | % Cover             | Species?<br>(Y/N)             | Status   | Dominance Test is > 50%  |
| 1. Pedicilaris landa                       | 2                   | N                             | Far.   | Prevalence Index is ≤ 3.0  |
| 2. Exigohogram uppingt                     | m90                 | 4                             | Facla  | Morphological Adaptations <sup>1</sup> (Provide supporting data in Notes)  |
| 3. Totieldia                               | 2                   | N                             | Fac  | Problematic Hydrophytic Vegetation¹ (Explain)  |
| 4. Cerex rotundata                         | 7                   |                               |  | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless  |
| 5. Luzul o Sp.                             | T                   |                               |  | disturbed or problematic.  |
| 6. Dedicularis 50.                         | T                   |                               | - 4  |  |
| 7.   |                     |                               |  | % Bare Ground  |
| 8.   |                     |                               |  | % Cover of Wetland Bryophytes  |
| 9.   |                     |                               |  | Total Cover of Bryophytes  |
| 10.  |                     |                               |  | Water  Hydrophytic Vegetation Present (Y/N):   |
| Total Cover                                | 94                  |                               |  | Notes: (If observed, list morphological adaptations below):  |
| 50% of total cover                         | :47 20              | % of total cov                | er: 18,8   | 110100. (II Obosivou, iist morphiological adaptations below).  |
|  |                     |                               |  |  |

| SOIL   |   |                                      | Date F  | eature II                                  | D   | Soil Pit Required (Y/N)_   |  |   |  |  |
|--|---|--------------------------------------|---|--|---|--|--|---|--|--|
| SOIL PROF  | ILE DESCRIPTION: (  | Describe                             | e to the depth needs  | ed to doc                                  | ument the                                     | indicator or   | confirm the absence  |   |  |  |
| and the same of th | epth Matrix Redo  |                                      |   | HAL DESIGN                                 |   |  | - Thusails   |   |  |  |
| (inches)   | Color (moist)   | %                                    | Color (moist)   | %  | Type <sup>1</sup>                             | Loc <sup>2</sup>   | Texture  | Notes   |  |  |
| 5-4  |   |                                      | ,   |  | ,,,   |  |  | Saturated at 2"   |  |  |
| 1-8  |   |                                      |   |  | 7   |  |  | Saturated Saturated   |  |  |
| 8-15   | 10-12-4/2   | 100                                  | 10  |  |   |  | SIL  | Massive Saturate) Alp   |  |  |
| 0 13   | 1012 112  | 100                                  | 19  | 1 19/4                                     | CALEBOAR CALL                                 | Name of the last o |  | Positive One flag - call  |  |  |
| 15-17+   | 10te4/2   | 100                                  | and the dressed of  | Later                                      | -041  |  | 8,1  | Alpha alpha positive  |  |  |
|  | - Lynnill   |                                      |   |  |   |  | 31-  |   |  |  |
| Type: C=C  | oncentration, D=Deple   | etion, RN                            | M=Reduced Matrix.   | CS=Cove                                    | ered or Coa                                   | ated Sand G  | Grains <sup>2</sup> Location   | n: PL=Pore Lining, M=Matrix.  |  |  |
|  | IL INDICATORS   |                                      |   |  |   |  |  | FOR PROBLEMATIC HYDRIC SOILS <sup>3</sup>   |  |  |
|  | listel (A1)   |                                      | Alaska Gleye  | d (A13)                                    | N   |  | The second secon | Change (TA4) <sup>4</sup> _\(\)   |  |  |
|  | don (A2)  |                                      | Alaska Redox  |  | -   |  |  | Swales (TA5)  |  |  |
| Black Histic   |   | egiel p                              | Alaska Gleye  |  |   | 1  |  | with 2.5Y Hue   |  |  |
|  |   |                                      | Alaska Gleye  | 0 1 0163                                   | (13)  |  |  | without 5Y Hue or Redder Underlying   |  |  |
|  | ulfide (A4) N   | -                                    | E-18th Market   |  | arreit.                                       | 1  | Layer_ N   |   |  |  |
|  | Surface (A12)   |                                      | Yes a second  |  |   |  | Other (Explain   | ape position must be present unless   |  |  |
|  | Present (Y/N):  |                                      | rce water   | Seepin                                     | is at .                                       | the m  | neral/orgo   | are interface and between   |  |  |
|  |   |                                      | ree water 5, Interiors  | seep.n                                     | y at .<br>peds w                              | the mi   | neral/organia  | ance interface and between 2 and alpha alpha positi   |  |  |
| Notes: 5 m   |   | fof                                  |   |  |   |  | A  | and interface and between 2 and alpha alpha positions or more required)   |  |  |
| Notes: Some  | all amounts of  | TORS (a                              |   | sufficient                                 | t) S  |  | Y INDICATORS (2  |   |  |  |
| Notes: Some  | SO. I STRUCTURAL  | TORS (a                              | any one indicator is<br>rface Soil Cracks (E  | sufficient                                 | t) S  | ECONDAR<br>Vater-staine<br>eaves (B9)  | Y INDICATORS (2  | 2 or more required) Stunted or Stressed   |  |  |
| Notes: SynthyDROLOG Surface Water 1  | EY PRIMARY INDICA  er (A1) Y - Marsia  Table (A2) NX  | TORS (a                              | any one indicator is<br>rface Soil Cracks (E  | sufficient<br>36)<br>Aerial Ima            | y Lagery D                                    | SECONDAR<br>Vater-staine<br>eaves (B9)<br>Orainage Pat   | Y INDICATORS (2<br>d<br>tterns (B10)   | Stunted or Stressed Plants (D1)   |  |  |
| HYDROLOG Surface Water 1 Saturation (A   | BY PRIMARY INDICA  er (A1) Y - Marsia  Table (A2) N X   | TORS (a                              | rface Soil Cracks (Eundation Visible on A   | sufficient<br>36)                          | y V L agery D C L                             | ECONDAR<br>Vater-staine<br>eaves (B9)<br>Orainage Pat<br>Oxidized Rhiz   | Y INDICATORS (2  d tterns (B10) zospheres along (C3) Reduced   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)   |  |  |
| HYDROLOG Surface Water High Water 1 Saturation (A  | BY PRIMARY INDICA  er (A1) Y - Marsia  Table (A2) N X   | TORS (a Su Inu (B5 Co Ma             | rface Soil Cracks (Eundation Visible on Annual Programme | sufficient<br>36)                          | t) S  V L agery D  C L                        | Vater-staine<br>eaves (B9)<br>Orainage Pat<br>Oxidized Rhia<br>iving Roots   | Y INDICATORS (2 d tterns (B10) zospheres along (C3) Reduced  | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic small +vsse  |  |  |
| HYDROLOG Surface Water High Water T Saturation (A Water Marks  | er (A1) Y - Marja  Table (A2) N X  (B1) N  Exposits (B2) N  | TORS (a Su Inu (B7 Co Ma Hy Od       | any one indicator is  rface Soil Cracks (E  indation Visible on A  7) arsely Vegetated incave Surface (B8)  irl Deposits (B15)  drogen Sulfide  | sufficient<br>36)                          | agery D L S S S S S S S S S S S S S S S S S S | Vater-staine<br>eaves (B9)<br>Prainage Pat<br>Dividized Rhia<br>iving Roots<br>Presence of I<br>ron (C4)   | Y INDICATORS (2  d  tterns (B10)  zospheres along (C3)  Reduced  (C5)  (S)   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic small + 4550 Relief (D4) and homme  FAC-Neutral Test (D5)                                  |  |  |
| HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De  | er (A1) Y - Marja  Table (A2) N X  (B1) N  Exposits (B2) N  | TORS (a Inu (B7 Co  Ma Hy Od  Dry Wa | any one indicator is  rface Soil Cracks (E  indation Visible on A  7) arsely Vegetated incave Surface (B8)  irl Deposits (B15)  drogen Sulfide lor (C1) y-Season  | sufficient  36) _ N  Aerial Ima  N         | agery D L S S S S S S S S S S S S S S S S S S | Vater-staine<br>eaves (B9)<br>Prainage Pat<br>Dividized Rhia<br>iving Roots<br>Presence of I<br>ron (C4)   | Y INDICATORS (2  d  tterns (B10)  zospheres along (C3)  Reduced  (C5)  (S)   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic    + 4550 Relief (D4)    FAC-Neutral Test (D5)   |  |  |
| HYDROLOG Surface Water High Water To Saturation (A) Water Marks Sediment De Drift Deposit Algal Mat or   | EY PRIMARY INDICA  er (A1) Y - Marsia  Table (A2) N X  (B1) N  eposits (B2) N  s (B3) N   | TORS (a Inu (B7 Co  Ma Hy Od  Dry Wa | any one indicator is  rface Soil Cracks (E  indation Visible on A  7) arsely Vegetated incave Surface (B8)  ind Deposits (B15)  drogen Sulfide lor (C1) y-Season atter Table (C2)   | sufficient  36) _ N  Aerial Ima  N         | agery D L S S S S S S S S S S S S S S S S S S | Vater-staine<br>eaves (B9)<br>Prainage Pat<br>Dividized Rhia<br>iving Roots<br>Presence of I<br>ron (C4)   | Y INDICATORS (2  d  tterns (B10)  zospheres along (C3)  Reduced  (C5)  (S)   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic small + 4550 Relief (D4) and homme  FAC-Neutral Test (D5)                                  |  |  |
| HYDROLOG Surface Water High Water To Saturation (A) Water Marks Sediment De Drift Deposite Algal Mat or  | EY PRIMARY INDICA  er (A1) Y - Marsia  Table (A2) N X  (B1) N  eposits (B2) N  Crust (B4) N   | TORS (a Su Inu (B7 Sp Co Od Dr) Wa   | any one indicator is  rface Soil Cracks (E  indation Visible on A  7) arsely Vegetated incave Surface (B8)  ind Deposits (B15)  drogen Sulfide lor (C1) y-Season atter Table (C2)   | sufficient  B6) _ N  Aerial Ima  N  S5): 7 | agery D L S S S S S S S S S S S S S S S S S S | Vater-staine<br>eaves (B9)<br>Prainage Pat<br>Dividized Rhia<br>iving Roots<br>Presence of I<br>ron (C4)   | Y INDICATORS (2  d  tterns (B10)  zospheres along (C3)  Reduced  (C5)  (S)   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic small + 4550 Relief (D4) and homme  FAC-Neutral Test (D5)                                  |  |  |
| HYDROLOG Surface Water High Water To Saturation (A) Water Marks Sediment De Drift Deposite Algal Mat or Iron Deposite Surface Water  | A3)  Exposits (B2)  Crust (B4)  Banosats of the control of t | TORS (a Su Inu (B7 Sp Co Od Dr) Wa   | any one indicator is  rface Soil Cracks (E  undation Visible on A  7)   | sufficient  Aerial Ima  N  s): 7           | agery D                                       | Vater-staine eaves (B9) Orainage Pat Oxidized Rhiziving Roots Oron (C4) Calt Deposits Idotes:  | Y INDICATORS (2  d  tterns (B10)  zospheres along (C3)  Reduced  (C5)  (S)   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic small +vssa Relief (D4) and homme  FAC-Neutral Test (D5)  FAC-Neutral Test (D5)  Therefore |  |  |
| HYDROLOG Surface Wat High Water 1 Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposits Surface Wat Water Table Saturation P  | A3)   | TORS (a Su Inu (B7 Sp Co Od Dr) Wa   | any one indicator is  rface Soil Cracks (E  Indation Visible on A  7)   | sufficient  Aerial Ima  N  s): 7           | agery D L S N Wet                             | Vater-staine eaves (B9) Orainage Pat Oxidized Rhiziving Roots Oron (C4) Calt Deposits Idotes:  | Y INDICATORS (2  d  tterns (B10)  zospheres along (C3)  Reduced  Y  S (C5)  S solid an increase of the color of th                      | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic small +vssa Relief (D4) and homme  FAC-Neutral Test (D5)  FAC-Neutral Test (D5)  Therefore |  |  |

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P):       Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved         Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved         Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent Aquatic Bed  |
| Percent Cover (P): Tree (>5 dbh, >6m tall) Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Short shrub (0.5-2m) Short shrub (<0.5m) Tall shrub (<0.5m) Short shrub (<0.5 |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even   |
| Vegetation Density/Dominance (P):         Sparse (0-20%)         Low Density (20-40%)         Medium Density (40-60%)         High Density (60-80%)           80%)         Very High Density (80-100%)         N   |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water  |

Page 4 of 4

#### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Featu  | re ID: <u>W84 PA 003</u> Field Target: <u>15266</u> Date: <u>7/8/15</u>  |
|--------|--|
| For al | l items not checked, please provide detailed explanation in the notes section of data form.  |
|        |  |
| 4      | Cita December 1  |
| 1.     | Site Description   |
|        | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included in logbook?                                  |
| 2.     | Vegetation   |
|        | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  |
|        | ∇ Vegetation names are entered legibly for all strata present?     ∇ Sylvar polyulations are entered legibly for all strata present?                     |
|        | <ul> <li>☑ Cover calculations are complete and correct?</li> <li>☑ All dominant species have been determined and recorded per strata?</li> </ul>         |
|        | <ul><li>Indicator status is correct for each species?</li><li>Dominance Test and Prevalence Index have been completed?</li></ul>                         |
|        |  |
| 3.     | Soil   |
|        | <ul><li>☑ Soil profile is complete?</li><li>☑ Appropriate hydric soil indicators are marked?</li></ul>   |
| 4.     | Hydrology  |
|        | <ul> <li>☑ Appropriate hydrology indicators are marked?</li> <li>☑ Surface water, water table, and saturation depths are recorded if present?</li> </ul> |
| 5.     | Functions and Values   |
|        | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6.     | Field Logbook  |
|        | ☑ Notes have been recorded at each site, including general description, sketch, and  |
|        | accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?   |
| 7.     | Maps   |
|        | ☑ Wetland boundaries have been corrected if necessary?   |

Maps are initialed and dated?

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

| Wetland Scientist (print) | Signatu     | re / Date | CYCLES Y  |
|---------------------------|-------------|-----------|-----------|
| X Apraga                  | le Fisher X | aller     | en 7/9/15 |

Field Crew Chief (print)

X Start 7/a/15

Signature / Date

| SITE DESCRIPTION  |   |                                       | fac.                  | (1)                                |                  |               |  |  |
|---|---|---------------------------------------|-----------------------|------------------------------------|------------------|---------------|--|--|
| Survey Type: Centerline Acces   | ss Road (explain)                       | Other (expla                          | V 1                   | Field Targ                         | et: 19767        | Map #:        | Map Date: 6/29   |  |
| Date: 7/9/15  | Project Name & No.:                     | Alaska LNG                            | 60418403              | 5311                               | : W84PAOO4       |               |  |  |
| Investigators: Brunn St   | rona, Apiaa                             | ule Fi                                | Fisher                |                                    |                  | Team No.: W84 |  |  |
| State: Alaska   | Region: Alaska                          | J                                     | Milepost: N/A OFF ROW |                                    |                  |               |  |  |
| Latitude: 69068 44,00   | 11/1                                    | Longitude                             | ude: 1480491494611    |                                    |                  | Datum: WGS84  |  |  |
| Logbook No.: 0  | Logbook Page No.:                       | 38                                    | Picture No.:          | PW81                               | 1PANO4           | WEG_          | VEG_PIT_PIA  |  |
| SITE PARAMETERS   |   |                                       |                       |                                    |                  |               |  |  |
| Subregion: Antic Foothills  | 1                                       | 13                                    | Landform (hill        | slope, terrac                      | e, hummocks      | , etc.):      | essace   |  |
| Slope (%): 1 - 2  |   | 114600                                | Local relief (c       | THE RESERVE OF THE PERSON NAMED IN |                  |               | me undutations an  |  |
| Pre-mapped Alaska LNG/NWI classifica  | tion: 0551/EMI                          | 3.11/2.11/                            | Evidence of V         | Vildlife Use:                      | Ground sq.       | -             | man hummocles  |  |
| Are climatic/hydrologic conditions on the Yes No (if no expl  | site typical for this time              | of year?                              | Are "No               | rmal Circum                        | stances" pres    | sent:         | Just on Arth   |  |
| Are Vegetation, Soil, or Hyd  | ,                                       | ly Disturbed?                         | 1                     | (If yes, eyn                       | (If no, exp      | lain in Note  | s.)  |  |
| Are Vegetation, Soil, or Hyd  |   | Problematic?                          | No_X                  |                                    | lain in Notes.   | 1             |  |  |
| SUMMARY OF FINDINGS   |   |                                       |                       | _ (11 ) 00; 0xp                    | Many III Protest |               |  |  |
| Hydrophytic Vegetation Present? Yes_  | No_X                                    | ls                                    | the Sampled A         | rea within a                       | Wetland?         | Yes           | NoX  |  |
| Hydric Soil Present? Yes_   | NoX_                                    | _ w                                   | etland Type:          | )                                  | open lo          | س سااه        | ow/dryas tond  |  |
| Wetland Hydrology Present? Yes_   | No_X                                    | Ala                                   | aska Vegetation       | Classification                     | on (Viereck):    | 11 CZ         | 11 01  |  |
| Notes and Site Sketch: Please include D<br>corridor. Well drained s-<br>Low chroma parent<br>Duard Dreas Lindra.<br>decressions appear to | tream terracionatorial co<br>No permate | e. No o<br>lors - o                   | river silt<br>pserved | of sai                             | turation. Open   | Low W         | sillow und   |  |
| Hwy   |   |                                       |                       |                                    |                  |               | 2.000<br>7.01 - 1.02 7 1<br>3 - 1.03 - 1                                       |  |
| Savel<br>Toud   |   | \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ | No.                   |                                    |                  |               | 11.67 1.27 57 8<br>27 4.1 37 57 8<br>28 17 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 5 |  |
| : protes sociation augments   | small seasonally wet Lepre<br>PEMISSIC  |                                       | 2,1101                | A 8                                | MANUAL INC.      | 2200          |  |  |

| VEGETATION (use scientific names of plants  | 3)                  |                               |                     |  |
|---|---------------------|-------------------------------|---------------------|--|
| Tree Stratum (Plot sizes: 1000+)  | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC:   |
| 1.  |                     |                               | M                   | % Dominant Species that are OBL, FACW, or FAC: 333% (A   |
|   |                     |                               | ubedige:            | A STATE OF THE STA |
|   |                     | 1                             |                     | Prevalence Index worksheet:  |
| Total Cover   |                     | _                             | 100                 | Total % Cover of: Multiply by:   |
| 50% of total cover  |                     | 0% of total cov               | /er:                | OBL species: X 1 =   |
| Sapling/Shrub Stratum (   | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator           | FACW species: $13 \times 2 = 26$ FAC species $37 \times 3 = 100$ FACU species $72 \times 4 = 26$   |
| · Arctous ruber   | 12                  | MICH BA                       | For                 | UPL species X5=  |
| Dryas integritalia  | 70                  | Y                             | fact                | Column Totals: 121 (A) 726 (B) PI = B/A = 3.9  |
| · Salix glavea<br>· Salix richardsonni  | 10                  |                               | Fac W               | Between I Fac  |
| Solix pulchra   | T                   |                               | Face                | Rhododeodram tomenfosum TE   |
| Disdandran Capponi  | um T                | ( Serior II                   | Fac                 | Empetrum Magrum I For<br>Aretorneda polifolia  |
| Total Cover   | 3.1.1               |                               |                     | T Fac  |
| 50% of total cover  | :_ <u>57</u> 20     | 0% of total cov               | /er:                | Day of the first a some solution is used to the first solution and t |
| /EGETATION (use scientific names of plants  | ;)                  |                               |                     |  |
| erb Stratum ( SFT)  | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  |
| · Cacciona totaciona  | )                   | (Y/N)                         | Kall                | Prevalence Index is ≤ 3.0  |
| Envisetum varienciatum  | 1                   |                               | Fach                | Morphological Adaptations <sup>1</sup> (Provide supporting data in Notes)  |
| · Pole manium acutitaria  | T                   | Le est                        | Fox                 | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| Pedicularis Janata  |                     |                               | Fac                 | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless  |
| · Festicaaltaica  | 3                   | 4                             | Fac                 | disturbed or problematic.  |
| Anemone parviflora  | 1                   |                               | Facl                |  |
| Totieldia pusilla   | 1                   |                               | For                 | % Bare Ground  |
| · Purda asor, flora   | 7                   |                               | FacU                | % Cover of Wetland Bryophytes  |
| · Lagotis slaves  | T                   |                               | N.                  | Total Cover of Bryophytes 72 - Moss  |
|   |                     |                               | 1/3/1               |  |
| Laret Voer, nove  |                     |                               | 0B L                | Hydrophytic Vegetation Present (Y/N):  |
| Total Cover   | 110                 | 0% of total cov               | ver: \ . 8          | Notes: (If observed, list morphological adaptations below):  |
| Total Cover   | 110                 | 0% of total cov               |                     | There is a second to the secon |
| Total Cover<br>Suxifrage hirculus 150% of total cover<br>Sousavcen angustifolism<br>Soi blago Sp.<br>Pedicularis Capitale | 110                 | 0% of total cov               | ver: \ . 8          | There is a second to the secon |
| Saxifrage hireulus 150% of total cover  | 110                 | 0% of total cov               | ver: 1.8<br>Fac     | There is a second to the secon |

| SOIL  |  |  | Date F   | eature II          | D  |  |   | Soil Pit Required (V/N)   |
|---|--|--|--|--------------------|--|--|---|---|
|   | LE DESCRIPTION:  | (Describe                              | ACCOUNT OF THE PARTY OF THE PAR |                    | The same of the sa | indicator or   | confirm the absent  | Soil Pit Required (Y/N)   |
| Depth   | Matrix   | (2000)                                 | Redox Features   | a to door          | differit tife  | indicator or   | COMMITTURE ADSERT   | De of malcalors.)   |
| (inches)  | Color (moist)  | %                                      | Color (moist)  | %                  | Type <sup>1</sup>  | Loc <sup>2</sup>   | Texture   | Notes   |
| 9-4   |  |  | Color (molet)  | 70                 | Турс   | 200  | Fibric  | Notes   |
| 1-6   | 10-13-2/2  | 100                                    | The Assets   |                    | All Indiana  |  | SIL   | The second second (50 second fire of  |
| 5-10  | 114/0  | 100                                    |  |                    |  |  |   | 1   |
| 2-10  | NAIO   | 000                                    |  | T Paul             | THE WAY  | a SG to Unit   | 5,2   | Surfaces - parent material  |
| 0-22  | 544/1  | 100                                    | - Company (Company Company Com |                    |  |  | 11.11   | River gravel/send   |
| 0 2 -   | 12000  | 100                                    |  |                    |  |  | NORLSE  | 100er 3/2ver/ 3222  |
| Taren   | State -  | 3 1000                                 | television and the second  |                    |  |  | - C 1501 (5   | Charles on the amount to accompany  |
| Type: C=Co  | oncentration, D=Depl   | letion, RM                             | M=Reduced Matrix.  | CS=Cove            | ered or Coa  | ated Sand (  | Grains. <sup>2</sup> Location                                 | n: PL=Pore Lining, M=Matrix.  |
|   | L INDICATORS   |  |  |                    |  |  |   | FOR PROBLEMATIC HYDRIC SOILS <sup>3</sup>   |
| listosol or H   | istel (A1)   |  | Alaska Gleye   | 1 (A13)            |  |  |   | Change (TA4) <sup>4</sup> N   |
| The second second second  | lon (A2)   |  | Alaska Redox   |                    |  | 100  |   | Swales (TA5) N  |
| Black Histic (  |  | 8/16/10                                | Alaska Gleyer  | A Maria San        |  | SINCE.   | C. C                      | with 2.5Y Hue   |
|   |  |  | Alaska Gleyer  | roles              | (A15)  |  |   | with 2.51 Hue or Redder Underlying  |
| Hydrogen Su   | lfide (A4) N   | vi al                                  |  |                    |  |  | Layer_ N  | - · · · · · · · · · · · · · · · · · · ·   |
|   | urface (A12) _/  |  |  |                    |  |  | Other (Explain  |   |
| One indicate  | or of hydrophytic vego<br>problematic.   | etation, o                             | ne primary indicator   | of wetla           | nd hydrolo   | gy, and an   | appropriate landsc  | ape position must be present unless   |
| lydric Soil I   |  | N                                      | how ch   |                    | Pare   |  |   | first table in 24"  |
| Hydric Soil I   | Present (Y/N):   | N                                      | how ch   | roma               | Pare   |  |   |   |
| Hydric Soil I<br>Notes: 心。  | Present (Y/N):   | N. No                                  | how che positive re  | roma               | pare n + a   | drhe a   | Irha. No  |   |
| Hydric Soil I<br>Notes: 心。<br>HYDROLOG  | Present (Y/N):   | No.                                    | how che positive re  | cetto              | Pare   | drhe a   | Y INDICATORS (2   | frost table in 24"  |
| Hydric Soil I Notes: No. HYDROLOG   | Present (Y/N):  Saturation  Y PRIMARY INDICA   | No. No.                                | Positive reconny one indicator is sufface Soil Cracks (Bundation Visible on A  | ections sufficient | Pare   | ECONDAR<br>Vater-staine<br>eaves (B9)  | Y INDICATORS (2   | Prost table in 24"  2 or more required)  Stunted or Stressed  |
| Hydric Soil I Notes: No. HYDROLOG Surface Water High Water T  | Present (Y/N):  Saturation  Y PRIMARY INDICA  Pr (A1)  | Sur Inu (B7                            | Positive reconny one indicator is sufface Soil Cracks (Bundation Visible on A  | sufficient         | Pare   | ECONDAR<br>Vater-staine<br>eaves (B9)  | Y INDICATORS (2d  | Prost table in 24"  2 or more required)  Stunted or Stressed Plants (D1)  |
| Hydric Soil I   | Y PRIMARY INDICA  or (A1)  Table (A2)  3)  | Sur Inu (B7 Spa Cor                    | positive reconnection on a resely Vegetated  | sufficient         | Pare  Pare  Dispersion L  Agenty D  CL  P  | ECONDAR<br>Vater-staine<br>eaves (B9)<br>varianage Par   | Y INDICATORS (2 d tterns (B10)  zospheres along (C3)  Reduced | Prost table in 24"  2 or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  |
| Hydric Soil I Notes: No. HYDROLOG Surface Water High Water T Saturation (A  | Y PRIMARY INDICA  or (A1)  Table (A2)  3)  | Sur Inu (B7 Spa Cor Mai                | positive recommendation visible on An arsely Vegetated incave Surface (B8)   | sufficient         | Pare   | ECONDAR<br>Vater-staine<br>eaves (B9)<br>varinage Par<br>exidized Rhi<br>iving Roots<br>resence of   | tterns (B10) zospheres along (C3)                             | Prost table in 24"  2 or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic               |
| Hydric Soil I<br>Notes: No.  HYDROLOG Surface Water High Water T Saturation (A Water Marks  | Present (Y/N):  Saturation  Y PRIMARY INDICA  or (A1)  Table (A2)  (B1)  posits (B2)                   | Sur Inu (B7 Spa Cor Mai                | ri Deposits (B15)  | sufficient         | Pare  Pare  Description of the second of the | ECONDAR<br>Vater-staine<br>eaves (B9)<br>Prainage Par<br>exidized Rhi<br>iving Roots<br>resence of<br>on (C4)  | tterns (B10) zospheres along (C3)                             | Prost table in 24"  2 or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)   |
| Hydric Soil I Notes: No. HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De  | Present (Y/N):  Saturation  Y PRIMARY INDICA  or (A1)  fable (A2)  (B1)  posits (B2)  s (B3)           | Sur Inu (B7 Spa Cor Mai Hyc Odd        | Iny one indicator is stated and the  | sufficient         | Pare  Pare  Description of the second of the | ECONDAR Vater-staine eaves (B9) Prainage Par exidized Rhi | tterns (B10) zospheres along (C3)                             | Prost table in 24"  2 or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)   |
| Hydric Soil I Notes: No. HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits   | Present (Y/N):  Saturation  Y PRIMARY INDICA  er (A1)  fable (A2)  (B1)  posits (B2)  Crust (B4)       | Sur Inu (B7 Spa Cor Mai Hyc Odd        | rogen Sulfide or (C1)  | sufficient         | Pare  Pare  Description of the second of the | ECONDAR Vater-staine eaves (B9) Prainage Par exidized Rhi | tterns (B10) zospheres along (C3)                             | Prost table in 24"  2 or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)   |
| Hydric Soil I Notes: No. HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or (1) ron Deposits   | Present (Y/N):  Saturation  Y PRIMARY INDICA  er (A1)  fable (A2)  (B1)  posits (B2)  Crust (B4)       | Sur Inu (B7 Spa Cor Mai Hyc Odd        | Iny one indicator is stated on the control of the c | sufficient         | Pare  Salah  Pare  | ECONDAR Vater-staine eaves (B9) Prainage Par exidized Rhi | tterns (B10) zospheres along (C3) Reduced                     | Prost table in 24"  2 or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)   |
| Hydric Soil I Notes: No. HYDROLOG Surface Water High Water T Saturation (A Water Marks Sediment De Drift Deposits Algal Mat or (I I and I | Present (Y/N):  Saturation  Y PRIMARY INDICA  or (A1)  Table (A2)  (B1)  posits (B2)  Crust (B4)  (B5) | Sur Inu (B7 Spa Cor Mai Hyc Odd Dry Wa | rogen Sulfide or (C1)  | sufficient         | Pare  Pare  D  L  Agery  D  L  N   | ECONDAR Vater-staine eaves (B9) Prainage Par exidized Rhi iving Roots resence of on (C4) alt Deposits  | tterns (B10) zospheres along (C3) Reduced                     | Prost table in 21"  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5) |

PADOY

# AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, I  | M= Matrix   |
|--|---|
| Forested-Evergreen-Needle-leaved   | acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-  |
| Percent Cover (P): Tree (>5 dbh, >6m tall)_<br>Dwarf shrub (<0.5m) Tall herb (≥1   | Sapling (<5 dbh, <6m tall) Tall shrub (2-6m) Short shrub (0.5-2m) Moss-Lichen Floating Submerged  |
| Number of Wetland Types (M):   | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| Vegetation Density/Dominance (P): Sparse<br>80%) Very High Density (80-100%)   | e (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-  |
| Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scatter   | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A   |
| Plant Species Diversity (P): Low (< 5 plant  | species) Medium (5-25 species) High (>25)   |
| Presence of Islands (M): Absent (none) _   | One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): Open Small Scattered Patches_  | No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site   |
| Dead Woody Material (P): Low Abundance<br>Abundant (>50% of surface)   | (0-25% of surface) Moderately Abundant (25-50% of surface)  |
| Vegetative Interspersion (P): Low (large<br>High (small groupings, diverse and interspers  | e patches, concentric rings) Moderate (broken irregular rings)  |
| HGM Class (P): Slope Flat  | Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
|  |   |
| SOIL VARIABLES   |   |
| Soil Factors (P): Soil LackingMineral: Gravelly Mineral: Sandy_  | Histosol:Fibric Histosol:Hemic Histosol: Sapric<br>Mineral: Silty Mineral: Clayey   |
| HYDROLOGIC VARIABLES   |   |
| Inlet/Outlet Class (P): No Inlet/Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial I  | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No t Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennia |
| Wetland Water Regime (P): Drier: Sea:<br>Wet: Perm. Flooded, Intermittently Exposed,   | sonally Flooded, Temporarily Flooded, Saturated Semiperm. Flooded   |
| Evidence of Sedimentation (P): No Evider Created_  | nce Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment   |
| Microrelief of Wetland Surface (P): Absent   | Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)  |
| Frequency of Overbank Flooding (P): No C<br>Return Interval >5 yrs   | Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs   |
| Degree of Outlet Restriction (P): No Outfloo   | w Restricted Outflow Unrestricted Outflow   |
|  |   |
|  | Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) pH Reading  |
|  | Circumneutral (5.5-7.4) Alkaline (>7.4) Acid (<5.5) PH Reading  (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Deposits  |
| Surficial Geologic Deposit Under Wetland<br>Glacial Till/Not Permeable   | (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits<br>Gradient (<2%) High Gradient (≥2%)   |
| Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Se  | (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits<br>Gradient (<2%) High Gradient (≥2%)   |
| Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Se  LANDSCAPE VARIABLES (M)   | (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits  Gradient (<2%) High Gradient (≥2%) eps or Springs Seeps Observed Intermittent Spring Perennial Spring  |
| Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Se  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolat Only Connected Above Connected   | (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits  Gradient (<2%) High Gradient (≥2%) eps or Springs Seeps Observed Intermittent Spring Perennial Spring  |
| Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Se  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolat Only Connected Above Connecte  Wetland Land Use: High Intensity (i.e., | (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits  Gradient (<2%) High Gradient (≥2%) eps or Springs Seeps Observed Intermittent Spring Perennial Spring  ed Wetlands within 400m, Not Connected Only Connected Below ed Upstream & Downstream Unknown  |
| Surficial Geologic Deposit Under Wetland Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low Evidence of Seeps and Springs (P): No Se  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolate Only Connected Above Connected  | (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits  Gradient (<2%) High Gradient (≥2%) eps or Springs Seeps Observed Intermittent Spring Perennial Spring  ed Wetlands within 400m, Not Connected Only Connected Below ed Upstream & Downstream Unknown  |

Page 4 of 4

#### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Featur | re ID: <u>W 84 P A 004</u> Field Target: <u>\ \ \ 267</u> Date: <u>\ 7/9/2015</u>  |
|--------|--|
|        | items not checked, please provide detailed explanation in the notes section of data form.  |
|        |  |
|        |  |
| 1.     | Site Description   |
|        | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included in logbook?                              |
| 2.     | Vegetation   |
|        | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  |
|        | <ul> <li>✓ Vegetation names are entered legibly for all strata present?</li> <li>✓ Cover calculations are complete and correct?</li> </ul>           |
|        | All dominant species have been determined and recorded per strata?   |
|        | <ul> <li>☑ Indicator status is correct for each species?</li> <li>☑ Dominance Test and Prevalence Index have been completed?</li> </ul>              |
|        |  |
| 3.     | Soil   |
|        | <ul><li>Soil profile is complete?</li><li>Appropriate hydric soil indicators are marked?</li></ul>   |
| 4.     | Hydrology  |
|        | <ul> <li>Appropriate hydrology indicators are marked?</li> <li>Surface water, water table, and saturation depths are recorded if present?</li> </ul> |
| 5.     | Functions and Values   |
|        | ☑ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6.     | Field Logbook  |
|        | □ Notes have been recorded at each site, including general description, sketch, and  |
|        | accuracy of pre-mapped wetland boundary as appropriate?  ☑ Each logbook page is initialed and dated?   |
| 7.     | Maps   |
|        | <ul> <li>✓ Wetland boundaries have been corrected if necessary?</li> <li>✓ Maps are initialed and dated?</li> </ul>                                  |

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

| /1 |
|----|

Field Crew Chief (print)

X

Signature / Date

| SITE DESCRIPTION  |   |                               |                                |   |                             |  |
|---|---|-------------------------------|--------------------------------|---|-----------------------------|--|
| Survey Type: Centerline Acce  | ss Road (explain)   | Other (expla                  | un)                            | Field Targe   | et: 15367                   | Map #: 0 Map Date: 6/29  |
| Date: 7/9/15  | Project Name & No.:   | Alaska LNG                    | 60418403                       |   | Feature Id:                 | W84PAOD5   |
| Investigators: Bryon Stra   | ong, Aloia an   | Q Fis                         | her                            |   |                             | Team No.: W84  |
| State: Alaska   | Region: Alaska  | )                             | Milepost:                      | 31.6  |                             |  |
| Latitude: 68°37 12.93   | \\\\  | Longitude                     | 149°23                         | 34.12   | W                           | Datum: WGS84   |
| Logbook No.: 3/   | Logbook Page No.:   | 38                            | Picture No.:                   | P-W841  | 9A005.                      | VEG_VEG_PIT_PL   |
| SITE PARAMETERS   |   |                               |                                |   |                             |  |
| Subregion: Arctic Foothill  | 5   |                               | Landform (hil                  | Islope, terrace                                       | e, hummocks                 | s, etc.): Shoulder slope   |
| Slope (%): 3-4/   |   | Top coupling                  | Local relief (c                | concave, conv   | ex, none): S                | lightly convex - mode<br>immocks w/small tissock                         |
| Pre-mapped Alaska LNG/NWI classifica  | ition: PSS1/EMIT  | 3 11:03                       | Evidence of \                  | Wildlife Use:   | Vo h                        | unnocks w/ small tossock   |
| Are climatic/hydrologic conditions on the Yes No X (if no expl  |   |                               | 100151                         | ormal Circum  |                             |  |
| Are Vegetation, Soil, or Hyd  | 0 1 6   | y Disturbed?                  |                                | (If yes, expl   |                             | olain in Notes.)   |
| Are Vegetation, Soil, or Hyd  | All - A   |                               |                                | _ (If yes, expl                                       |                             |  |
| SUMMARY OF FINDINGS   |   |                               |                                |   |                             |  |
| Hydrophytic Vegetation Present? Yes_  | No  | Is t                          | the Sampled A                  | Area within a   | Wetland?                    | Yes No   |
| Hydric Soil Present? Yes_   | 7 No  | We                            | etland Type:                   | essi/Em   | 18                          | TS /OMSST  |
| Wetland Hydrology Present? Yes_   | / No_   | Ala                           | ska Vegetatio                  | n Classificatio                                       | n (Viereck):                | MDZ, MAZ   |
| Notes and Site Sketch: Please include I corridor. Rolling hills of w Slightly convex - transit Subtle swales form incipa. Mineral below is w Tussock sedge with du Standing water at e. | eathered glace<br>tioning from<br>ment water transcent<br>warginally sat<br>warf cricaceo | hilltop<br>acks. I<br>trated. | of place<br>Flat Hor<br>Strong | th errat<br>of terra<br>m. Pero<br>positive<br>sphase | res/bos<br>refrost<br>reach | lders on the surface how ber slove.  at 12, Organics from to alpha alpha |
|   |   |                               |                                |   |                             |  |
| 100 miles   | PADOS   |                               |                                | - CO  |                             |  |

| 1. (Y/N) Total Cover.  2   | VEGETATION (use scientific names of plan | ts)             |                |           |  |
|--|--|-----------------|----------------|-----------|--|
| Section   Sect   | Tree Stratum (Plot sizes: 100 ft)        |                 | Species?       |           | No. of Dominant Species that are OBL, FACW, or FAC:(A  |
| 4. Total Cover:  | 1.                                       | _               | -              |           |  |
| Prevalence Index worksheet:  Total Cover:  50% of total cover:  50% of total cover:  Sapling/Shrub Stratum ( )   | 2.                                       |                 |                |           | % Dominant Species that are OBL, FACW, or FAC:(A/  |
| Total Cover: 20% of total cover: 20% of total cover: 50% of total cover: 20% of total cover: 50% of total cover: 20% of total cover: 50% of total cover: 50% of total cover: 50% of total cover: 50% of total cover: 51  | 3.                                       |                 |                | -         | CANADA CA |
| Sapling/Shrub Stratum ( 26   | 4.                                       | 1               | The state of   |           | Prevalence Index worksheet:  |
| Absolute Signification (Absolute Species)  Absolute Species Status (Absolute Species)  Absolute Status (Absolute Species)  Absolute Species Status (Absolute Species)  Absolute Species Status (Absolute Species Species)  Absolute Species Status (Absolute Species S | Total Cove                               | r:              |                |           | Total % Cover of: Multiply by:   |
| **Cover Species  | 50% of total cove                        | or: 20          | % of total cov | er:       |  |
| 1. Production for the sum of the  | Sapling/Shrub Stratum ( 26++)            |                 | Species?       |           | FAC species $32 \times 3 = 96$   |
| 2 Vocanum visis data 3 Setuta nava 4 Column Totals: 74 (A) 250 (B)  PI = B/A = 2 18  PI = B | 1. Rhis dodendrum ton                    | ntosum3         | 5 Y            | Facle     |  |
| 3. Setula navia 4. Indicator and folio 3 5. 6. 6. 7. 8. 9. Total Cover: G9 50% of total cover: 13.6  VEGETATION (use scientific names of plants)  Herb Stratum ( 36 ff   | - 1 - 1                                  | 17              | Ý              |           |  |
| 4 Indicate a polificial of the properties of plants and properties of the properties |  | 15              | 4              |           |  |
| 5. 6. 7. 8. 9. Total Cover: 3-1.5 20% of total cover: 13-6  VEGETATION (use scientific names of plants)  Herb Stratum ( 2-6  | . 17 - 17                                | 0 2             |                |           | standing of collection to nostinger a  |
| Total Cover: 69.  Total Cover: 69.  Total Cover: 69.  VEGETATION (use scientific names of plants)  Herb Stratum ( 26 TT )  | 5.                                       |                 |                |           | Property of the Control of the Contr |
| B.  9.  Total Cover: 69 50% of total cover: 34.5 20% of total cover: 3.6  VEGETATION (use scientific names of plants)  Herb Stratum ( 36 ft ) Absolute % Cover Species? Status (Y/N)  1. Course Course 70 Yes Cover Species? (Y/N)  2. From our Joan and 75 Yes Cover 1 Species? (Y/N)  Prevalence Index is ≤ 3.0 — Morphological Adaptations¹ (Provide supporting data in Notes) — Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  6.  7.  8.  9.  Total Cover of Wetland Bryophytes  9.  10.  Total Cover of Water Hydrophytic Vegetation Present (Y/N):   | 6.                                       | o within a supp | out balance    | ledt #1   | Manager Cheese Frontiere V Revisority  |
| Total Cover: 39 20% of total cover: 36 20% of | 7.                                       |                 |                | 7007      |  |
| Total Cover: 34.5 20% of total cover: 34.5 20  | В.                                       | i amoli         | A SOUT IN      | KilaW     | The state of the s |
| VEGETATION (use scientific names of plants)  Herb Stratum ( 26 TT  | 9.                                       |                 |                |           | ge Y say campaign, added herib   |
| VEGETATION (use scientific names of plants)         Herb Stratum (   |  |                 |                | 01        |  |
| Absolute % Cover Species? Status (YN)  1. Runus change more 70 2. From North Court 75 3. Peducularis labradarica T Factor 75 4. Problematic Hydrophytic Vegetation Indicators:  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicator Status (YN)  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  6.  7.  8.  9.  Total Cover of Wetland Bryophytes  — % Cover of Water  Hydrophytic Vegetation Present (Y/N):  | 50% of total cove                        | r: 595 20       | % of total cov | er: 13.6  | The same Albert A sensitive at John Street American Sensitive and the same   |
| % Cover Species? (Y/N)  1. Runus Change merus 70  2. Frondo um John and 75  4. Peducularis labradaria 75  5. Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  6. 7. Ø 8 Bare Ground  8. 9. Total Cover of Wetland Bryophytes  10. Total Cover (Q.S.)   | VEGETATION (use scientific names of plan | ts)             |                |           |  |
| 1. Ruhus Change many 70 2. Exponerum Jog natur 75 4. Paducularis labradarica Tacularis Lydrophytic Vegetation¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  6.  7.  8.  9.  Total Cover of Water  Hydrophytic Vegetation Present (Y/N):  Hydrophytic Vegetation Present (Y/N):   | Herb Stratum ( 26 ft)                    |                 | Dominant       | Indicator | Hydrophytic Vegetation Indicators:   |
| 1. Runner Change Morros 70 2. Econocum John atun 75 3. Peducularis labradaria Tacul Tacul Problematic Hydrophytic Vegetation¹ (Explain)  4. Paducularis Capitata Tacul Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  6.  7.  8.  9.  Total Cover of Water Hydrophytic Vegetation Present (Y/N):  Hydrophytic Vegetation Present (Y/N):   |  | % Cover         | 1              | Status    | Dominance Test is > 50%  |
| 2. From Variation 75  3. Perfection of the Supporting data in Notes)   | 1. 12 12 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 2 | - 700           | (Y/N)          | (= (v)    | Prevalence Index is ≤ 3.0  |
| Problematic Hydrophytic Vegetation¹ (Explain)   Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.   Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.   O % Bare Ground   % Cover of Wetland Bryophytes  | 0 /                                      | 71              | 4              | Tach      |  |
| 4. Problematic Hydrophytic Vegetation (Explain)  1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  6.  7.  8.  9.  10.  Total Cover (OS)  Total Cover (OS)  Total Cover (OS)  Hydrophytic Vegetation (Explain)  1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  1 Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.   | 200000000000000000000000000000000000000  | -               | 7              | Facu      | The second secon |
| 5. disturbed or problematic.  6.   7.   8.   9.   Total Cover of Wetland Bryophytes  10.   Total Cover (OS)  Total Cover (OS)  Total Cover (OS)  Total Cover (OS)  Hydrophytic Vegetation Present (Y/N):   | 4.7                                      | 1               | *              | 1         |  |
| 7.  8.  9.  Total Cover (OS)  We Bare Ground  Cover of Wetland Bryophytes  Total Cover of Bryophytes  Hydrophytic Vegetation Present (Y/N):  | reducularis capitata                     |                 |                | tocu      |  |
| 8.  9.  Total Cover: OS  Total Cover: VS  Total Cover of Wetland Bryophytes  Mydrophytic Vegetation Present (Y/N):  Total Cover: VS  | 6.                                       |                 | -              |           |  |
| 9  | 7.                                       |                 | -              |           | % Bare Ground  |
| 10. Cover of Water Hydrophytic Vegetation Present (Y/N):   | 8.                                       |                 | -              |           | % Cover of Wetland Bryophytes  |
| Hydrophytic Vegetation Present (Y/N):  | 9.                                       |                 |                |           |  |
| Hydrophytic Vegetation Present (Y/N):  | 10.                                      |                 |                |           | % Cover of Water   |
| Total Cover: (1) Notes: (If cheaned list morphological adoptations holow):   |  | 105             |                |           | Hydrophytic Vegetation Present (Y/N):  |
| 50% of total cover: 52.5 20% of total cover: 21 Rock   |  |                 |                | 21        | Notes: (If observed, list morphological adaptations below):  |
|  |  |                 |                |           |  |

|  |  |                                  |  | ature II   | The second second                 |   | 1000   |  | Pit Required (Y/N)   |
|--|--|----------------------------------|--|--|-----------------------------------|---|--|--|--|
| SOIL PROFI   | LE DESCRIPTION:  | (Describe                        | to the depth needed  | to doci  | ument the                         | indicator or o  | confirm the absen  | ce of indicators.  | .)   |
| Depth  | Matrix   | T view                           | Redox Features   | 100  |                                   |   |  |  | heed a surgest of the later  |
| (inches)   | Color (moist)  | %                                | Color (moist)  | %  | Type <sup>1</sup>                 | Loc <sup>2</sup>  | Texture  | Notes  | O Strue Hale I assegu  |
| 0-2.5  |  |                                  |  |  |                                   |   | fibric   |  |  |
| 25-9.5   | the state of the   |                                  | ,  |  |                                   |   | hemic  | Saturate   | -2   |
| 9.5-12   | 25-1561  | 99                               | 7,5 12 4/6   | 1  | C                                 | PL  | Loan   |  | saturated Aipl   |
|  |  | 100                              |  | Silvents   | SALES OF A                        | I DUBLING I   |  |  | c ~ 10% Grave  |
| 12-16  | 2545/1   | 100                              |  | 120  |                                   | A pol   | Loam   |  | ravel. Frozen  |
| 1T C. C.   | The state of the s | Latin Di                         | a de la composición della comp |  |                                   |   | 2.   | D PAY ROW  | A 1870 / IN RESIDENCE  |
|  |  | letion, RM                       | M=Reduced Matrix, C  | S=Cove   | ered or Co                        | ated Sand G   |  | : PL=Pore Lini   | A CONTROL OF THE PROPERTY OF T |
| PARTITION INCOME   | LINDICATORS  |                                  |  |  |                                   |   |  |  | MATIC HYDRIC SOILS   |
|  | stel (A1)  | -                                | Alaska Gleyed  |  |                                   |   | Alaska Color (   | Change (TA4)4_   | 2  |
| Histic Epiped  |  |                                  | Alaska Redox   | -  |                                   |   | Alaska Alpine  | Swales (TA5) _   | 2  |
| Black Histic (   | A3)  | my J. J.                         | Alaska Gleyed  | Pores (  | (A15)                             | 7   |  | with 2.5Y Hue  |  |
|  | fide (A4)  | festivi                          | day is to the said   | A good   | local.                            | lera  | Layer  | Marie Charles  | e or Redder Underlying   |
|  | urface (A12)   |                                  |  |  |                                   |   |  |  | ust be present unless  |
| Restrictive La   | Present (Y/N):   | oe: Per                          | hroma pare   |  |                                   |   | sive struct  | ure. 31.5  | inth plastic.  |
| Hydric Soil F Notes:   | Present (Y/N): 7   | Low c<br>Str                     | hroma pare<br>no positive  | nt   | mater<br>tion 1                   | iel, Mas  |  |  | thawed miner   |
| Hydric Soil F Notes:   | Present (Y/N): 7   | Low c<br>Str                     |  | nt   | mater<br>tion 1                   | iel, Mas  | rindicators (2   |  |  |
| Hydric Soil F Notes:   | Present (Y/N): 7  Cral fill 1  Saturate 2.  Frost fall  Y PRIMARY INDICA   | ATORS (a                         | hroma Pare<br>of positive<br>any one indicator is surface Soil Cracks (B6  | reco   | mater<br>tion 1                   | iel, Mas  | Y INDICATORS (2  | 2 or more requir   |  |
| Hydric Soil F Notes:  Weakh  HYDROLOG  Surface Wate  | Present (Y/N): 7  Cral fill 1  Saturate 2.  Frost fall  Y PRIMARY INDICA   | ATORS (a                         | any one indicator is surface Soil Cracks (B6   | reco   | mater<br>tion t                   | SECONDAR' Vater-stained eaves (B9)  | Y INDICATORS (2  | 2 or more requir<br>Stunted<br>Plants (                  | red)   |
| Hydric Soil F Notes:  Weakh  HYDROLOG  Surface Wate  | Present (Y/N): 7  Cral fill l Saturate2.  Frost fall Y PRIMARY INDICA  OF (A1) 7  able (A2) N  | ATORS (a                         | any one indicator is surface Soil Cracks (B6   | rece  ufficient  | mater<br>tion t                   | SECONDAR' Vater-stained eaves (B9) Drainage Pat Dxidized Rhiziving Roots  | terns (B10)  | Stunted Plants ( Geomo                                   | red) d or Stressed (D1) rphic Position (D2) v Aquitard (D3)  |
| Hydric Soil F Notes:  HYDROLOG Surface Water T   | Present (Y/N): 7  Present (Y/N): 7  Cral fill ( Saturate2).  Frost fall  Y PRIMARY INDICA  Or (A1) 7  able (A2) 1  | ATORS (& Su Inu (B7 Co           | any one indicator is surface Soil Cracks (B6 indation Visible on Ae arsely Vegetated incave Surface (B8)   | reconstruction of the control of the | mater tion t                      | SECONDAR' Vater-stained eaves (B9) Drainage Pat   | terns (B10) cospheres along (C3) cosphered   | Stunted Plants ( Geomo Shallow Microto Relief (          | red) d or Stressed (D1)  rphic Position (D2)  v Aquitard (D3)  pographic pographic f of a  |
| Hydric Soil F Notes:  HYDROLOG Surface Water High Water T Saturation (A) Water Marks   | Present (Y/N): 7  Present (Y/N): 7  Cral fill ( Saturate2).  Frost fall  Y PRIMARY INDICA  Or (A1) 7  able (A2) 1  | ATORS (a Su Inu (B) Co Ma        | any one indicator is surface Soil Cracks (B6 andation Visible on Ae arsely Vegetated ncave Surface (B8)  | reconstruction of the control of the | mater tion t  V L  gery C L  F II | SECONDAR' Vater-stained eaves (B9) Drainage Pate Dividized Rhizitying Roots Presence of Fron (C4)   | terns (B10) cospheres along (C3) cospheres (C5) cos | Stunted Plants ( Geomo Shallow Microto Relief ( FAC-Ne   | red) d or Stressed (D1) rphic Position (D2) v Aquitard (D3) pographic fussocks D4) virial Test (D5)  |
| Hydric Soil F Notes:  HYDROLOG  Surface Water High Water T  Saturation (A:  Water Marks  Sediment Deposits   | resent (Y/N):  | ATORS (a Su Inu Brown Man Hy) Wa | any one indicator is surface Soil Cracks (B6 indation Visible on Aer)  arsely Vegetated incave Surface (B8)  ard Deposits (B15)  drogen Sulfide or (C1)  J-Season atter Table (C2)   | reco   | mater tion t                      | BECONDAR' Vater-stained eaves (B9) Drainage Pate Dividized Rhiziving Roots Presence of Fron (C4) Salt Deposits John School Con (C4) Salt Deposits | terns (B10) despheres along (C3) deduced   | Stunted Plants ( Geomo Shallow Microto Relief ()  FAC-Ne | red) d or Stressed (D1) rphic Position (D2) v Aquitard (D3) pographic Hussocks D4) v Horizontal Test (D5) eutral Test (D5)   |
| Hydric Soil F Notes:  HYDROLOG  Surface Wate High Water T.  Saturation (A:  Water Marks  Sediment Deposits  Algal Mat or (A:  Algal Mat or | resent (Y/N):  | ATORS (a Su Inu Brown Man Hy) Wa | any one indicator is surface Soil Cracks (B6 indation Visible on Ae arsely Vegetated incave Surface (B8)   | reco   | mater tion t                      | BECONDAR' Vater-stained eaves (B9) Drainage Pate Dividized Rhiziving Roots Presence of Fron (C4) Salt Deposits John School Con (C4) Salt Deposits | terns (B10) cospheres along (C3) cospheres (C5) cos | Stunted Plants ( Geomo Shallow Microto Relief ()  FAC-Ne | red) d or Stressed (D1) rphic Position (D2) v Aquitard (D3) pographic Hussocks D4) v Horizontal Test (D5) eutral Test (D5)   |
| Hydric Soil F Notes:  HYDROLOG  Surface Water High Water T  Saturation (A:  Water Marks  Sediment Deposits   | resent (Y/N):  | ATORS (a Su Inu Brown Man Hy) Wa | any one indicator is surface Soil Cracks (B6 indation Visible on Aer)  arsely Vegetated incave Surface (B8)  ard Deposits (B15)  drogen Sulfide or (C1)  J-Season atter Table (C2)   | reco   | mater tion t                      | BECONDAR' Vater-stained eaves (B9) Drainage Pate Dividized Rhiziving Roots Presence of Fron (C4) Salt Deposits John School Con (C4) Salt Deposits | terns (B10) despheres along (C3) deduced   | Stunted Plants ( Geomo Shallow Microto Relief ()  FAC-Ne | red) d or Stressed (D1) rphic Position (D2) v Aquitard (D3) pographic Hussocks D4) v Horizontal Test (D5) eutral Test (D5)   |
| Hydric Soil F Notes:  HYDROLOG  Surface Water High Water T.  Saturation (A:  Water Marks  Sediment Deposits  Algal Mat or (Iron Deposits)  Surface Water   | r Present (Y/N): Y   | ATORS (a Su Inu Brown Man Hy) Wa | any one indicator is surface Soil Cracks (B6 indation Visible on Aer)  arsely Vegetated incave Surface (B8)  ard Deposits (B15)  drogen Sulfide or (C1)  J-Season atter Table (C2)   | reco   | mater tion t  y  gery  L  III     | BECONDAR' Vater-stained eaves (B9) Drainage Pate Dividized Rhiziving Roots Presence of Fron (C4) Salt Deposits Jotes:   | terns (B10) Lesspheres along (C3) Lesspheres along (C5) Lesspheres | Stunted Plants ( Geomo Shallow Microto Relief () FAC-Ne  | red) d or Stressed (D1) rphic Position (D2) v Aquitard (D3) pographic Hussocks D4) v Horizontal Test (D5) eutral Test (D5)   |
| Hydric Soil F Notes:  HYDROLOG  Surface Water High Water T.  Saturation (A:  Water Marks  Sediment Deposits  Algal Mat or (Iron Deposits)  Surface Water   | Present (Y/N): — Presen | ATORS (a Su Inu Brown Man Hy) Wa | any one indicator is surface Soil Cracks (B6 andation Visible on Ae arsely Vegetated ncave Surface (B8)  | reco   | mater tion t  y  gery  L  III     | BECONDAR' Vater-stained eaves (B9) Drainage Pate Dividized Rhiziving Roots Presence of Fron (C4) Salt Deposits Jotes:   | terns (B10) despheres along (C3) deduced   | Stunted Plants ( Geomo Shallow Microto Relief () FAC-Ne  | red) d or Stressed (D1) rphic Position (D2) v Aquitard (D3) pographic Hussocks D4) v Horizontal Test (D5) eutral Test (D5)   |



## AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved         Forested-Evergreen-Needle-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved         Scrub Shrub-Evergreen-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-Persistent  |
| Percent Cover (P): Tree (>5 dbh, >6m tall)       ○ Sapling (<5 dbh, <6m tall)  |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even   |
| Vegetation Density/Dominance (P):         Sparse (0-20%)         Low Density (20-40%)         Medium Density (40-60%)         High Density (60-80%)  |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="#">(</a> <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A   |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover_X  |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)   |
| Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat_x Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
|  |
| SOIL VARIABLES   |
| Soil Factors (P): Soil Lacking Histosol: Fibric Histosol: Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey   |
|  |
| HYDROLOGIC VARIABLES   |
| HYDROLOGIC VARIABLES  Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennia  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet Perenn  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inl  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/              |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/I |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/I |
| Inlet/Outlet Class (P): No Inlet/Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermitte |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/I |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Per                            |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent I                   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Sediment Perennial Sediment Perennial Sediment Perennial Inlet/No Outlet Perennial Inle   |

Page 4 of 4

#### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

|         | e ID: <u>W84 PAOOS</u> Field Target: <u>15307</u> Date: <u>7/9/15</u>   |
|---------|---|
| For all | items not checked, please provide detailed explanation in the notes section of data form.   |
|         |   |
| 1.      | Site Description  |
|         | <ul> <li>✓ Site description, site parameters and summary of findings are complete?</li> <li>✓ A detailed site sketch is included in logbook?</li> </ul>   |
| 2.      | Vegetation  |
|         | ★ At least 80% of onsite vegetation has been keyed to species, or collected for later identification?   |
|         | <ul> <li>✓ Vegetation names are entered legibly for all strata present?</li> <li>✓ Cover calculations are complete and correct?</li> <li>✓ All dominant species have been determined and recorded per strata?</li> <li>✓ Indicator status is correct for each species?</li> <li>✓ Dominance Test and Prevalence Index have been completed?</li> </ul> |
| 3.      | Soil  |
|         | <ul><li>☑ Soil profile is complete?</li><li>☑ Appropriate hydric soil indicators are marked?</li></ul>  |
| 4.      | Hydrology   |
|         | <ul> <li>□ Appropriate hydrology indicators are marked?</li> <li>□ Surface water, water table, and saturation depths are recorded if present?</li> </ul>  |
| 5.      | Functions and Values  |
|         | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?  |
| 6.      | Field Logbook   |
|         | Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?  |
| 7.      | Maps  |
|         | <ul> <li>✓ Wetland boundaries have been corrected if necessary?</li> <li>✓ Maps are initialed and dated?</li> </ul>   |

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- ☑ Two photos were taken for each Observation Point (vegetation/site overview)?

| X Morgane Fisher          | × allysslu 7/a/15 |
|---------------------------|-------------------|
| Wetland Scientist (print) | Signature / Date  |
|                           |                   |
|                           |                   |
| X Brem Strong             | X Duc hom 7/9/15  |
| Field Crew Chief (print)  | Signature / Date  |

| SITE DESCRIPTION  |   | 0,5  |  |                                  |                             | and the second   |
|---|---|--|--|----------------------------------|-----------------------------|--|
| Survey Type: Centerline X Acce  | ess Road (explain)  | Other (expla   | uin)   | Field Targ                       | et:15309                    | Map #: 9 Map Date: 6/8   |
| Date: 7/9/15  | Project Name & No.:   | Alaska LNG   | 60418403                                     |                                  | Feature Id:                 | W84PA006   |
| Investigators: Bryan Str  | one Alorga  | ule t  | Fisher                                       |                                  | - 0                         | Team No.: W84  |
| State: Alaska   | Region: Alaska  |  | Milepost:                                    | NB11                             | 5                           |  |
| Latitude: 68° 37 27.60  | O. N  | Longitude:   | 14902  | 2146                             | 19"W                        | Datum: WGS84   |
| Logbook No.:  | Logbook Page No.:   | 38   | Picture No.:                                 | P-WE                             | SUPAC                       | 006 NEG-NEG.   |
| SITE PARAMETERS   |   |  |  |                                  |                             |  |
| Subregion: Archic Foo   | thills  |  | Landform (hill                               | Islope, terrac                   | e, hummocks                 | , etc.): Terrace   |
| Slope (%): ~27.   |   |  |  |                                  |                             | int to slightly conv   |
| Pre-mapped Alaska LNG/NWI classifica  | ation: PEM1/5516  | E IIIA2  | Evidence of V                                |                                  | No "                        | Ismall hummocks  |
| Are climatic/hydrologic conditions on the Yes No (if no exp   |   | The second secon |  |                                  | stances" pres               | sent:<br>lain in Notes.)   |
| Are Vegetation, Soil, or Hy   | 2 ( ()  | y Disturbed?   | No X   |                                  | lain in Notes)              | THE PARTY OF THE P |
| Are Vegetation, Soil, or Hy   |   | roblematic?  | No_K   |                                  | lain in Notes.              |  |
| SUMMARY OF FINDINGS   |   |  | E E E E E E                                  |                                  |                             |  |
| Hydrophytic Vegetation Present? Yes_  | KNo   | Is t   | he Sampled A                                 | Area within a                    | Wetland?                    | YesKNo   |
| Hydric Soil Present? Yes_   | No  | We   | tland Type:                                  | SS1/En                           | 113                         |  |
| Wetland Hydrology Present? Yes_   | × No  | Carlo Carlo  |  |                                  |                             | 11 DZ, 111 A3  |
| Notes and Site Sketch: Please include I corridor. Dry microsite che by ERIANG and show show evidence of a RUBCITA are co-domin to Point, toward str | evidence of st<br>persistent was<br>and with BRI<br>ream to the | Lanete<br>anzing<br>Ler tal  | r plot. I<br>water. I<br>sle abou<br>SAL PUL | Small of<br>Driver so<br>e frost | vet de<br>tos as<br>t table | ressions are domin<br>described here<br>. At point, car<br>otom, Advacent  |
| No ERIVAL at point.   | Dry summer  |  |  |                                  |                             |  |
| The second second second  |   |  |  |                                  |                             |  |
| 74  | 006   |  |  |                                  |                             |  |
|   | 1   |  |  |                                  |                             | (hin)  |
| L   |   | - Control of the Cont | 1  |                                  |                             | 0;1101   |
| PSSI/EN<br>ILDZ,  | III A3  | sseek - sha<br>CM1/551B  | TO RSUBH                                     |                                  |                             |  |
| through<br>driver   | depressions<br>13 Beimub<br>nost area<br>parts of               |  |  |                                  | Seven Francisco             | 1)0.200  |
| terrac  | e 1102  |  |  |                                  |                             |  |

| VEGETATION (use scientific names of plants | 5)                  |                               |                     |  |
|--|---------------------|-------------------------------|---------------------|--|
| Tree Stratum (Plot sizes: 100ft)           | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: (A)   |
| 1.   |                     | (1111)                        | _                   | Total Number of Dominant Species Across All Strata: (B)  |
| 2.   |                     | - M                           |                     | % Dominant Species that are OBL, FACW, or FAC:(A/B)  |
| 3.   |                     |                               |                     |  |
| 4.   |                     |                               |                     | Prevalence Index worksheet:  |
| Total Cover                                |                     |                               |                     | Total % Cover of: Multiply by:   |
| 50% of total cover                         | : 20                | % of total cov                | er:                 | OBL species: X1 =  |
| Sapling/Shrub Stratum ( 26 P )             | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species:  |
| 1. Betwa wang                              | 9                   | rigir ata                     | Fac                 | UPL species X 5 =  |
| 2. Empetrum niarum.                        | 35                  | Y                             | Fac                 | Column Totals: 97 (A) 267 (B)  |
| 3. Varcinium vitis-idae                    | a 7                 |                               | Fac                 | PI = B/A = 2 = 75  |
| 4. Rhododerdrum tomer                      | Hosum 7             | 34                            | Fach                | Let Volume A Sout Sout Service |
| 5. Andronecla polifo                       | ial                 |                               | Fach                |  |
| 6. Salix pulchra                           | 6                   | and the count                 | Fuch                | Wydioddydd Vagestrius Proxedt Vest 1 1 10 11 11  |
| 7. Vaccinsum uliginesum                    | 4                   |                               | Fac                 |  |
| 8.   |                     | The second                    | SUS)W               | There is the second  |
| 9. Salix fuscescens                        | 4 //                | esent                         |                     | Waterd Hydrology Tresent Year S Inc.   |
| Total Cover                                | - 11 0              |                               | 00                  |  |
| 50% of total cover                         | : 571) 20           | % of total cov                | rer: 15.7           | The second of the second contraction of the second  |
| VEGETATION (use scientific names of plants | s)                  |                               |                     |  |
| Herb Stratum ( 26-44)                      | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  |
| 1. Rendus chamaemorus                      | 10/                 | Y                             | Fach                | Prevalence Index is ≤ 3.0  |
| 2. Corex binelowii                         | 18                  | Y                             | Fac                 | Morphological Adaptations <sup>1</sup> (Provide supporting data in Notes)  |
| 3. Pedicularis lando                       | T                   |                               | Fac                 | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 4. Poa Sp.                                 | 7                   |                               | _                   | <sup>1</sup> Indicators of hydric soil and wetland hydrology must be present unless  |
| 5. Pedicularis capitata                    | T                   |                               | Facl                | disturbed or problematic.  |
| 6. Bistofta phonosa                        | T                   |                               | FacU                |  |
| T.Bistorta VIVIBarum                       | T                   |                               | Fac                 | % Bare Ground  |
| 8. Frioghorim agostifolism                 | Edge/Pi             | esent                         |                     | % Cover of Wetland Bryophytes  |
| 9.   |                     |                               |                     | Total Cover of Bryophytes  |
| 10.  |                     |                               |                     |  |
| Total Cover                                | : 24                |                               |                     | Hydrophytic Vegetation Present (Y/N):  |
| 50% of total cover                         |                     | % of total cov                | ver: 5 6            | Notes: (If observed, list morphological adaptations below):  |
|  |                     |                               |                     |  |

| Depth inches) C  | DESCRIPTION: (D<br>Matrix<br>Color (moist)   | %           | Redox Features Color (moist)           | Maling at the | nent the i        | Loc <sup>2</sup>                              | Texture  | Soil Pit Required (Y/N)e of indicators.)  Notes                       |
|--|--|-------------|--|---------------|-------------------|---|--|---|
| eepth nches) C   | Matrix Color (moist)   | %           | Redox Features                         | Maling at the | All by L          |   |  |   |
| nches) (   | 12 3/4   |             | Color (moist)                          | %             | Type <sup>1</sup> | Loc <sup>2</sup>                              | Texture  | Notes   |
| 7 8 27   |  | 75<br>3 a   |  |               |                   |   |  | 11/10/2004 (0.10)   |
| 2 10 2   |  | 75          |  |               |                   |   |  |   |
| 2-10 2   |  | 75          |  |               |                   |   | MKSIL  | Perpent Caves (*O. Sava ) Insquer                                     |
| 2-10 2   |  |             |  |               |                   |   |  | Ste3/4 is a band of iron sindicating persistent water +               |
| 0-14 2   |  |             | P. J. Less de                          | (Permi)       |                   |   | O PERSONNEL  |   |
| )-14 2   | 1203   | (a) yila    | THE WAR                                | (Wash         | 14. ujum          | Y and   | The Total Box  | 2 (f) samplings with a compete (f) 2                                  |
| 777  | .514/2   |             |  |               |                   |   | Stoner S.L   | Permatrost  |
|  | ec m   | 0.500       | SHIP SHOWER AND ADDRESS.               |               | X 110             | Maria N                                       | INCO DOLL OR   | residence of closes & come sense.                                     |
| THE RESERVE OF THE PARTY OF THE | Constitution of the same of th | tion, RM    | M=Reduced Matrix, C                    | CS=Covere     | ed or Coa         | ated Sand G                                   | THE RESERVE THE PARTY OF THE PA | PL=Pore Lining, M=Matrix.   |
| YDRIC SOIL IN  |  |             |  |               |                   |   | Sale of the sale o | FOR PROBLEMATIC HYDRIC SOILS3   |
|  | osol or Histel (A1) Alaska Gleyed (A13)  |             |  | _             |                   |   | hange (TA4) <sup>4</sup>   |   |
|  | 42) Y- mars  | ) mail      | Alaska Redox                           |               |                   |   |  | Swales (TA5) N  |
| lack Histic (A3)   |  |             | Alaska Gleyed                          | Pores (A      | 15) _ N           |   |  | with 2.5Y Hue N   |
| lydrogen Sulfide   | (A4) _ N   |             | Na a Col. 200 Machine                  |               |                   |   | Layer_   | without 5Y Hue or Redder Underlying                                   |
| hick Dark Surfac   | ce (A12) _ N   |             |  |               |                   |   | Other (Explain   | in Notes)   |
| sturbed or probl<br>Give details of co   | ematic.<br>Nor change in Not   | tes.        | + -                                    | 4             |                   |   |  | Peden not quite   |
| oserved a<br>ineral abo  | t time or are the pe   | fsima       | te visit. A frost teble                | ~ 1" ba       | nd of             | ere is  | a persisted  | Isha alphe or saturate in creaturated organic t shallow water table s |
|  |  |             | any one indicator is s                 |               |                   |   |  | mall depressional feature<br>or more required) surrounds ar           |
| urface Water (A  |  |             | face Soil Cracks (Be                   |               | V                 | Vater-stained                                 | y-espent   | Stunted or Stressed Plants (D1)                                       |
| igh Water Table  | (A2) N   | Inui<br>(B7 | ndation Visible on A                   | erial Imag    | any               |   | terns (B10) N  | Geomorphic Position (D2)  |
| aturation (A3) _   | N+K  | Spa<br>Cor  | arsely Vegetated<br>ncave Surface (B8) | N             |                   | Oxidized Rhizospheres along Living Roots (C3) |  | Shallow Aquitard (D3)   |
| ater Marks (B1)  | N  | Mai         | rl Deposits (B15)                      | N             |                   | Presence of Reduced<br>Iron (C4)              |  | Microtopographic<br>Relief (D4)                                       |
| ediment Deposit  | s (B2) N   |             | drogen Sulfide<br>or (C1)              |               | S                 | Salt Deposits (C5) FAC-Neutra                 |  | FAC-Neutral Test (D5)   |
| Drift Deposits (B3) Dry-Season Water Table (C2)  |  |             | N                                      | lotes: Sat    | wrated ear        | 14 in the growing sees                        |  |   |
| gal Mat or Crust   | t (B4) N   | Oth         | ner (Explain in Notes                  | ):/           |                   | of the business                               | MART THAT THE  | Ref/ helmit FirepuG algebra Majellerie                                |
|  | N  |             |  | Signature     |                   |   | Est premarativo  | (A) the same of the special of the                                    |
|  |  |             |  |               |                   |   |  |   |
| on Deposits (B5)   |  |             | Depth (in): NA                         |               |                   |   |  |   |
| on Deposits (B5)   | esent (Y/N): N   |             | Depth (in): NA  Depth (in): NA         |               | Wet               | tland Hydro                                   | logy Present (Y/N  | ):  |

## AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES  | P= Plot, M= Matrix  |
|---|---|
| Forested-Evergreen-Needle-leav                                    | Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved  ved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved  eaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent- d  |
| Percent Cover (P): Tree (>5 db<br>Dwarf shrub (<0.5m)             | oh, >6m tall)   |
| Number of Wetland Types (M)                                       | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| Vegetation Density/Dominanc<br>80%) Very High Densi               | e (P): Sparse (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-ty (80-100%)  |
| Interspersion of Cover & Oper<br>Peripheral Cover >               | n Water (P): 100% Cover or Open Water <a></a> <25% Scattered/Peripheral Cover <a></a> 26-75% Scattered or 75% Scattered or N/A <a></a>  |
| Plant Species Diversity (P): Lo                                   | ow (< 5 plant species) Medium (5-25 species) High (>25)   |
| Presence of Islands (M): Ab                                       | sent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominar<br>Open Small Scattere              | nt Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site d Patches Continuous Cover_×  |
| Dead Woody Material (P): Low<br>Abundant (>50% of surface)        | Abundance (0-25% of surface) Moderately Abundant (25-50% of surface)  |
| Vegetative Interspersion (P):<br>High (small groupings, diverse a | Low (large patches, concentric rings) Moderate (broken irregular rings) und interspersed)   |
| HGM Class (P): Slope  | Flat_K_ Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
|   |   |
| SOIL VARIABLES  | ng Histosol:Fibric Histosol:Hemic_ × Histosol: Sapric   |
| Soil Factors (P): Soil Lacki<br>Mineral: Gravelly Mi              | neral: Sandy Mineral: Silty Mineral: Clayey   |
| HYDROLOGIC VARIABLES  |   |
|   | /OutletX No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No   |
| Outlet Intermittent Inle  | et/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet  |
| Wet: Perm. Flooded, Intermitten                                   | Drier: Seasonally Flooded, Temporarily Flooded, Saturated tly Exposed, Semiperm. Flooded  |
| Evidence of Sedimentation (P                                      | ): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment  |
| Microrelief of Wetland Surface                                    | Pronounced (>18in.) Pronounced (>18in.)   |
| Frequency of Overbank Flood<br>Return Interval >5 yrs             | ing (P): No Overbank Flooding   |
| Degree of Outlet Restriction (                                    |   |
| Water pH (P): No surface water                                    |   |
| Glacial Till/Not Permeable  |   |
| Basin Topographic Gradient ( Evidence of Seeps and Spring         | M): Low Gradient (<2%)   High Gradient (≥2%)   ps (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring   Perennial Spring |
| LANDSCAPE VARIABLES (M)   |   |
|   | Vetland Isolated Wetlands within 400m, Not Connected Only Connected Below  Connected Upstream & Downstream Unknown  |
| Wetland Land Use: High I  | ntensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)  |
| Watershed Land Use: 0-5   | % Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized   |
| Size: Small (<10 acres)   | Medium (10-100 acres) Large (>100 acres)  |
|   |   |

GPS Technician QAVQC chec

Page 4 of 4

### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Featur | e ID: <u>W84 PA006</u> Field Target: <u>IS309</u> Date: <u>7/9/15</u>  |
|--------|--|
|        | items not checked, please provide detailed explanation in the notes section of data form.  |
|        |  |
|        |  |
| 1.     | Site Description   |
|        | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included in logbook?                                  |
|        | form   |
| 2.     | Vegetation   |
|        | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  |
|        | <ul> <li>Vegetation names are entered legibly for all strata present?</li> <li>Cover calculations are complete and correct?</li> </ul>                   |
|        | All dominant species have been determined and recorded per strata?   |
|        | <ul> <li>☐ Indicator status is correct for each species?</li> <li>☐ Dominance Test and Prevalence Index have been completed?</li> </ul>                  |
| 3.     | Soil   |
|        | Soil profile is complete?  Appropriate hydric soil indicators are marked?  |
| 4.     | Hydrology  |
|        | <ul> <li>☑ Appropriate hydrology indicators are marked?</li> <li>☑ Surface water, water table, and saturation depths are recorded if present?</li> </ul> |
| 5.     | Functions and Values   |
|        | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6.     | Field Logbook  |
|        | Notes have been recorded at each site, including general description, sketch, and  |
|        | accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?   |
| 7.     | Maps   |
|        | Wetland boundaries have been corrected if necessary?  Maps are initialed and dated?  |

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

| X Abigaylet               | Saer X alles     | M 7/9/0 |
|---------------------------|------------------|---------|
| Wetland Scientist (print) | Signature / Date |         |

Field Crew Chief (print)

X Bran Strong 7/9/15

Signature / Date

| SITE DESCRIPTION  |  |                | 7 THE WAY                               |   |                             |  |
|---|--|----------------|---|---|-----------------------------|--|
| Survey Type: Centerline X Acce                                | ss Road (explain)  | Other (explain | in)                                     | Field Target: 1   | 308                         | Map #: Map Date: 6/25  |
| Date: 7/9   | Project Name & No.: Alaska LNG 60418403 Feature lo   |                |   |   | ture ld:                    | W84PAOOF   |
| Investigators: Bourn Strov                                    | an Strong, Hagayle Fish  |                |   |   |                             | Team No.: USG  |
| State: Alaska   | Region: Alaska   |                | Milepost:                               | 36.15   |                             |  |
| Latitude: 68° 33 55. 76                                       | (N   | Longitude:     | 149028                                  | 29.9411   | 2                           | Datum: WGS84   |
| Logbook No.: ()   | Logbook Page No.:  | 39             | Picture No.:                            | P_W84PAOC   | 7-UF                        | ED NEG-PTI-PIUG  |
| SITE PARAMETERS   |  |                |   |   |                             |  |
| Subregion: Arctic Frontil                                     |  | Landform (hill | Islope, terrace, hur                    | nmocks,   | , etc.): Solufluction beach |  |
| Slope (%): 13   |  |                |   |   | ndulating w/small homm      |  |
| Pre-mapped Alaska LNG/NWI classifica                          | ation: () (1 D2 111)   | AL             |   | Wildlife Use:   |                             |  |
| Are climatic/hydrologic conditions on the Yes No ★ (if no exp | e site typical for this time<br>plain in Notes)  | of year?       | Are "No                                 | ormal Circumstanc   |                             | ent:<br>lain in Notes.)  |
| Are Vegetation, Soil, or Hy                                   | The state of the s | ly Disturbed?  | 1.                                      | _(If yes, explain in  | Notes)                      |  |
| Are Vegetation, Soil, or Hy                                   | drology Naturally P  | Problematic?   | No_X                                    | _ (If yes, explain in   | Notes.                      |  |
| SUMMARY OF FINDINGS   |  |                |   |   |                             |  |
| Hydrophytic Vegetation Present? Yes_                          | No   | ( Is t         | he Sampled A                            | Area within a Wet   | and?                        | Yes No   |
| Hydric Soil Present? Yes_                                     | Hydric Soil Present? Yes NoX Wetland Type: ()  |                |   |   |                             |  |
| Wetland Hydrology Present? Yes                                | 1- marginano   | Ala            | ska Vegetation                          | n Classification (Vi  | ereck):                     | 1101, 111AZ  |
| Mostly M  | oraphy with sfrost table of a solution.  S. Small depresent water was on-wetland the sease-shruters  Vegetated  Small of star water  | PADO7          | ting on.  124  nch. We show ever  2 m a | 2 rolling to unches, So exter areas lence of few rock of transition and transition and the sounds | occ stan toniv              | raphor. Small to t dus in a moderately or in some concare zing water while tonus microsites is to wetter open with drainaise  Dry summer |
|   |  |                |   |   | owss.                       |  |

| VEGETATION (use scientific names of plants   | Absolute            | Dominant                      | Indiasta  | Deminance Test words but   |
|--|---------------------|-------------------------------|---|--|
| ree Stratum (Plot sizes:   | Absolute<br>% Cover | Dominant<br>Species?          | Indicator<br>Status   | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC:(A   |
|  |                     | (Y/N)                         |   | Total Number of Dominant Species Across All Strata:(I  |
|  |                     |                               |   | % Dominant Species that are OBL, FACW, or FAC: 40 (A   |
| Department Williams  |                     |                               |   |  |
|  |                     |                               | 105   |  |
|  |                     |                               |   | Prevalence Index worksheet:  |
| Total Cover  |                     |                               |   | Total % Cover of: Multiply by:   |
| 50% of total cover   |                     | % of total cov                |   | OBL species:X1 =   |
| apling/Shrub Stratum ( 36 + 1 )  | Absolute<br>% Cover | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status   | FACW species: $6 \times 2 = 32$<br>FAC species $39 \times 3 = 117$<br>FACU species $53 \times 4 = 212$   |
| Vaccinium illiainosum  | 8                   | agair e 7                     | Fac   | UPL species X 5 =  |
| Salix reticulates  | 15                  | Y                             | Faci  | Column Totals: 108 (A) 361 (B)   |
| Dras interiflatia  | 46                  | Y                             | Facel   | PI = B/A = 3 3   |
| Betala nerna   | 10                  | H CAS BA                      | Fai   | and the second of the second o |
| Salix pulches  | 10                  |                               | Fach  | And the second second  |
| Salix Aichardsonii   | W Turne             | and balance                   | Karla   | N and the state of |
| Empetrum Magarum   | 5                   |                               | for   |  |
| 7  |                     | T BOYT IS                     | 1000000   | NM   |
|  |                     |                               |   |  |
| · · · · · · · · · · · · · · · · · · ·  |                     |                               |   | delines   Yev   testand lendaged bases   |
| Total Cover  | : 66                |                               |   | dente part Many 1 Stations (contribute bluste  |
|  |                     | % of total cov                | er:_\7.6  | And the second of the second o |
| Total Cover  | : 44 20             | % of total cov                | er: \7.6  | Andread Vary Stations getoner by a Committee of the Commi |
| Total Cover 50% of total cover EGETATION (use scientific names of plants   | : 44 20             | % of total cov                | er: \7.6  | Hydrophytic Vegetation Indicators:   |
| Total Cover 50% of total cover EGETATION (use scientific names of plants   | = 44 20             | Dominant<br>Species?          |   |  |
| Total Cover 50% of total cover EGETATION (use scientific names of plants erb Stratum ( )   | s) Absolute         | Dominant                      | Indicator   | Hydrophytic Vegetation Indicators:   |
| Total Cover 50% of total cover  EGETATION (use scientific names of plants erb Stratum (  | s) Absolute         | Dominant<br>Species?          | Indicator   | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  |
| Total Cover 50% of total cover 50% of total cover ege Stratum ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) ( ) (  | s) Absolute         | Dominant<br>Species?          | Indicator<br>Status   | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0   |
| Total Cover 50% of total cover  EGETATION (use scientific names of plants erb Stratum ( 26 + 1)  Cassiope fet ( a a na Singanca anaust fo)  Case Scientific names of plants  | s) Absolute         | Dominant<br>Species?          | Indicator<br>Status   | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in   |
| Total Cover 50% of total cover 50% of total cover some scientific names of plants erb Stratum (26 + 1)  Cassio pe fet ca a na . Sausaurea anaust. fol  | s) Absolute         | Dominant<br>Species?          | Indicator<br>Status<br>Fac  | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless   |
| Total Cover 50% of total cover  EGETATION (use scientific names of plants erb Stratum ( 26 ++ )  Cassio pe fet ( a a va  - Sausaurca anaust. fo)  Care Scirpoidea  Bistorta plumosa  | s) Absolute         | Dominant<br>Species?          | Indicator<br>Status Fac Fac Fac Fac   | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)   |
| Total Cover 50% of total cover  EGETATION (use scientific names of plants erb Stratum ( 26 +4 )  Cassio pe tet (6 a o na 2. Sausaurca anaust.fo) 3. Care scientific names of plants erb Stratum ( 26 +4 )  Care scientific names of plants erb Stratum ( 26 +4 )  Cassio pe tet (6 a o na 2. Sausaurca anaust.fo)  3. Care scientific names of plants erb Stratum ( 26 +4 )  Care scientific names of plants erb Stratum ( 26 +4 )  Care scientific names of plants erb Stratum ( 26 +4 )  Care scientific names of plants erb Stratum ( 26 +4 )  Care scientific names of plants erb Stratum ( 26 +4 )  Care scientific names of plants erb Stratum ( 26 +4 )  Care scientific names of plants erb Stratum ( 26 +4 )  Care scientific names of plants erb Stratum ( 26 +4 )  Care scientific names of plants erb Stratum ( 26 +4 )  Care scientific names of plants erb Stratum ( 26 +4 )  Care scientific names of plants erb Stratum ( 26 +4 )  | s) Absolute         | Dominant<br>Species?          | Indicator<br>Status  Facil Fac  Fac  Fac  Fac  Fac  Fac  Fac  Fac   | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless   |
| Total Cover 50% of total cover  EGETATION (use scientific names of plants erb Stratum ( 26 + 1)  Cassing pe fet ( a a o na 2. Sausaurea anaust. fo) 2. Care- Scirppidea 2. Bistorta plumosa 2. Stellaria longipes 3. Papaver Macaurii  | s) Absolute         | Dominant<br>Species?          | Indicator<br>Status  Facil Facil Facil Facil Facil Facil  | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless   |
| Total Cover 50% of total cover  EGETATION (use scientific names of plants erb Stratum ( 26 + 1)  Cassio pe tet (6 a o na 2. Sausaurca anaust.fo) 3. Care scientific names of plants erb Stratum ( 26 + 1)  Cassio pe tet (6 a o na 2. Sausaurca anaust.fo) 3. Care scientific names of plants erb Stratum ( 26 + 1)  Sausaurca anaust.fo) 3. Care scientific names of plants erb Stratum ( 26 + 1)  Sausaurca anaust.fo) 3. Care scientific names of plants erb Stratum ( 26 + 1)  Sausaurca anaust.fo)  Sausaurca anaust.fo)  Sausaurca anaust.fo)  Sausaurca anaust.fo)  Arace scientific names of plants erb Stratum ( 26 + 1)  Care  | s) Absolute         | Dominant<br>Species?          | Indicator<br>Status  Facil Facil Facil Facil Facil Facil  | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.   |
| Total Cover 50% of total cover  EGETATION (use scientific names of plants erb Stratum ( 26 + 16 a a na 2. Sausaurea angust. fol 3. Care scirpoidea 3. Stellaria longipes 5. Paparer Macaurii 6. Saxifraga lessing 11 6. Saxifraga lessing 11   | s) Absolute         | Dominant<br>Species?          | Indicator<br>Status  Fac  Fac  Fac  Fac  Fac  Fac  Fac  | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  |
| Total Cover 50% of total cover  50% of total cover  EGETATION (use scientific names of plants erb Stratum ( )  Cassiope tetragona  Sausaurea angust fol  Care Scirpoidea  Bistorta plumosa  Stellaria longipes  Dapower Macounii  Arnicg Lessingu  Saxifraga lessingu  Saxifraga lessingu  Care Membranace  O. O. Care Membranace   | s) Absolute         | Dominant<br>Species?          | Indicator<br>Status  Facl Facl Facl Facl Facl   | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  % Bare Ground % Cover of Wetland Bryophytes Total Cover of Bryophytes % Cover of Water  |
| Total Cover 50% of total cover  EGETATION (use scientific names of plants erb Stratum ( )  Cacsope tetragona  Sausaurca angust.fol  Care Scirpoidea  Bistorta plumosa  Stellaria longipes  Dapower Macaunii  Arnicg Lessingu  Saxifraga lessingu  Care Membranace  Scirpoidea  Rossii  | Absolute % Cover    | Dominant<br>Species?          | Indicator<br>Status  Fac  Fac  Fac  Fac  Fac  Fac  Fac  | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  % Bare Ground % Cover of Wetland Bryophytes Total Cover of Bryophytes   |
| Total Cover  50% of total cover  50% of total cover  EGETATION (use scientific names of plants erb Stratum ( )  Cassio pe tet ca a ona  Sausaurca anaust fol  Care Scirpoidea  Bistorta plumosa  Stellaria longipes  Arnieg Lessing  Saxifraga lessing  Care Membranace  Of Potential Cover  Total Cover   | Absolute % Cover    | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  Facil Facil Facil Facil Facil Facil Facil Facil  | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  % Bare Ground % Cover of Wetland Bryophytes Total Cover of Bryophytes % Cover of Water  |
| Total Cover 50% of total cover  50% of total cover  EGETATION (use scientific names of plants erb Stratum ( )  Cassio pe tetragona  Sausaurca angust.fol  Care Scirpoidea  Bistorta plumosa  Stellaria longipes  Dapower Macaurii  Arnicg Lessing  Saxifraga lessing  Care Membranace  Os Portent Rossii   | Absolute % Cover    | Dominant<br>Species?          | Indicator<br>Status  Facil Facil Facil Facil Facil Facil Facil Facil  | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  % Bare Ground % Cover of Wetland Bryophytes Total Cover of Bryophytes % Cover of Water Hydrophytic Vegetation Present (Y/N):  |
| Total Cover  50% of total cover  50% of total cover  EGETATION (use scientific names of plants  lerb Stratum ( )  1. Caccio pe tet ca a ona  2. Sausaurca anaust fol  3. Cace scirpoidea  4. Bistorta plumosa  5. Stellaria longipes  6. Dapover Macaurii  7. Arnicg Lessing  8. Saxifraga lessing  10. Cace Membranace  10. Pater Membran | Absolute % Cover    | Dominant<br>Species?<br>(Y/N) | Indicator Status  Facilitation | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  % Bare Ground % Cover of Wetland Bryophytes Total Cover of Bryophytes % Cover of Water Hydrophytic Vegetation Present (Y/N):  |
| Total Cover  50% of total cover  50% of total cover  EGETATION (use scientific names of plants  lerb Stratum ( )  Caccio pe tet ca a ma  Caccio pe tet caccio pe t | Absolute % Cover    | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  Facil Facil Facil Facil Facil Facil Facil Facil  | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  % Bare Ground % Cover of Wetland Bryophytes Total Cover of Bryophytes % Cover of Water Hydrophytic Vegetation Present (Y/N):  |

| SOIL  |                     |  | Poto Fr                | eature ID     | 4840               | 0+                         |   | Soil Pit Required (Y/N)  |  |
|---|---------------------|--|------------------------|---------------|--------------------|----------------------------|---|--|--|
| AND DESCRIPTION OF THE PERSON | E DESCRIPTION: /    | O STREET, STRE | to the depth needed    |               | nt the indica      | etor or co                 | onfirm the absence                                      |  |  |
|   | Matrix              | Describe   | Redox Features         | to docume     | in the maice       | ator or co                 | Timin the absence                                       | or malcators.)   |  |
| Depth<br>inches)  |                     | %  |                        | % Tv          | ma <sup>1</sup> 1. | oc <sup>2</sup>            | Texture   | Notes  |  |
| 201011100100101   | Color (moist)       | %  | Color (moist)          | % Ty          | pe¹ Lo             | oc .                       | Texture   | Notes  |  |
| ) - 3   | ,                   | 1  |                        |               | and the same       |                            | 6   | The selection of the se |  |
| -7.5  | 10/2 2/2            | 100  |                        |               |                    |                            | 5,1   |  |  |
| 5-10  | 10725/3             | (00)   |                        |               | AL SULL DI         | W VI                       | VGRLagn   | ~357 gravel  |  |
| 3412  | 10125/21            | Loo  | and markey /           |               | d estimated to     |                            | Suddo on  | " I FAT & TALLE LINE TO THE  |  |
| 0-20+   | 10-ce 4/3           | 92   | 7.5-12 4/6             | 3             | C                  | M                          | VGRSaL  | ~35% scarel  |  |
| a beautiful a   | THES                | 5  | 10-125/2               | 5             | 0                  | M                          | 150 //160/ 19   | temperature of Guesti & Open Witten  |  |
| Type: C=Cor   | ncentration, D=Depl | etion, RN  | l=Reduced Matrix, C    | CS=Covered    | or Coated          | Sand Gra                   |   | PL=Pore Lining, M=Matrix.  |  |
| YDRIC SOIL  | INDICATORS          |  |                        |               |                    |                            | INDICATORS I  | FOR PROBLEMATIC HYDRIC SOILS   |  |
| listosol or His   | stel (A1) N         |  | Alaska Gleyed          | (A13)         |                    |                            | Alaska Color Change (TA4) <sup>4</sup>                  |  |  |
| listic Epipedo  | on (A2) N           |  | Alaska Redox           | (A14)         | )                  |                            | Alaska Alpine Swales (TA5)                              |  |  |
| Black Histic (A   | (3)                 |  | Alaska Gleyed          | Pores (A15    | (i                 | Alaska Redox with 2.5Y Hue |   |  |  |
| lydrogen Sul  | fide (A4)           |  | to. It is a limited    | A description |                    |                            | Alaska Gleyed without 5Y Hue or Redder Underlying Layer |  |  |
| hick Dark Su  | rface (A12)         |  |                        | 1             |                    |                            | Other (Explain  | in Notes)  |  |
| disturbed or p<br>Give details of   |                     | otes.  |                        | of wetland h  |                    |                            | ppropriate landsca                                      | pe position must be present unless   |  |
|   | Permatros           | t obs  | ierzed in              | 24"           | P.+ lo             | cated                      | in a cor  | mare murosite below<br>thin plot/nearby.   |  |
|   |                     |  | any one indicator is s |               |                    |                            |   | or more required)  |  |
|   | r (A1) N Plot       |  | rface Soil Cracks (B   |               | Water              | r-stained<br>es (B9) _     |   | Stunted or Stressed<br>Plants (D1)   |  |
| High Water T  | able (AQ)           | Inu  | ndation Visible on A   | erial Imager  | y Drain            | ago Patte                  | orne (B10)  | Geomorphic Position (D2) N *   |  |

| HYDROLOGY PRIMARY INDICATO                               | ORS (any one indicator is sufficient)     | SECONDARY INDICATORS (2 o  | r more required)   |  |
|--|---|--|--|--|
| Surface Water (A1)                                       | Surface Soil Cracks (B6)                  | Water-stained<br>Leaves (B9)   | Stunted or Stressed<br>Plants (D1)                             |  |
| High Water Table (A2)                                    | Inundation Visible on Aerial Imagery (B7) | Drainage Patterns (B10) _ →  | Geomorphic Position (D2) N *                                   |  |
| Saturation (A3) N  | Sparsely Vegetated Concave Surface (B8)   | Oxidized Rhizospheres along Living Roots (C3)  | Shallow Aquitard (D3)  |  |
| Water Marks (B1)   | Marl Deposits (B15)                       | Presence of Reduced<br>Iron (C4)   | Microtopographic<br>Relief (D4)                                |  |
| Sediment Deposits (B2)/_                                 | Hydrogen Sulfide<br>Odor (C1)             | Salt Deposits (C5)   | FAC-Neutral Test (D5)  |  |
| Drift Deposits (B3)                                      | Dry-Season<br>Water Table (C2)            | Micro lows Just beyon  | abserved in a few of the plot,                                 |  |
| Algal Mat or Crust (B4)                                  | Other (Explain in Notes):                 | Surface Demonstration of the Property Surface (P) and the Property Surface (P) and the |  |  |
| Iron Deposits (B5)                                       |   | La China I material and  | VIII) toething elitigargoge i event                            |  |
| Surface Water Present (Y/N):                             | Depth (in): NA                            |  | , , , ) 71   |  |
| Water Table Present (Y/N): Depth (in):                   |   | Wetland Hydrology Present (Y/N):   | - Other - starling<br>water in a few mice<br>at edge of 26 Mar |  |
| Saturation Present (Y/N):<br>(includes capillary fringe) | ration Present (Y/N):                     |  | EC: NA PIST  |  |
|  |   |  |  |  |

## AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P): Vegetation Lacking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Forested-Evergreen-Needle-leaved_ Scrub Shrub-Deciduous-Needle-leaved_ Scrub Shrub-Deciduous-Broad-leaved_ Scrub Shrub-Evergreen-Needle-leaved_ Emergent-Non-persistent_ Emergent-Persistent_ Aquatic Bed   |
| Percent Cover (P):         Tree (>5 dbh, >6m tall)         Sapling (<5 dbh, <6m tall)  |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even   |
| Vegetation Density/Dominance (P): Sparse (0-20%)       Low Density (20-40%)       Medium Density (40-60%)       High Density (60-80%)         80%)       Very High Density (80-100%)   |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover N/A   |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg. Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover 1   |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)   |
| Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope Flat Lacustrine Fringe Depressional Riverine Estaurine Fringe   |
|  |
| SOIL VARIABLES   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey   |
|  |
| HYDROLOGIC VARIABLES   |
| HYDROLOGIC VARIABLES  Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial/Outlet Perennial Inlet/Perennial/Outlet Perennial Inlet/Perennial/Outlet Perennial Inlet/Perennial/Outlet Perennial/Outlet   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Pere   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Peren   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Pere   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Pe            |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perenni  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Intermittent Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Outlet Perennial Inlet/No Outlet  |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet Intermittent Inlet/Intermittent Inlet/Intermit |
| Inlet/Outlet Class (P): No Inlet/Outlet  |

Page 4 of 4

### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Feature | e ID: <u>W84 PA 007</u> Field Target: <u>15308</u> Date: <u>7/5/15</u>  |
|---------|---|
| For all | items not checked, please provide detailed explanation in the notes section of data form.   |
|         |   |
|         |   |
| 1.      | Site Description  |
|         | <ul> <li>☑ Site description, site parameters and summary of findings are complete?</li> <li>☑ A detailed site sketch is included in logbook?</li> </ul> |
| 2.      | Vegetation  |
|         | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?   |
|         | <ul> <li>✓ Vegetation names are entered legibly for all strata present?</li> <li>✓ Cover calculations are complete and correct?</li> </ul>              |
|         | All dominant species have been determined and recorded per strata?  |
|         | <ul> <li>☑ Indicator status is correct for each species?</li> <li>☑ Dominance Test and Prevalence Index have been completed?</li> </ul>                 |
| 3.      | Soil  |
|         | Soil profile is complete?  Appropriate hydric soil indicators are marked?   |
| 4.      | Hydrology   |
|         | <ul> <li>Appropriate hydrology indicators are marked?</li> <li>Surface water, water table, and saturation depths are recorded if present?</li> </ul>    |
| 5.      | Functions and Values  |
|         | ☑ Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?  |
| 6.      | Field Logbook   |
|         | Notes have been recorded at each site, including general description, sketch, and   |
|         | accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?  |
| 7.      | Maps  |
|         | <ul> <li>☑ Wetland boundaries have been corrected if necessary?</li> <li>☑ Maps are initialed and dated?</li> </ul>                                     |

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

| XAb gayle Tople           | x allyly         |
|---------------------------|------------------|
| Wetland Scientist (print) | Signature / Date |
|                           |                  |
| X Bryon Strong            | X & Olya 7/9/15  |
| Field Crew Chief (print)  | Signature / Date |

| SITE DESCRIPTION   |   |   |  |   |
|--|---|---|--|---|
| Survey Type: Centerline Acces  | ss Road (explain) Othe  | r (explain) X Tocal Field   | Target: 15268  | Map #:Map Date: 6/29/15   |
| Date: 7/10/15  | Project Name & No.: Alasi   | ca LNG 60418403   | Feature Id   | W84PAOQ   |
| Investigators: Bryan Stra  | na thiganlet  | isher   |  | Team No.: W84   |
| State: Alaska  | Region: Alaska  | Milepost: N/A   | of Filow   |   |
| Latitude: 69008 46. 7  | 27"N Lor  | gitude: 148° 50°2   | 41406  | Datum: WGS84  |
| Logbook No.:   | Logbook Page No.: 40  | Picture No.:  | 84PA008  | LEG_VEG_PTI-PWG   |
| SITE PARAMETERS  |   |   |  |   |
| Subregion: Arctic tockil   | 15  | Landform (hillslope, te   | errace, hummock  | s, etc.): Shoulder slope  |
| Slope (%): 7-8% measure 2  | Aspecti. W 290'   | Local relief (concave,  | convex, none):   | Convex tussocky-moderat   |
| Pre-mapped Alaska LNG/NWI classifica   | ition: PEM 1/5/13 111   |   |  |   |
| Are climatic/hydrologic conditions on the Yes No (if no expl                             | e site typical for this time of yea<br>lain in Notes)   | Are "Normal Ci  | rcumstances" pre   | esent: Dra conditions plain in Notes.)  |
| Are Vegetation, Soil, or Hyd   |   |   | , explain in Notes   |   |
| Are Vegetation, Soil, or Hyd   |   | matic? No (If yes   | , explain in Notes   | s.)   |
| SUMMARY OF FINDINGS  |   |   |  |   |
| Hydrophytic Vegetation Present? Yes_   | X No  | Is the Sampled Area wit   | hin a Wetland?   | Yes NoK   |
| Hydric Soil Present? Yes_  | NoX   | Wetland Type: U   | OMSS   | _   |
| Wetland Hydrology Present? Yes_  | No  | Alaska Vegetation Classif   | fication (Viereck)   | 11c2, 111AZ   |
| Low chrome parent of<br>and may form prim<br>alpha (-80%) starting<br>water. Mixed shrub | Soil has low material, Concenturity out of the at 13" below to tussock selder Marginal but, app | constore content<br>cations appear to<br>e growing season<br>the mineral soil s | above the driven Spotter . Spotter . Norther . Northern | ne frost table. en by frost processes seaction to alpha Do evidence of surface ions, a site revisit |

| Dag.   | Absolute                                       | Dominant                          | Indicator   | Dominance Test worksheet:   |
|--|--|-----------------------------------|---|---|
| Tree Stratum (Plot sizes: \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \ \  | % Cover  | Species?<br>(Y/N)                 | Status  | No. of Dominant Species that are OBL, FACW, or FAC:   |
| 1.   |  | (1714)                            |   | Total Number of Dominant Species Across All Strata:   |
| ).   |  |                                   |   | % Dominant Species that are OBL, FACW, or FAC: (OC)   |
| 3.   |  |                                   |   |   |
| l.   |  |                                   |   | Prevalence Index worksheet:   |
| Total Cove   | r:   |                                   | 1000  | Total % Cover of: Multiply by:  |
| 50% of total cove  | r: 20  | % of total cov                    | ver:  | OBL species: X1 =   |
| Sapling/Shrub Stratum ( 3644 )   | Absolute<br>% Cover                            | Dominant<br>Species?<br>(Y/N)     | Indicator<br>Status   | FACW species: $33 \times 2 = 66$<br>FAC species $9 \times 3 = 77$   |
| Salix glauca   | 8  | 4                                 | FAC   | FACU species  |
| Betula nana  | 17   | 7                                 | FAC   | UPL species $X 5 =$ Column Totals: $96 (A) 259 (B)$   |
| Rhododendrom tomento   |  |                                   | Fach  | Column Totals: $9b$ (A) $39$ (B) $PI = B/A = 3.70$  |
| · Vaccinium Vitis-idaea  | 1  |                                   | Fac   |   |
| Empetrum niagrum   | 4  |                                   | Fac   | Shrubs  |
| Salix reticulata   | 1  |                                   | Fac   | Arctons ruber 2 Fac   |
| Vacconium uliginosum   | 1  |                                   | Fac   |   |
| Salix pulchra  | 4  | A. 1210                           | Fach  |   |
| and the state of t |  |                                   |   |   |
| Salix richardson!  | 7  |                                   | Fall  |   |
| Salix richardsonii   | : 41   |                                   | FacW  |   |
| Satix richardsoni  |  | % of total cov                    |   |   |
| Salix richardson in Total Cover  | r: <u>20.5</u> 20                              | % of total cov                    |   |   |
| Total Cover  | r: <u>20,5</u> 20                              |                                   | er: 8.2   | Hydrophytic Vegetation Indicators:  |
| Total Cover 50% of total cover EGETATION (use scientific names of plants   | r: <u>20.5</u> 20                              | % of total cov  Dominant Species? |   | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%   |
| Total Cover 50% of total cover erb Stratum ( 26ff )  | r: 20.5 20<br>s)<br>Absolute<br>% Cover        | Dominant                          | er: 8.7 Indicator Status  | Dominance Test is > 50%   |
| Total Cover 50% of total cover 50% of total cover sept Stratum (26ff)  Petasites frigidus  | r: 20.5 20<br>s) Absolute                      | Dominant<br>Species?              | Indicator<br>Status   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  |
| Total Cover 50% of total cover 50% of total cover some scientific names of plants of Stratum (26ff)  Petasites frigidus Bistorta plumosa   | r: 20.5 20<br>s)<br>Absolute<br>% Cover        | Dominant<br>Species?              | er: 8.7<br>Indicator<br>Status  | Dominance Test is > 50%   |
| Total Cover 50% of total cover 50% of total cover some formal cover some formal cover some formal cover stratum (26ff)  Petastes frigidus Bistoria plumosa Cassiope tetragona  | r: 20.5 20<br>s)<br>Absolute<br>% Cover        | Dominant<br>Species?              | Indicator<br>Status   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in  |
| Total Cover 50% of total cover 50% of total cover some formal cover some formal cover stratum (26ff)  Petastes frigidus Bistorta plumosa Cassiope tetragona Arctagrotis datifolia  | r: 20.5 20<br>s)<br>Absolute<br>% Cover        | Dominant<br>Species?              | Indicator Status  Fac U   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  |
| Total Cover 50% of total cover 50% of total cover some formal cover some formal cover stratum (26ff)  Petasites frigidus Bistorta plumosa Cassiope tetragona Arctagrotis datitalia   | r: 20.5 20<br>s)<br>Absolute<br>% Cover        | Dominant<br>Species?              | Indicator Status  Fac U Fac U FAC W   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  |
| Total Cover 50% of total cover 50% of total cover some of plants erb Stratum (26ff)  Petasites frigidus Bistoria plumosa Cassiope tetragona Arctagrosis datifolia Stellaria longipes   | r: 20.5 20<br>s)<br>Absolute<br>% Cover        | Dominant<br>Species?              | Indicator Status  FacU  FacU  | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless  |
| Total Cover 50% of total cover 5 | r: 20.5 20<br>s)<br>Absolute<br>% Cover        | Dominant<br>Species?              | Indicator Status  Fac U Fac U FAC W FAC W                                     | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless  |
| Total Cover 50% of total cover 50% of total cover 50% of total cover some stratum (26ff)  Petasites frigidus Bistorta plumosa assispe tetragona Arctagrostis datifolia Stellaria longines Carex bigloweii Pyrda asterifdia   | r: 20.5 20<br>s)<br>Absolute<br>% Cover        | Dominant<br>Species?              | Indicator Status  Fac U Fac U Fac U Fac U Fac U Fac U Fac W                   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  ———————————————————————————————————  |
| Total Cover 50% of total cover 50% of total cover 150% of total co | r: 20.5 20<br>s)<br>Absolute<br>% Cover        | Dominant<br>Species?              | Indicator Status  Fac U             | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  — Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  — % Bare Ground — % Cover of Wetland Bryophytes — Total Cover of Bryophytes   |
| Total Cover 50% of total cover 50% of total cover 50% of total cover 150% of total cov | Absolute % Cover 4 20 T 25 T T T               | Dominant<br>Species?              | Indicator Status  Fac U Fac U Fac U Fac Tac U Fac Fac Fac Tac U               | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  — Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  — % Bare Ground — % Cover of Wetland Bryophytes — 55 Total Cover of Bryophytes — 6 % Cover of Water                                       |
| Total Covers  50% of total covers  50% of total covers  50% of total covers  FEGETATION (use scientific names of plants  lerb Stratum ( ) Left )  1. Petasites frigidus  2. Bistorta plumosa  3. Cassiope tetragona  4. Arctagrostis datitolia  5. Stellaria longipes  6. Carex bigloweii  6. Pyrda asteriblia  6. Eriophrun vaginatum  6. Sausavrea angustifotium  6. Pedicularis labradorica  Total Covers   | x: 20.5 20 ss) Absolute % Cover 4 20 T 25 T 55 | Dominant<br>Species?              | Indicator Status  Fac U | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  — Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  — % Bare Ground — % Cover of Wetland Bryophytes — 5 Total Cover of Bryophytes — 6 % Cover of Water  Hydrophytic Vegetation Present (Y/N): |
| Total Cover 50% of total cover 50% of total cover 50% of total cover 150% of total cov | Absolute % Cover 4 20 T 25 T 25                | Dominant<br>Species?              | Indicator Status  Fac W Fac U Fac W Fac W Fac W Fac W Fac W Fac W             | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  — Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  — % Bare Ground — % Cover of Wetland Bryophytes — 5 Total Cover of Bryophytes — 6 % Cover of Water  |

| DIL PROFILE DESCRIPTION: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)  Matrix Redox Features Achdes Color (moist) Socion                       | OIL  |  | NO TES                                      | Date F   | eature II   | D  |   |  | Soil Pit Required (Y/N)  |
|---|--|--|---|--|---|--|---|--|--|
| Pethon Matrix Color (moist) % Color (moist) % Type' Loc' Texture  Notes  1  |  | E DESCRIPTION: //  | Describe                                    | the first the same of the later |   | The second secon | indicator or co   | onfirm the absence   |  |
| Color (moist) % Color (moist) % Type' Loc' Texture Notes  2 Color (moist) % Type' Loc' Texture Planting Medical Color (moist) % Type' Loc' Texture Planting Medical Color (moist) % Type' Loc' Texture Planting Medical Color (moist) % Type' Loc' M Loam 376 gravel 2.57 5/1 kg  | 11/49  |  | Describe                                    |  | d to doc  | unient the   | indicator or o  | Jimin the abound   | or inclosion,  |
| 1   2.5 y 4/2   \$5   One 4/4   \$ C  |  | Table to the same of the same  | 100   |  | 0/  | Tuno   | 1002  | Toyturo  | Notes  |
| Compared to the property of                         |  | Color (moist)  | %   | Color (moist)  | 70  | Туре   | LOC   | -  |  |
| 2.57 4/1 82 107E 4/4 \$ C M Loam 3 / Grand  2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 \$ C M Loam 4 / Grand  1.5. 1 C 2.57 4/1 82 107E 4/4 107E 5/1 8/2 107E 5/2 10 | -2   |  | 100   |  |   | 1 1-2-   |   |  | feather moss typer   |
| Comparison   Content   C                        | -5   |  | /   |  |   |  |   |  | 2 7  |
| 10   2.54   1   82   10   10   10   10   10   10   10   1   | -11  |  | 83  | 10xx 4/4-  | 5   | -  | M   | Loam   | 3 logravel.  |
| Section   Period                           | 0/   | 2.575/1  | 10  |  |   | ,  |   |  | 1  |
| Type: Co-Concentration, D-Depletion, RIM-Reduced Matrix, CS-Covered or Coated Sand Grains. *Coateon: PL-Pore Lining, M-Matrix.  YORIC SOIL INDICATORS  INDICATORS FOR PROBLEMATIC HYDRIC SOILS'  Alaska Redow (A14) A Alaska Color Change (TA4)' A Alaska Color Change (TA4)' A Alaska Hedow (IA4) Alaska Redow (                      | -13.5  | 7.54 4/1   |   | 107e 4/4 -   | 8   | C  | M   | Loam   | 46 savel   |
| Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains.  *Cocation: PL=Pore Lining, M=Matrix.  *VDRIC SOIL INDICATORS  INDICATORS FOR PROBLEMATIC HYDRIC SOILS*  Alaska Color Change (TA4)*  Alaska Alpine Swales (TA5)  Alaska Alpine Swales (TA5)  Alaska Gleyed Pores (A15)  Alaska Gleyed Pores (A16)  Alaska Gleyed Without 57 Hue alaska Gl                      | 5-16   | 2.514/1  | 82  | .,   |   |  | 4.4   |  |  |
| NDICATORS FOR PROBLEMATIC HYDRIC SOILS  | 110  | 10th 3/1   |   | 10-ce-4/4-   |   | 1  | 120 23  | 1  | 1970 gavel treen ~50   |
| Alaska Gloyed (A13) Alaska Color Change (TA4)* Alaska Color Change (TA4)* Alaska Alpine Swales (TA5) Alaska Redox (A14) Alaska Alpine Swales (TA5) Alaska Redox (A14) Alaska Alpine Swales (TA5) Alaska Alaska Alpine Swales (TA5) Alaska Gloyed Pores (A15) Alaska Alpine Swales (TA5) Alaska Gloyed Writout 5Y Hue or Redder Underlying Layer Alaska Gloyed Writout 5Y Hue o                      |  |  | etion, RI                                   | M=Reduced Matrix,  | CS=Cov  | ered or Co   | ated Sand G   |  | The state of the s |
| Alaska Alpine Swales (TA5)  Alaska Gleyed Pores (A15)  Alaska Redox with 2.5Y Hue  Alaska Gleyed Without 2.5Y Hue or Redder Underlying  Layer  Other (Explain in Notes),  Isots The appear to be directly a seasonal float or state of the appearance of the seasonal float or state of the seasonal float or seasonal flo                      | YDRIC SOIL   | LINDICATORS  |   |  |   |  |   | THE PERSON NAMED IN COLUMN TWO IS NOT THE OWNER.   |  |
| Alaska Gleyed Pores (A15)  Alaska Gleyed Pores (A15)  Alaska Gleyed Without SY Hue or Redder Underlying Layer  Other (Explain in Notes)   | stosol or His  | stel (A1)/\  |   | ALCOHOLOGICA CONTRACTOR CONTRACTO |   |  | -   |  |  |
| Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Surface (A12) Differ (Explain in Notes) Differ Marks (B1) Depth (in):  Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Gleyed without 5Y Hue or Redder Underlying Layer Alaska Gleyed without 5Y Hue or Redder Underlying Chief (Explain in Notes):  Depth (in): Alaska Gleyed without 5Y Hue or Redder Underlying Chief (Explain in Notes):  Depth (in): Alaska Gleyed without 5Y Hue or Redder Underlying Chief (Explain in Notes):  Alaska Gleyed without 5Y Hue or Redder Underlying Chief (Explain in Notes):  Depth (in): Alaska Gleyed without 5Y Hue or Redder Underlying Chief (Explain in Notes):  Depth (in): Alaska Gleyed without 5Y Hue and appropriate landscape position must be present (Y/N):  Depth (in): Alaska Gleyed without 5Y Hue and appropriate landscape position must be present (Y/N):  Depth (in): Alaska Gleyed without 5Y Hue and appropriate landscape position in Notes):  Depth (in): Alaska Gleyed without 5Y Hue and appropriate landscape position in Notes):  Depth (in): Alaska Gleyed without 5Y Hue and appropriate landscape position in Notes):  Depth (in): Alaska Gleyed without 5Y Hue and appropriate landscape position in Notes):  Depth (in): Alaska Gleyed without 5Y Hue and appropriate landscape position in Notes):  Depth (in): Alaska Gleyed without 5Y Hue and appropriate landscape position in Notes):  Depth (in): Alaska Gleyed without 5Y Hue an                      | stic Epipedo   | on (A2) 🗸  |   |  | -   | William Co. Co.  | 17  | The second secon | BLACK STATE OF THE |
| Layer Dother (A1)   | lack Histic (/   | A3)  |   | Alaska Gleye   | ed Pores  | (A15)  |   |  |  |
| Other (Explain in Notes)  | ydrogen Sul  | Ifide (A4)   |   |  |   |  |   |  | d without 5Y Hue or Hedder Underlying  |
| One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless isturbed or problematic.  Jaive details of color change in Notes.  Joets (first or present): Type: Percentage of Depth (inches): 13.5  Lestrictive Layer (if present): Type: Percentage of Depth (inches): 13.5  Lydric Soil Present (Y/N): A marginal Concentrations are not associated with pare lands or present unless and the present of the direct o                      |  |  |   |  |   |  |   |  | n in Notes)  |
| Saturation (A3) Surface Water (A1) Surface Soil Cracks (B6) Surface Water Marks (B1) Mary Notes (B2) Mary Vegetated Concave Surface (B8) Mary Notes (B3) Mary Notes (B4) Mary Notes (B5) Mary Notes (B4) Mary                       |  |  | etation.                                    | one primary indicato   | or of wetla   | and hydrole  | ogy, and an a   |  |  |
| Depth (inches): 13.5  Lydric Soil Present (Y/N):  | isturbed or p  | oroblematic.   | otes  |  |   |  |   |  |  |
| Sectiment Deposits (B2)  Water Table (B2)  Water Table (B2)  Water Table (Ca)  Depth (in):  Water Table (Ca)  Water Table (Ca)  Water Table (Ca)  Depth (in):  Water Table (Ca)  Depth (in):  Water Table (Ca)  Depth (in):  Water Table (Ca)  Water Table (Ca)  Water Table (Ca)  Water Table (Ca)  Depth (in):  Water Table (Ca)  Depth (in):  Water Table (Ca)  Water Table (Ca)  Water Table (Ca)  Water Table (Ca)  Depth (in):  Depth (in):   | The second second second second  | () ( T   | 20: 12-                                     | rmatrost   | Depth (   | inches):   | 13.5  |  | the second secon |
| Surface Soil Cracks (B6) Water-stained Leaves (B9) Candada or Stressed Plants (D1) Geomorphic Position (D2) Auturation (A3) Sparsely Vegetated Concave Surface (B8) Concave Surface (B9) Concave Surfa                      |  |  |   | . I Con  | cent  | ations   | were  | to be do   | wenth pore linings or  |
| Surface Water (A1) Surface Soil Cracks (B6) Water-stained Leaves (B9) Genorphic Position (D2) Stunted or Stressed Plants (D1) Genorphic Position (D2) Stunted or Stressed Plants (D1) Genorphic Position (D2) Stunted or Stressed Plants (D1) Genorphic Position (D2) Genorphic Position (D3) Genorphi                      | ydric Soil Fotos: Alp  | Present (Y/N): No place alpha post + table. Satu   | - Mar                                       | Sinal Com 100 10 15 Spotty Dry condition   | ts. 7 star  | There are fing a   | pear at 13. no station.   | to be dri<br>cles below<br>Soil has lo<br>able early   | the mineral soil surfaces moisture content above in the growing scasor   |
| Surface Water (A1) Surface Soil Cracks (B6) Leaves (B9) Plants (D1) Leaves (B9) Plants (D1) Leaves (B9) Plants (D1) Plants (D1) Leaves (B9) Plants (D1) Plants (D1) Leaves (B9) Plants (D1) Plants (D1                      | Jotes: Alp<br>50% Alp<br>Le fros-  | Present (Y/N): No phe alpha post table, Saturnay wet post  | - Mar<br>sitive<br>pretion                  | 100 In Spotty Dry condition will occur s. Reduction  | ts. 7 starons. A above  | There are the saturate the   | pear at 13 incomes frost to be lie  | to be dri<br>cles below<br>Soil has le<br>when early<br>noted here   | the mineral soil surfaces on the mineral soil surfaces on tent above in the growing scasover - steeper convex slope  |
| Saturation (A3) Sparsely Vegetated Concave Surface (B8) Sparsely Vegetated Concave Surface (B8) Sparsely Vegetated Concave Surface (B8) Shallow Aquitard (D3) Shallow Aquitard (D4) Shallow Aquitard (                      | Jydric Soil F<br>Jotes: Alp<br>So To Alp<br>he fros-   | Present (Y/N): No phe alpha post table, Saturnay wet post  | - Mar<br>sitive<br>pretion                  | 100 In Spotty Dry condition will occur s. Reduction  | ts. 7 starons. A above  | There are the safe the seers the   | ere rolling to the line secondary   | to be dri<br>cles below<br>Soil has lo<br>where early<br>inter here<br>Y INDICATORS  | the mineral soil surfaces on the mineral soil surfaces on tent about in the growing scasor - steeper convex slope (2 or more required)   |
| Sediment Deposits (B2)  | Iydric Soil F<br>lotes: Alp<br>50% Alp<br>he fros-   | Present (Y/N): No pose alpha pos<br>the alpha pos<br>the table. Satur<br>sing wet pos<br>ty PRIMARY INDICA   | - Mar<br>sitive<br>retion<br>eriod<br>ATORS | Dry condition  S. Reduction  (any one indicator is   | ts. 7 star  | There are the start the  | pear of 13 income of 15 be line  SECONDAR  Water-staine   | to be dri<br>cles below<br>Soil has lo<br>when early<br>anted here<br>Y INDICATORS   | the mineral soil surfaces on the mineral soil surfaces on tent about a the growing scasor - steeper contex slope (2 or more required)  Stunted or Stressed   |
| Mari Deposits (B1)  | Indices: Alpha Solo Alpha fros-  | Present (Y/N): No Present (Y/N): No Pha alpha post table, Saturnay wet proposer (A1) Ser (A1)  | - Mai                                       | Dry condition  S. Reduction  (any one indicator is  urface Soil Cracks (  nundation Visible on   | star<br>ons. A<br>abov<br>sufficier<br>B6) _ ~  | There are the sector that the sector the   | pear  If B incompany  Frost to  SECONDAR  Water-staine Leaves (B9)  | to be dri<br>ches below<br>Soil has lo<br>white early<br>anter here<br>Y INDICATORS  | the mineral soil surface moisture content about in the growing scasor - steeper conjex sloper (2 or more required)  Stunted or Stressed Plants (D1)  |
| Drift Deposits (B3) Dry-Season Water Table (C2) Season and during periods of verticet (TSO 72) startion Deposits (B5) Depth (in):   | Notes: A 1 P<br>So To A 1 P<br>Lee fros-<br>HYDROLOG<br>Surface Water T  | Present (Y/N): A pose ha alpha pose table, Satura wet pose y PRIMARY INDICATED (A1) A  | - Mar                                       | Dry condition  S. Reduction  (any one indicator is  urface Soil Cracks ( nundation Visible on  parsely Vegetated   | starions. A arial In  | There are the sector that  | Fresh de SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rhi Living Roots                                    | to be drivers below Soil has low early indicators of thems (B10)   | the mineral soil surfaces of the growing scasor of the growing scanor of the growing scanor of the growing scanor of the growing scasor of the growing scanor of the growing scan |
| Water Table (V2) D  Season and doring periods of very set weather. A she alsh a positive (~50%) started (~50%)                       | Notes: A 1 P So To A 1 P So To A 1 P P P P P P P P P P P P P P P P P P   | Present (Y/N): Neha alpha poset table, Satura wet poset primary indicate (A1) &  Table (A2) New A3) New A3)  | - Mai                                       | Dry condition  S. Reduction  (any one indicator is  urface Soil Cracks ( nundation Visible on  37)  parsely Vegetated concave Surface (B8  | star ons. A above a per sufficient B6) _ A Aerial Im  | There are the sector that  | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rhi Living Roots Presence of                                 | to be drivers below Soil has low white be early indicators of thems (B10)  | the mineral soil surface on the mineral soil surface on tent about a surface on tent about a straight of the growing scasor of the growing scan  |
| Algal Mat or Crust (B4) Other (Explain in Notes):    Weather. Alghe alghe Positive (~80%) stee at 13 inches below the mineral soil surface  | Hydric Soil F<br>Notes: A 1 P<br>So To A 1 P<br>HYDROLOG<br>Surface Water<br>High Water T<br>Saturation (A<br>Water Marks  | Present (Y/N): Neha alpha pos<br>pha alpha pos<br>t table, Saturate pos<br>y PRIMARY INDICA<br>er (A1) A<br>Table (A2) N   | - Mar                                       | (any one indicator is urface Soil Cracks (nundation Visible on parsely Vegetated concave Surface (B8)  | star ons. A above a per sufficient B6) _ A Aerial Im  | There are the sector that  | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rhi Living Roots Presence of Iron (C4)                       | to be drivers below Soil has lead the early indicators of the control of the cont | the mineral Soil Surface The mineral Soil Surface The mineral Soil Surface The growing scasor The growing sc |
| Surface Water Present (Y/N):  Water Table Present (Y/N):  Depth (in):  Depth (in):  Depth (in):  Depth (in):  Depth (in):  Depth (in):  EC:   | Hydric Soil F Notes: A 1 P Soil All Formal All Hydrocog Hydrocog Surface Water High Water T Saturation (A Water Marks Sediment De  | Present (Y/N): No Present (Y/N): No Pha alpha Post Alph | - Mar                                       | (any one indicator is urface Soil Cracks (nundation Visible on parsely Vegetated concave Surface (B8)  Marl Deposits (B15)  Lydrogen Sulfide Odor (C1)   | starions. Nabov   | There are the safe the cors the  | SECONDAR Water-staine Leaves (B9) Drainage Pa Oxidized Rhi Living Roots Presence of Iron (C4) Salt Deposits Notes:  | to be driver below Soil has leadle early indicators of the carry indicators of the carry indicators (B10)  | the mineral soil surfaces of most of the mineral soil surfaces of the mineral solvers of the min |
| Water Table Present (Y/N):  Depth (in):  Depth (in):  Depth (in):  Depth (in):  EC:   | Hydric Soil F  Hotes: A 1 / So Zo Zo A 1 / So Zo Zo A 1 / So Zo  | Present (Y/N): No present (Y/N): No place alpha post of table, Saturated the present of table, Saturated the present of table (A2) when the present of table (A2) when table (A2) when table (B1) when table (B2) when table (B2) when table (B3) when table ( | - Mar                                       | (any one indicator is urface Soil Cracks (inundation Visible on Bar) Sparsely Vegetated concave Surface (B8 Marl Deposits (B15) Sydrogen Sulfide Odor (C1) Sury-Season Vater Table (C2)  | starions. A arial In  | There are the course the course the  | SECONDAR Water-staine Leaves (B9) Drainage Par Oxidized Rhi Living Roots Presence of Iron (C4) Salt Deposits Notes: | to be drivered below Soil has be low Soil has be sold early interest (B10)   | the mineral Soil Surface  The mineral Soil Surface  The mineral Soil Surface  The mineral Soil Surface  The growing scasor  Th |
| Water Table Present (Y/N):  Depth (in):  Depth (in):  Depth (in):  Depth (in):  EC:   | ydric Soil Foots: A 1 p So Zo A 2 p So Zo A 2 p So Zo A 2 p So Zo  | Present (Y/N): No present (Y/N): No place alpha post of table, Saturated the present of table, Saturated the present of table (A2) when the present of table (A2) when the present of table (B2) when t | - Mar                                       | (any one indicator is urface Soil Cracks (inundation Visible on Bar) Sparsely Vegetated concave Surface (B8 Marl Deposits (B15) Sydrogen Sulfide Odor (C1) Sury-Season Vater Table (C2)  | starions. A arial In  | There are the course the course the  | SECONDAR Water-staine Leaves (B9) Drainage Par Oxidized Rhi Living Roots Presence of Iron (C4) Salt Deposits Notes: | to be drivered below Soil has be low Soil has be sold early interest (B10)   | the mineral Soil Surface  The mineral Soil Surface  The mineral Soil Surface  The mineral Soil Surface  The growing scasor  Th |
| Water Table Present (Y/N):  Saturation Present (Y/N):  Depth (in):  Depth (in):  EC:  | Iydric Soil F  Jotes: A 1 / So 7 A 1 / So 8 A 1 / So 8 A 1 / So 8 A 1 / So 9  | Present (Y/N): No present (Y/N): No place alpha post of table, Saturated wet present (A1) and present (A2) and present (B2) and present (B2) and present (B3) and present (B4) a | The man                                     | (any one indicator is urface Soil Cracks (Barl Deposits (B15) one indicator is urface indicator in its original | starions. Nabov approximately | There are the course the course the  | SECONDAR Water-staine Leaves (B9) Drainage Par Oxidized Rhi Living Roots Presence of Iron (C4) Salt Deposits Notes: | to be drivered below Soil has be low Soil has be sold early interest (B10)   | the mineral Soil Surface  The mineral Soil Surface  The mineral Soil Surface  The mineral Soil Surface  The growing scasor  Th |
|   | Iydric Soil F  Jotes: A 1 / So 7 A 1 / So 8 A 1 / So 8 A 1 / So 8 A 1 / So 9  | Present (Y/N): No present (Y/N): No place alpha post of table, Saturated wet present (A1) and present (A2) and present (B2) and present (B2) and present (B3) and present (B4) a | The man                                     | (any one indicator is urface Soil Cracks (Barl Deposits (B15) one indicator is urface indicator in its original | starions. Nabov approximately | There are the course the course the  | Presence of Iron (C4)  Salt Deposits  Notes: Salt Season a weather at 13 needs                                      | to be driver below Soil has be low Soil has be with early with the soil has be with the soil has been below the soil has been below the soil has been below  | the mineral soil surfaces monstore content about the growing scasor - steeper context stope (2 or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic moderate Relief (D4) tossels  FAC-Neutral Test (D5)    accur early in the groper solution for the groper solution (D5)    accur early in the groper solution (D5)   |
|   | Hydric Soil F Notes: A 1 P Soil A | Present (Y/N):  | - Mar                                       | (any one indicator is urface Soil Cracks (inundation Visible on 37)  parsely Vegetated concave Surface (B8 Marl Deposits (B15)  lydrogen Sulfide Odor (C1)  Dry-Season Vater Table (C2)  Depth (in):   | starions. A asbov   | There are the course the course the  | Presence of Iron (C4)  Salt Deposits  Notes: Salt Season a weather at 13 needs                                      | to be driver below Soil has be low Soil has be with early with the soil has be with the soil has been below the soil has been below the soil has been below  | the mineral soil surfaces monstore content about the growing scasor - steeper context stope (2 or more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic moderate Relief (D4) tossels  FAC-Neutral Test (D5)    accur early in the groper solution for the groper solution (D5)    accur early in the groper solution (D5)   |

## AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M  | = Matrix   |                                   |  |   |
|--|--|-----------------------------------|--|---|
| Primary Vegetation Type (P): Vegetation La Forested-Evergreen-Needle-leaved Scrub Shrub-Evergreen-Broad-leaved Persistent Aquatic Bed  | Scrub Shrub-Deciduous-Ne Scrub Shrub-Evergreen-  | edle-leavedSo<br>Needle-leaved    | rub Shrub-Deciduous<br>Emergent-Non-persis | -Broad-leaved<br>stent Emergent-              |
| Percent Cover (P): Tree (>5 dbh, >6m tall)_<br>Dwarf shrub (<0.5m) Tall herb (≥1m  | Sapling (<5 dbh, <   | 6m tall) Tall sh<br>m) Moss-Liche | nrub (2-6m) Floating                       | Short shrub (0.5-2m)                          |
| Number of Wetland Types (M):   | Evenness of Wetland Type   | Distribution (M): Even            | Highly Unever                              | Moderately even                               |
| Vegetation Density/Dominance (P): Sparse (80%) Very High Density (80-100%)_  | 0-20%) Low Dens  |                                   |  |   |
| Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattered   | 100% Cover or Open Water<br>or Peripheral Cover_   | <25% Scatte                       | ed/Peripheral Cover_                       | 26-75% Scattered or                           |
| Plant Species Diversity (P): Low (< 5 plant s  | pecies) Medium (   | 5-25 species)                     | High (>25)                                 |   |
| Presence of Islands (M): Absent (none)   | Control of the Contro |                                   |  |   |
| Cover Distribution of Dominant Layer (P): Open Small Scattered Patches   | No Veg Soliton   | Coottoned Cham                    |  |   |
| Dead Woody Material (P): Low Abundance (CAbundant (>50% of surface)  | )-25% of surface)  | Moderately Abundant (2            | 5-50% of surface)                          |   |
| <b>Vegetative Interspersion (P):</b> Low (large prings) High (small groupings, diverse and intersperse   | patches, concentric rings)   | Moderate (broke                   | en irregular rings)                        |   |
| HGM Class (P): Slope Flat  | Lacustrine Fringe  | Depressional                      | Riverine                                   | Estaurine Fringe                              |
| SOIL VARIABLES   |  |                                   |  | *   |
| Soil Factors (P): Soil Lacking H   | distosol: Fibric   | tood:Homis                        | Fata de Contra                             |   |
| Mineral: Gravelly Mineral: Sandy   |  | tosol:Hemic I<br>Mineral: Clayey  | Histosol: Sapric                           |   |
| HYDROLOGIC VARIABLES   |  |                                   | Marine Designation                         |   |
| Outlet Intermittent Inlet/Intermittent Coulet Perennial Inlet/Intermittent Outlet Perennial Inlet/Intermittent Inlet/In  | Juliei   | No Inlet/Pere                     | nnial Outlet<br>Perennial Inlet            | Intermittent Inlet/No<br>/No Outlet Perennial |
| Wetland Water Regime (P): Drier: Season<br>Wet: Perm. Flooded, Intermittently Exposed, Se  | miperm. Flooded  | 1                                 | _  |   |
| Evidence of Sedimentation (P): No Evidence<br>Created  | Observed Sedim   | ent Observed on Wetland           |  | Fluvaquent Soils Sediment                     |
| Microrelief of Wetland Surface (P): Absent   | Poorly Developed (6in  | n.) Well Develo                   | ped (6-18in.)                              | Pronounced (>18in.)                           |
| Frequency of Overbank Flooding (P): No Overb | erbank Flooding F  | Return Interval 1-2 yrs           | Return Interv                              |   |
| Degree of Outlet Restriction (P): No Outflow_  | Restricted Outflow   | Unrestricted                      | Outflow                                    |   |
|  | umneutral (5.5-7.4)  | Alkaline (>7.4)                   | _ Acid (<5.5)                              | pH Reading                                    |
| Surficial Geologic Deposit Under Wetland (P<br>Glacial Till/Not Permeable  |  | d Deposits Lov                    | v Permeability Stratifi                    | ed Deposits                                   |
| Basin Topographic Gradient (M): Low Gr<br>Evidence of Seeps and Springs (P): No Seeps  |  | h Gradient (≥2%)                  |  |   |
| gs (1). No deeps   | s of Springs Seeps (   | Observed Interm                   | ittent Spring                              | Perennial Spring                              |
| LANDSCAPE VARIABLES (M)  |  |                                   |  |   |
| Wetland Juxtaposition: Wetland Isolated  | Wetlands within 4  Jpstream & Downstream   | 00m, Not Connected                | Only Connect                               | ed Below                                      |
| Wetland Land Use: High Intensity (i.e., ag.  |  | sity (i.e., forestry)             | Low Intensity (i.e                         | open space)                                   |
| Watershed Land Use: 0-5% Rural   | 5-25% Urbanized  | 25-50% Urbanized                  | >50% Urba                                  |   |
| Size: Small (<10 acres) Medium   | 7.00-11.00 COMMON.   | arge (>100 acres)_                | 200% 0108                                  | 11126U  |
| Crew Chief QA/QC check:  | GDS Toohnio  |                                   | 11/1/1                                     |   |

Page 4 of 4

#### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

|         | 1641D0666 16066 2/10/15  |
|---------|--|
|         | e ID: W84PA668 Field Target: 15 76 Date: 476715  |
| ror all | items not checked, please provide detailed explanation in the notes section of data form.  |
|         |  |
| 1.      | Site Description   |
|         | <ul> <li>Site description, site parameters and summary of findings are complete?</li> <li>A detailed site sketch is included in logbook?</li> </ul>  |
| 2.      | Vegetation   |
|         | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  Vegetation names are entered legibly for all strata present?  Cover calculations are complete and correct?  All dominant species have been determined and recorded per strata?  Indicator status is correct for each species?  Dominance Test and Prevalence Index have been completed? |
| 3.      | Soil   |
|         | Soil profile is complete?  Appropriate hydric soil indicators are marked?  |
| 4.      | Hydrology  |
|         | Appropriate hydrology indicators are marked?  Surface water, water table, and saturation depths are recorded if present?   |
| 5.      | Functions and Values   |
|         | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6.      | Field Logbook  |
|         | <ul> <li>☑ Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?</li> <li>☑ Each logbook page is initialed and dated?</li> </ul>   |
| 7.      | Maps   |
|         | Wetland boundaries have been corrected if necessary?  Maps are initialed and dated?  |

#### 8. Photos

- Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?
- Two photos were taken for each Observation Point (vegetation/site overview)?

X Abigay Fisher X Malle Flore
Wetland Scientist (print) Signature / Date

Field Crow Chief (next)

ield Crew Chief (print)

Signature / Date

7/10/15

| SITE DESCRIPTION   |  |               |                         |                  |                           |                                      |  |
|--|--|---------------|-------------------------|------------------|---------------------------|--------------------------------------|--|
| Survey Type: Centerline Acces  | ss Road (explain)  | Other (expla  | ain)                    | Field Targ       | et: 15239                 | Map #:Map Date:                      |  |
| Date: 7/10/15  | Project Name & No.:  | Alaska LNG    | LNG 60418403 Feature Id |                  |                           | WKYPAOD9                             |  |
| Investigators: Bryan Stra  | ong, Abigayle  | Fishe         | rec                     |                  |                           | Team No.: W84                        |  |
| State: Alaska  | Region: Alaska   |               | Milepost: 96,95         |                  |                           |                                      |  |
| Latitude: 69000 27.11  | ()   | Longitude     | 148051                  | 12.78            | PIN                       | Datum: WGS84                         |  |
| Logbook No.:   | Logbook Page No.:  | 44            | Picture No.:            | PW80             | PAOO                      | 19_VEG_VEG_PITS                      |  |
| SITE PARAMETERS  |  |               |                         |                  |                           |                                      |  |
| Subregion: A (cf. c tooth  | alls   |               | Landform (hil           | Islope, terrac   | e, hummocks               | s, etc.): R. Ise-near shoul          |  |
| 01 100 100   | spect: East  | 830           | Local relief (c         |                  |                           |                                      |  |
| Pre-mapped Alaska LNG/NWI classifica   |  | 11C2 11A      |                         |                  | Coiche                    | uscat                                |  |
| Are climatic/hydrologic conditions on the Yes No (if no expl   | 기계가 하고 있는데 가는 아이를 하면 하는데 | of year?      | Are "No                 |                  | stances" pre              | sent: Dry conditions                 |  |
| Are Vegetation, Soil, or Hyd   | 21410  | dy Disturbed? | Yes                     | (If ves. exp     | lain in Notes             | plain in Notes.)                     |  |
| Are Vegetation, Soil, or Hyd   |  | Problematic?  | No Y                    |                  | lain in Notes             |                                      |  |
| SUMMARY OF FINDINGS  |  |               |                         |                  | 13 M X 6 / 5              |                                      |  |
| Hydrophytic Vegetation Present? Yes_   | Y No   | Is t          | the Sampled A           | Area within a    | Wetland?                  | YesXNo                               |  |
| Hydric Soil Present? Yes   | morginal No  | We            | etland Type:            | PEMI/SS          | IB .                      | uxed shrub-sedge tusso               |  |
| Wetland Hydrology Present? Yes_  | У Nо   | Ala           | ska Vegetation          | n Classification |                           | 11142, 11 D2                         |  |
| Notes and Site Sketch: Please include Decorridor.  Nery marginal site material. This mineral assumed early in the recommended. | A horizon  A horizon  Coming Se                              | over H        | mixed (                 | t table          | ates)<br>e. Dry<br>et pen | with A and C<br>conditions. Saturate |  |

| VEGETATION (use scientific names of plants | )                       |                               |                     |  |
|--|-------------------------|-------------------------------|---------------------|--|
| Tree Stratum (Plot sizes: WOFT)            | Absolute<br>% Cover     | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC:   |
| 1.   |                         |                               |                     | % Dominant Species that are OBL, FACW, or FAC: (A/B)   |
| 2.   |                         |                               |                     | % Dominant Species that are Obt., FACW, OF FAC (AB)  |
| 3.   |                         |                               |                     |  |
| 4.   |                         |                               |                     | Prevalence Index worksheet:  |
| Total Cover:                               | Consideration and Party |                               |                     | Total % Cover of: Multiply by:   |
| 50% of total cover:                        | 20                      | % of total cov                | er:                 | OBL species: X 1 =   |
| Sapling/Shrub Stratum ( 26 f4 )            | Absolute<br>% Cover     | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | FACW species:  |
| 1. Varcinium vitis-daea                    | 20 dosum 13             | Y                             | Fac                 | UPL species $X5 = $ Column Totals: $A = $    |
| 3. Salx reticulata                         |                         | 126                           | Fac                 | PI = B/A = 7.419   |
| 4. Francetrum Nichtum                      | 10                      |                               | Fac                 | Shrub 0  |
| 5. Vaccinium with rosum                    | 2                       | t Ing                         | Fac                 | Andromeda polifolia Fach   |
| 6. Botula nand                             | 8                       | 14 m                          | Fac                 | The second secon |
| 7. Salix poliches                          | 1                       |                               | Fach                |  |
| 8. Artous ruber                            | 7                       |                               | Fac 1               |  |
| 9. Salix Phtehophela                       | T                       |                               | FacU                |  |
| Total Cover:                               | 95                      |                               |                     |  |
| 50% of total cover                         | 77.5 20                 | % of total cov                | er:\\               | The all parties at the second  |
| VEGETATION (use scientific names of plants | )                       |                               |                     |  |
| Herb Stratum ( 26 Fl)                      | Absolute<br>% Cover     | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%  |
| 1. Eriaphorum vaainatum                    | 47                      | Y                             | Farly               | Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in  |
| 2. Bistocta Dlumpsa                        | 3                       |                               | Fact                | Notes)   |
| 3. Cassiope tetragona                      | 7                       | 1                             | FacU                | Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)  |
| 4. Carex base baris                        | 12                      |                               | Fac                 | Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.   |
| 5. Pediculosis sp.                         | T                       |                               |                     | disturbed of problematic.  |
| 6. Pedicularis capitata                    |                         |                               | FacU                | % Bare Ground  |
| 7.   |                         |                               |                     | % Cover of Wetland Bryophytes  |
| 8.   |                         |                               |                     |  |
| 9.   |                         |                               |                     | % Cover of Water   |
| 10.  |                         |                               |                     | Hydrophytic Vegetation Present (Y/N):  |
| Total Cover                                | 61                      |                               | 00                  | Notes: (If observed, list morphological adaptations below):  |
| 50% of total cover                         | 30.5 20                 | % of total cov                | ver: 1 d. d         | Schag num se 10  |
| 5  |                         |                               |                     | Mass 60  |
| 1.1  |                         |                               |                     | Lichen 15  |
|  |                         |                               |                     | hitter 11.   |

| COIL DOOF  | AND DESCRIPTION OF THE PERSON NAMED IN CO.   |  | Date Feature ID  |  | Bronder of the land of the  | Soil Pit Required (Y/N)_   |
|--|--|--|--|--|---|--|
| SUIL PROF  | ILE DESCRIPTION: (   | Describe   | to the depth needed to document  | the indicator or   | confirm the absen   | ce of indicators.)   |
| Depth Matrix   |  |  | Redox Features   |  |   |  |
| (inches)   | Color (moist)  | %  | Color (moist) % Type   | e <sup>1</sup> Loc <sup>2</sup>  | Texture   | Notes  |
| 5-5  |  |  |  |  | heme  |  |
| 5-8  | 1012 2/2   | 100  |  |  | SIL   | not quite mucky SIL  |
|  |  |  |  |  |   |  |
| 8-16   | 1072 2/1   | 15   | -  |  |   | ice leases through   |
|  | 2.5-15/1   | 10   |  |  |   | 1/4" ice leases at the   |
|  | 7.5-122.5/2  |  | -Organic fibers  |  |   | of the frost table.  |
|  | No. 100  |  |  |  | II II E   | alpha positive ~602  |
| <sup>1</sup> Type: C=C   | Concentration, D=Deple   | etion, RN  | M=Reduced Matrix, CS=Covered o   | r Coated Sand G  | rains. <sup>2</sup> Location  | n: PL=Pore Lining, M=Matrix.   |
| HYDRIC SC  | OIL INDICATORS   |  | NOTE OF THE PARTY  |  | INDICATORS  | FOR PROBLEMATIC HYDRIC SOIL  |
| Histosol or H  | Histel (A1) N  | TOP  | Alaska Gleyed (A13)  |  | A THE RESIDENCE AND ADDRESS OF THE PARTY OF | Change (TA4) <sup>4</sup>  |
|  | don (A2)   | F 55"  | Alaska Redox (A14) _   |  |   | Swales (TA5)   |
| V 100 100 100 100 100 100 100 100 100 10   | (A3) \( \lambda \)   | Spot   | Alaska Gleyed Pores (A15)  | N) .   | -   | with 2.5Y Hue  |
|  | ulfide (A4) _ ~  |  |  |  | C - VIANT OF SHEET SHEET  | d without 5Y Hue or Redder Underlyin   |
|  |  | angeta.  | is Ma tale to him to be  |  | Layer_ ~  | And a section of the second  |
|  | Surface (A12)  |  |  |  | Other (Explain  | n in Notes) Resucce and cape position must be present unless   |
| Restrictive L  | s of color change in No<br>ayer (if present): Typ  |  |  |  |   | Charles a man allowed  |
| Restrictive L  | ayer (if present): Typ   |  |  |  | itated hospital minterial Mi  | ost of   |
| Hydric Soil Notes: A   | Present (Y/N):   | Mero<br>Dosi   |  | frozen m   |   | 2 or more required)  |
| Hydric Soil Notes:   | Present (Y/N):   | Marg   | rive in ~60% of .<br>Marsinal reduced  | frozen m   | Y INDICATORS (  | 1.04   |
| Hydric Soil Notes: HYDROLOG Surface Water  | Present (Y/N): Y  GY PRIMARY INDICA  ter (A1) N  Table (A2) N  | TORS (a  | A and England A  | SECONDAR Water-staine Leaves (B9) Drainage Pai   | Y INDICATORS (  | 2 or more required) Stunted or Stressed Plants (D1)  |
| Hydric Soil Notes: A 16 " (c) HYDROLOG Surface Water   | Present (Y/N): Y   | TORS (a  | any one indicator is sufficient)  rface Soil Cracks (B6) N  Indation Visible on Aerial Imagery   | SECONDAR Water-staine Leaves (B9) Drainage Pai   | Y INDICATORS (d tterns (B10)  | 2 or more required) Stunted or Stressed Plants (D1)  |
| Hydric Soil Notes: Hydric Soil Notes: HydroLoc Surface Water High Water Saturation (A  | Present (Y/N): Y  GY PRIMARY INDICA  ter (A1) N  Table (A2) N  | TORS (a  | any one indicator is sufficient)  rface Soil Cracks (B6)  undation Visible on Aerial Imagery  7) arsely Vegetated  | SECONDAR Water-staine Leaves (B9) Drainage Pat Oxidized Rhi Living Roots Presence of   | Y INDICATORS (d tterns (B10)  | Stunted or Stressed Plants (D1) Geomorphic Position (D2)   |
| Hydric Soil Notes: Hydric Soil Notes: HydroLoc Surface Water High Water Saturation (A  | Present (Y/N):   | TORS (a Su Inu (B) Co  | any one indicator is sufficient)  reface Soil Cracks (B6)  undation Visible on Aerial Imagery  7) arsely Vegetated ncave Surface (B8)  | SECONDAR Water-staine Leaves (B9) Drainage Par Oxidized Rhi Living Roots Presence of Iron (C4) Salt Deposits                     | tterns (B10) zospheres along (C3) Reduced *   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Medical (D4)  FAC-Neutral Test (D5)   |
| Hydric Soil Notes: Hydric Soil Notes: Hydric Soil Notes: Hydric Soil Hydric So | Present (Y/N): Y  GY PRIMARY INDICA  ter (A1) N  Table (A2) N  A3) N  S (B1) N   | TORS (a Su Inu Brown March Mar | any one indicator is sufficient)  rface Soil Cracks (B6) Number of the sufficient of | SECONDAR  Water-staine Leaves (B9)  Drainage Pati Living Roots  Presence of Iron (C4)  Salt Deposits  Notes:                     | tterns (B10) zospheres along (C3) Reduced & T   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Mostling Relief (D4)  FAC-Neutral Test (D5)   |
| Hydric Soil Notes: Hydric Soil Notes: Hydric Soil Notes: Hydric Soil Hydric So | Asy PRIMARY INDICA  ter (A1) N  Table (A2) N  (B1) N  eposits (B2) N   | Su Inu (B) Sp Co Mal   | any one indicator is sufficient)  rface Soil Cracks (B6)  indation Visible on Aerial Imagery  r)  arsely Vegetated incave Surface (B8)  ind Deposits (B15)  drogen Sulfide ior (C1)  y-Season  | SECONDAR  Water-staine Leaves (B9)  Drainage Par  Oxidized Rhi Living Roots  Presence of Iron (C4)  Salt Deposits  Notes:        | tterns (B10) zospheres along (C3) Reduced * ~ s (C5) _N   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Mostly Relief (D4)  FAC-Neutral Test (D5)  At the algebra of the Position   |
| Hydric Soil Notes: Hydric Soil Notes: Hydric Soil Notes: Hydric Soil Hydric So | Ayer (if present): Typ  Present (Y/N):   GY PRIMARY INDICA  ter (A1)   Table (A2)   A3)   eposits (B2)   ts (B3)   Lagrange (B2)   ts (B3)   Lagrange (B2)   Lagrange (B2)   Lagrange (B3)   Lagrange (B3)   Lagrange (B4)   L | Su Inu (B) Sp Co Mal   | any one indicator is sufficient)  reface Soil Cracks (B6)  undation Visible on Aerial Imagery  reface Surface (B8)  arsely Vegetated neave Surface (B8)  und Deposits (B15)  drogen Sulfide or (C1)  y-Season ater Table (C2)  | SECONDAR  Water-staine Leaves (B9)  Drainage Pat  Oxidized Rhi Living Roots  Presence of Iron (C4)  Salt Deposits  Notes:        | tterns (B10) zospheres along (C3) Reduced & T sc(C5) N ornal C4. To of force the force of the state          | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Mostly Relief (D4)  FAC-Neutral Test (D5)  Algue algue algue position  Algue algue algue position   |
| Hydric Soil Notes: HYDROLOG Surface Water High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or  | Asymptotic (if present): Type Present (Y/N):   | TORS (a Su Inu (B) Co Ma Hyy Od Dry Wa   | any one indicator is sufficient)  rface Soil Cracks (B6)  undation Visible on Aerial Imagery  ransely Vegetated ncave Surface (B8)  url Deposits (B15)  drogen Sulfide lor (C1)  y-Season atter Table (C2)  ther (Explain in Notes):   | SECONDAR  Water-staine Leaves (B9)  Drainage Pat  Oxidized Rhi Living Roots  Presence of Iron (C4)  Salt Deposits  Notes: Market | tterns (B10) zospheres along (C3) Reduced & T sc(C5) N ornal C4. To of force the force of the state          | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Mostly Relief (D4)  FAC-Neutral Test (D5)  FAC-Neutral Test (D5)  At the alpha Position  Lefost Hable, Satura   |
| Hydric Soil Notes: HYDROLOG Surface Wat High Water Saturation ( Water Marks Sediment De Drift Deposit Algal Mat or   | Asy PRIMARY INDICA  Table (A2)  S (B1)  Peposits (B2)  Crust (B4)  | TORS (a Su Inu (B) Co Ma Hyy Od Dry Wa   | any one indicator is sufficient)  reface Soil Cracks (B6)  undation Visible on Aerial Imagery  reface Surface (B8)  arsely Vegetated neave Surface (B8)  und Deposits (B15)  drogen Sulfide or (C1)  y-Season ater Table (C2)  | SECONDAR  Water-staine Leaves (B9)  Drainage Pat  Oxidized Rhi Living Roots  Presence of Iron (C4)  Salt Deposits  Notes:        | tterns (B10) zospheres along (C3) Reduced * ~ s (C5) N  s of fore   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Mostly Relief (D4)  FAC-Neutral Test (D5)  Algue algue algue position  Algue position  Algue algue position  Algue position |
| Hydric Soil Notes: HYDROLOG Surface Water High Water Saturation (A Water Marks Sediment De Drift Deposit Algal Mat or Iron Deposit Surface Water   | Asymptotic (if present): Type Present (Y/N):   | TORS (a Su Inu (B) Co Ma Hyy Od Dry Wa   | any one indicator is sufficient)  rface Soil Cracks (B6)  undation Visible on Aerial Imagery  ransely Vegetated ncave Surface (B8)  url Deposits (B15)  drogen Sulfide lor (C1)  y-Season atter Table (C2)  ther (Explain in Notes):   | SECONDAR  Water-staine Leaves (B9)  Drainage Pat  Oxidized Rhi Living Roots  Presence of Iron (C4)  Salt Deposits  Notes:        | tterns (B10) zospheres along (C3) Reduced * ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~ ~   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Mostly Relief (D4)  FAC-Neutral Test (D5)  Algue algue algue position  Algue position  Algue algue position  Algue position |

## AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, M= Matrix  |
|--|
| Primary Vegetation Type (P): Vegetation Lacking       Forested-Deciduous-Needle-leaved       Forested-Deciduous-Broad-leaved         Forested-Evergreen-Needle-leaved       Scrub Shrub-Deciduous-Needle-leaved       Scrub Shrub-Deciduous-Broad-leaved         Scrub Shrub-Evergreen-Broad-leaved       Scrub Shrub-Evergreen-Needle-leaved       Emergent-Non-persistent         Persistent       Aquatic Bed   |
| Percent Cover (P): Tree (>5 dbh, >6m tall)         Sapling (<5 dbh, <6m tall)         Tall shrub (2-6m)         Short shrub (0.5-2m)         Short shrub (0.5-2m)           Dwarf shrub (<0.5m)  |
| Number of Wetland Types (M): Evenness of Wetland Type Distribution (M): Even Highly Uneven Moderately even   |
| Vegetation Density/Dominance (P):         Sparse (0-20%)         Low Density (20-40%)         Medium Density (40-60%)         High Density (60-80%)           80%)         Very High Density (80-100%)         X   |
| Interspersion of Cover & Open Water (P): 100% Cover or Open Water <a href="#">25% Scattered/Peripheral Cover</a> <25% Scattered/Peripheral Cover 26-75% Scattered or Peripheral Cover  |
| Plant Species Diversity (P): Low (< 5 plant species) Medium (5-25 species) High (>25)  |
| Presence of Islands (M): Absent (none) One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site Open Small Scattered Patches Continuous Cover  |
| Dead Woody Material (P): Low Abundance (0-25% of surface) Moderately Abundant (25-50% of surface) Abundant (>50% of surface)   |
| Vegetative Interspersion (P): Low (large patches, concentric rings) Moderate (broken irregular rings) High (small groupings, diverse and interspersed)   |
| HGM Class (P): Slope FlatK Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
| SOIL VARIABLES   |
| Soil Factors (P): Soil Lacking Histosol:Fibric Histosol:Hemic Histosol: Sapric Mineral: Gravelly Mineral: Sandy Mineral: Silty Mineral: Clayey   |
| HYDROLOGIC VARIABLES   |
| Inlet/Outlet Class (P): No Inlet/Outlet No Inlet/Intermittent Outlet No Inlet/Intermittent Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Outlet Perennial Inlet/Intermittent Outlet Perennial Outlet Perennial Outlet Inlet/Intermittent Outlet Perennial Inlet/Intermittent Outlet Perennial Outlet Perenn |
| Wetland Water Regime (P): Drier: Seasonally Flooded, Temporarily Flooded, Saturated Wet: Perm. Flooded, Intermittently Exposed, Semiperm. Flooded  |
| Evidence of Sedimentation (P): No Evidence Observed Sediment Observed on Wetland Substrate Fluvaquent Soils Sediment Created   |
| Microrelief of Wetland Surface (P): Absent Poorly Developed (6in.) Well Developed (6-18in.) Pronounced (>18in.)  |
| Frequency of Overbank Flooding (P): No Overbank Flooding Return Interval 1-2 yrs Return Interval 2-5 yrs Return Interval >5 yrs  |
| Degree of Outlet Restriction (P): No Outflow Restricted Outflow Unrestricted Outflow   |
| Water pH (P): No surface water_         ◯         Circumneutral (5.5-7.4)         Alkaline (>7.4)         Acid (<5.5)         pH Reading   |
| Surficial Geologic Deposit Under Wetland (P): High Permeability Stratified Deposits Low Permeability Stratified Deposits Glacial Till/Not Permeable  |
| Basin Topographic Gradient (M): Low Gradient (<2%) High Gradient (≥2%)   |
| Evidence of Seeps and Springs (P): No Seeps or Springs Seeps Observed Intermittent Spring Perennial Spring   |
| I AND CORPE VARIABLE COM   |
| Wetland Juxtaposition: Wetland Isolated Wetlands within 400m, Not Connected Only Connected Below   |
| Only Connected Above Connected Upstream & Downstream Unknown   |
| Wetland Land Use: High Intensity (i.e., ag.) Moderate Intensity (i.e., forestry) Low Intensity (i.e. open space)   |
| Watershed Land Use: 0-5% Rural 5-25% Urbanized 25-50% Urbanized >50% Urbanized   |
| Size: Small (<10 acres) Medium (10-100 acres) Large (>100 acres)   |
| Crew Chief QA/QC check:  GPS Technician QA/QC check:   |

### Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Featu | ıre | ID: <u>W89PA009</u> Field Target: <u>15 239</u> Date: <u>7 /10 /15</u>   |
|-------|-----|--|
|       |     | ems not checked, please provide detailed explanation in the notes section of data form.  |
|       |     |  |
| 1     |     | Site Description   |
|       |     | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included in logbook?  |
| 2     | 2.  | Vegetation   |
|       |     | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  Vegetation names are entered legibly for all strata present?  Cover calculations are complete and correct?  All dominant species have been determined and recorded per strata?  Indicator status is correct for each species?  Dominance Test and Prevalence Index have been completed? |
| 3     | 3.  | Soil   |
|       |     | Soil profile is complete?  Appropriate hydric soil indicators are marked?  |
| 4     | 4.  | Hydrology  |
|       |     | Appropriate hydrology indicators are marked?  Surface water, water table, and saturation depths are recorded if present?   |
|       | 5.  | Functions and Values   |
|       |     | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
|       | 6.  | Field Logbook  |
|       |     | Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?   |
|       | 7.  | Maps   |
|       |     | Wetland boundaries have been corrected if necessary?   |

Maps are initialed and dated?

| 8. | P | h | 0 | to | S |
|----|---|---|---|----|---|
|    |   |   |   |    |   |

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

X About About About Signature / Date

Field Crew Chief (print)

Signature / Date

7/10/15

| SITE DESCRIPTION  |  |                         |  |  |  |  |  |
|---|--|-------------------------|--|--|--|--|--|
| Survey Type: Centerline Access Road (explain) Other (explain) Field Target: 5238 Map #: 5 Map Date: 6/29  |  |                         |  |  |  |  |  |
| Date: 7/10/15   | Project Name & No.: Alaska L                                 | NG 60418403             | Feature Id   | W84PA010   |  |  |  |
| Investigators: Bruan Str  | ones, Abigause F   | Bler                    | •  | Team No.: WSY  |  |  |  |
| State: Alaska   | Region: Alaska   | Milepost: 9             | 69   |  |  |  |  |
| Latitude: 69 00 28,49   | Longit   | ude: 148°51' (          | 95.19"W  | Datum: WGS84   |  |  |  |
| Logbook No.: 61   | Logbook Page No.:  | Picture No.:            | P_W84PA010_  | VEG VEG PIT PLU  |  |  |  |
| SITE PARAMETERS   |  |                         |  |  |  |  |  |
| Subregion: Arctic Footh   |  | Landform (hi            | Ilslope, terrace, hummock  | s, etc.) Solufluction beach/Should                                     |  |  |  |
| Slope (%): 13-15 * est  | nated  |                         |  | Convex dain; Humacky   |  |  |  |
| Pre-mapped Alaska LNG/NWI classifica  | ation: 0 1103  |                         | Wildlife Use: Caribou  |  |  |  |  |
| Are climatic/hydrologic conditions on the Yes No (if no expl  | e site typical for this time of year?<br>lain in Notes)      |                         | lormal Circumstances" pre  | esent:<br>plain in Notes.)   |  |  |  |
| Are Vegetation, Soil, or Hyd  | drology Significantly Disturb                                | ed? No                  | (If yes, explain in Notes  | )  |  |  |  |
| Are Vegetation, Soil, or Hyd  | drology Naturally Problemat                                  | tic? No $\frac{\chi}{}$ | (If yes, explain in Notes  | 3.)  |  |  |  |
| SUMMARY OF FINDINGS   |  |                         | A STATE OF THE STA |  |  |  |  |
| Hydrophytic Vegetation Present? Yes_  | No   | Is the Sampled          | Area within a Wetland?   | Yes NoX  |  |  |  |
| Hydric Soil Present? Yes_   | No   | Wetland Type:           | J  |  |  |  |  |
| Wetland Hydrology Present? Yes_   | No   | Alaska Vegetatio        | n Classification (Viereck):  | 1102,1102  |  |  |  |
| Notes and Site Sketch: Please include I corridor. Shoulder slope with Concave across slope. Glacial till remorked ericaceous shrub, Dr.  PAOOG  Tussock-shruba  tundra  PEMISSIB  IIINZ, IIDZ | th solutivation los<br>Soft frost encome<br>by slope process | tered at es. Mix o      | downslope an<br>22 inches. No s<br>of Shrub birch  | 2 undulating to slightle<br>inturation. Low chroma<br>willow and dwarf |  |  |  |

|  | nts)   |                               |  |   |
|--|--|-------------------------------|--|---|
| Tree Stratum (Plot sizes: 100 fl   | Absolute<br>% Cover  | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  | Dominance Test worksheet:  No. of Dominant Species that are OBL, FACW, or FAC: 4 (A)  |
|  | _  |                               |  | Total Number of Dominant Species Across All Strata: 4 (E  |
| 2.   |  |                               |  | % Dominant Species that are OBL, FACW, or FAC: 100 (A/  |
| 3.   |  |                               |  | A fundamental management and a second   |
|  |  |                               |  | Prevalence Index worksheet:   |
| Total Cove   | er:  |                               |  | Total % Cover of: Multiply by:  |
| 50% of total cove  | er:20  | 0% of total cov               | ver:   | OBL species: X1 = X1 =  |
| Sapling/Shrub Stratum ( 26 ft)   | Absolute<br>% Cover  | Dominant<br>Species?<br>(Y/N) | Indicator<br>Status  | FACW species: X 2 = 22  FAC species 85 X 3 = 255  |
| · Betula nana  | 38   | 4                             | Fac  | FACU species  |
| · Betula alandulosa  | 1  |                               | Face   | UPL species   |
| Empetrom nigrum  | 10   |                               | Fac  | PI = B/A = 2.97   |
| · Vaccina vitiz-dala   | 1.2  | Y                             | Fae  |   |
| Rhododendrum toment  | sum 4  |                               | Fac  | Dans octasetala 3 NPL   |
| Salix polchra  | 3  | with the                      | Factor   | Dryas octapetala 3 UPL  |
| Salix glavca   | 2  | \                             | Fac  | Archous rubor   |
| · Vaccinion ulicinosom   | 4  | 1.                            | FAC  | Arcsong moor 1 fac  |
| An order of the state of the st |  | /                             |  | · ·   |
| . Salix phlebophy la   |  | 1                             | Farl   |   |
| . Salix phlebophy la<br>Total Cove   | The state of the s |                               | FacU   |   |
| . Salix phlebophy la   | The state of the s | % of total cov                | FacU   |   |
| Salix phlebophy la<br>Total Cove   | er: 39.5 20  | % of total cov                | FacU   |   |
| Total Cove 50% of total cove   | er: 39.5 20  | % of total cov                | FacU   | Hydrophytic Vegetation Indicators:  |
| Total Cove 50% of total cove   | er: 39.5 20  | Dominant<br>Species?          | FacU er: 15.8  | Hydrophytic Vegetation Indicators:  Dominance Test is > 50%   |
| Total Cove 50% of total cove  EGETATION (use scientific names of plan erb Stratum ( 26f +)   | ar: 39 < 20 ts) Absolute % Cover   | Dominant                      | er: 15.5% Indicator Status   | 1   |
| Total Coversion of total coversi | ts) Absolute   | Dominant<br>Species?          | FacU Indicator Status FacW   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in  |
| Total Coversion of total coversi | Absolute % Cover   | Dominant<br>Species?          | Facl)  Indicator Status  Facly  Facly  | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)   |
| Total Covers 50% of total  | ar: 39 < 20 ts) Absolute % Cover   | Dominant<br>Species?          | Factor Status  Factor F | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  |
| Total Coverson Solve physical Coverson Solve philes of total coverson Solve of total coverson Stratum (26ft)  Petasites fragidus Bistorta flumosa Carex bigelouii Carriope tetragora   | Absolute % Cover   | Dominant<br>Species?          | Facl)  Indicator Status  Facly  Facly  Facly   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless  |
| EGETATION (use scientific names of plan lerb Stratum (26ft)  Petas testagalis Bistorta Humosa Carex bigelouis Cerscope tetragana Arnica Lessinais  | Absolute % Cover   | Dominant<br>Species?          | Factor Status  Factor F | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  |
| Total Covers 50% of total  | Absolute % Cover   | Dominant<br>Species?          | Facl)  Indicator Status  Facly  Facly  Facly   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.   |
| Total Covers 50% of total  | Absolute % Cover   | Dominant<br>Species?          | Facl)  Indicator Status  Facly  Facly  Facly   | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain)  ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  ———————————————————————————————————   |
| Total Coverson Solverson Solverson Solverson Stratum (26ft)  1. Petasites fragidis 2. Bistorta flumosa 2. Carex bigelouii 3. Carrica leginari 4. Carrica leginari 5. Arnica leginari 6. Pedicularis gabradori 7. Rusis change mores 8. Signara longines  | Absolute % Cover   | Dominant<br>Species?          | Factor Status  Factor Factor Factor UPL  | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  % Bare Ground  % Cover of Wetland Bryophytes   |
| Total Coverson Solvers of the Stratum (26ft)  Petasites fragides Bistorta stumosa Carex bigelouii Cerscope tetragona Arnica tessineri Cerscope tetragona Carex bigelouii  | Absolute % Cover   | Dominant<br>Species?          | Factor Status  Factor Factor Factor UPL  | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.   Bare Ground  Cover of Wetland Bryophytes  Total Cover of Bryophytes   |
| Total Coverson Solve of total coverson of total  | Absolute % Cover   | Dominant<br>Species?          | Factor Status  Factor Factor Factor UPL  | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  % Bare Ground  % Cover of Wetland Bryophytes  Total Cover of Bryophytes  % Cover of Water  |
| Total Covers 50% of total covers of plan therb Stratum (26ft)  1. Petas testragadus 2. Bistorta Humosa 3. Carex bigelouii 4. Cerscope tetragana 5. Arnica tessinerii 6. Arnica tessinerii  | Absolute % Cover   | Dominant<br>Species?          | Factor Status Factor  | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  % Bare Ground  % Cover of Wetland Bryophytes  Total Cover of Bryophytes  % Cover of Water  Hydrophytic Vegetation Present (Y/N): |
| Total Coverson of total covers | ar: 39.5 20 ts) Absolute % Cover   | Dominant<br>Species?          | Factor Status  Factor F | Dominance Test is > 50%  Prevalence Index is ≤ 3.0  Morphological Adaptations¹ (Provide supporting data in Notes)  Problematic Hydrophytic Vegetation¹ (Explain) ¹ Indicators of hydric soil and wetland hydrology must be present unless disturbed or problematic.  % Bare Ground  % Cover of Wetland Bryophytes  Total Cover of Bryophytes  % Cover of Water  |

| Depth  | Matrix   |   | to the depth neede   | 4 10 400                           | dirione trio                                       | indioator or  | John the about   | la di maidatoro.)  |  |  |
|--|--|---|--|------------------------------------|--|---|--|--|--|--|
| (inches)   | Color (moist)  | %   | Color (moist)  | %                                  | Type <sup>1</sup>                                  | Loc <sup>2</sup>  | Texture  | Notes  |  |  |
| 6.3  |  | 07.00                                       |  | 7                                  | 71   |   | fibric   | Platy parting to 9   |  |  |
| 3-7.5  | 515/2  | (00)  | Tegri Mari 1981  |                                    |  | 7783  | SaL  | LINEA LIM LOS  |  |  |
| 7.5-12   | N4/0   | 90  |  |                                    |  |   | GSal   | Massive ~152,50  |  |  |
| 1.3 /6   | 51512  | 10  |  |                                    | THE IS A ST  |   | 0.24   | 101433100 1310 31  |  |  |
| 22-24  | N4/0   | 30  |  |                                    |  |   | MSaL   | soft ice - thin  |  |  |
|  | 5-15/2   | 10  |  |                                    | 1  |   | C. C.  | lenses, - diggable   |  |  |
|  |  | 100   |  |                                    |  |   |  | laver Seasong 1.   |  |  |
| <sup>1</sup> Type: C=C   | Concentration, D=Dep   | letion, RN                                  | M=Reduced Matrix,  | CS=Cov                             | ered or Co   | ated Sand (   | Grains. <sup>2</sup> Location                                    | : PL=Pore Lining, M=Matrix. ~ 15   |  |  |
| HYDRIC SC  | OIL INDICATORS   |   |  |                                    |  |   | INDICATORS   | FOR PROBLEMATIC HYDRIC S   |  |  |
| Histosol or h  | Histel (A1)  |   | Alaska Gleye   | d (A13)                            | N  | .00   | Alaska Color (   | Change (TA4)⁴N   |  |  |
| Histic Epipe   | don (A2) _ \(\right)   |   | Alaska Redox   | x (A14) _                          | N  |   | Alaska Alpine  | Swales (TA5)   |  |  |
| Black Histic   | (A3) N   |   | Alaska Gleye   | d Pores                            | (A15)  | )   | Alaska Redox   | Alaska Redox with 2.5Y Hue ~   |  |  |
| Hydrogen S   | ulfide (A4)  |   |  |                                    |  |   |  | ithout 5Y Hue or Redder Underlyin  |  |  |
| or see that the control of   |  |   |  | STORE .                            |  |   | Layer_ N   |  |  |  |
| TO THE REAL PROPERTY.  | Surface (A12) N  | etation o                                   | ne primary indicator   | r of wotls                         | and hydrolo  | av and an   | Other (Explain   | n Notes) ape position must be present unles  |  |  |
| Hydric Soil Notes: No  | Present (Y/N):   | activ                                       | clarer 12  | s chr                              | one p  | arent<br>fluctus  | material in  | colors. No saturat   |  |  |
| Hydric Soil Notes: No  | Present (Y/N):   | activ                                       | clarer 12  | alph                               | one p  | arent<br>fluctuo  | material i   | colors. No saturates. Colloval soils - 9   |  |  |
| Hydric Soil Notes: No  | Present (Y/N): N   | activ                                       | to alpha   | alph                               | ia, Jolu   | thetw   | m benche   | Colors. No saturat  8. Collovial soils - 5  2 or more required)  |  |  |
| Hydric Soil Notes: No  | Present (Y/N):<br>Positive seint material  | ATORS (a                                    | to alpha any one indicator is  | sufficien                          | t) §   | thetw   | BY INDICATORS (2   | s Collovial soils - 9  |  |  |
| Hydric Soil Notes: Note | Present (Y/N):  Present (Y/N):  A present (Y/N): | ATORS (a                                    | to alpha any one indicator is rface Soil Cracks (Bundation Visible on A  | sufficien                          | t) S   | SECONDAF<br>Water-staine.eaves (B9)   | RY INDICATORS (2   | 2 or more required)  Stunted or Stressed   |  |  |
| Hydric Soil Notes: Note | Present (Y/N):   | ATORS (a Su Inu (B)                         | any one indicator is rface Soil Cracks (Bundation Visible on A   | sufficien 36)                      | t) s agery [                                       | SECONDAF<br>Vater-staine<br>eaves (B9)<br>Drainage Pa<br>Dxidized Rh<br>Living Roots                              | RY INDICATORS (2) ed  utterns (B10) izospheres along is (C3)     | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3) \( \frac{1}{2} \)   |  |  |
| Hydric Soil Notes: Note | Present (Y/N): _N PPS. FINC SE  AT MATERIAL  GY PRIMARY INDICA  ter (A1) _N Table (A2) _N A3) _N   | ATORS (a Su Inu (B) Sp Co Ma                | any one indicator is rface Soil Cracks (Bundation Visible on Ary) arsely Vegetated neave Surface (B8)  | sufficien 86)                      | t) S agery [                                       | SECONDAF<br>Water-staine<br>Leaves (B9)<br>Drainage Pa  | RY INDICATORS (2) ed utterns (B10) izospheres along (C3) Reduced | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  |  |  |
| Hydric Soil Notes: Note | Present (Y/N): _N PPS. FINC SE  AT MATERIAL  GY PRIMARY INDICA  ter (A1) _N Table (A2) _N A3) _N   | ATORS (a Su Inu (B) Sp Co                   | any one indicator is rface Soil Cracks (Bandation Visible on Ary)  arsely Vegetated ncave Surface (B8)  ard Deposits (B15)  drogen Sulfide or (C1) | sufficien 86)                      | t) s agery [ L L C C C C C C C C C C C C C C C C C | BECONDAR<br>Water-staine<br>Leaves (B9)<br>Orainage Pa<br>Dxidized Rh<br>Living Roots<br>Presence of<br>ron (C4)  | RY INDICATORS (2) ed utterns (B10) izospheres along (C3) Reduced | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3) \( \frac{1}{2} \)  Microtopographic   |  |  |
| Hydric Soil Notes: Note | Present (Y/N):  Present (A1)   | ATORS (a Su Inu (B) Sp Co Ma Hy Od          | any one indicator is rface Soil Cracks (Bundation Visible on Array) Array Vegetated noave Surface (B8)   | sufficien 36)                      | t) s agery [ L L C C C C C C C C C C C C C C C C C | BECONDAR<br>Water-stained<br>Leaves (B9)<br>Drainage Pa<br>Dxidized Rh<br>Living Roots<br>Presence of<br>ron (C4) | ed   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)   |  |  |
| Hydric Soil Notes: Note | Present (Y/N):  Present (A1)  Present (A2)  Present (A2)  Present (A3)  Present (A3)  Present (A3)  Present (A3)   | Su Inu (B) Sp Co Ma Hy Od Dr Wa             | any one indicator is rface Soil Cracks (Bundation Visible on Ary)  arsely Vegetated neave Surface (B8)  If Deposits (B15)  drogen Sulfide or (C1)  | sufficien 36)                      | t) s agery [ L L C C C C C C C C C C C C C C C C C | BECONDAR<br>Water-staine<br>Leaves (B9)<br>Orainage Pa<br>Dxidized Rh<br>Living Roots<br>Presence of<br>ron (C4)  | ed   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)   |  |  |
| Hydric Soil Notes: Note | Present (Y/N):   | Su Inu (B) Sp Co Ma Hy Od Dr Wa             | any one indicator is rface Soil Cracks (Bundation Visible on Ary)  arsely Vegetated ncave Surface (B8)  In Deposits (B15)  drogen Sulfide or (C1)  | sufficien 36)                      | t) s agery [ L L C C C C C C C C C C C C C C C C C | BECONDAR<br>Water-staine<br>Leaves (B9)<br>Orainage Pa<br>Dxidized Rh<br>Living Roots<br>Presence of<br>ron (C4)  | ed   | Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)   |  |  |
| Hydric Soil Notes: Note: Not | Present (Y/N):   | ATORS (a Su Inu (B) Sp Co Ma Hy Oo Ot Ot Ma | any one indicator is rface Soil Cracks (Bundation Visible on Ary)  arsely Vegetated ncave Surface (B8)  In Deposits (B15)  drogen Sulfide or (C1)  | sufficien  Se)                     | t) s agery [                                       | BECONDAR<br>Water-stained Leaves (B9)<br>Drainage Pathiving Roots<br>Presence of ron (C4)                         | ed   | S (allowed Socts - 5)  Por more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5) |  |  |
| Hydric Soil Notes: Note | Present (Y/N):   | ATORS (a Su Inu (B) Sp Co Ma Hy Oo Ot Ot Ma | any one indicator is rface Soil Cracks (Bandation Visible on Ary) arsely Vegetated ncave Surface (B8) arl Deposits (B15) drogen Sulfide or (C1)    | sufficien 36) 2 Aerial Im 3) 5): V | t) s agery [                                       | BECONDAR<br>Water-stained Leaves (B9)<br>Drainage Pathiving Roots<br>Presence of ron (C4)                         | ed   | S (allowed Socts - 5)  Por more required)  Stunted or Stressed Plants (D1)  Geomorphic Position (D2)  Shallow Aquitard (D3)  Microtopographic Relief (D4)  FAC-Neutral Test (D5) |  |  |

## AQUATIC SITE ASSESSMENT DATA FORM

| VEGETATION VARIABLES P= Plot, P  | M= Matrix   |
|--|---|
| Forested-Evergreen-Needle-leaved   | acking Forested-Deciduous-Needle-leaved Forested-Deciduous-Broad-leaved Scrub Shrub-Deciduous-Needle-leaved Scrub Shrub-Deciduous-Broad-leaved Scrub Shrub-Evergreen-Needle-leaved Emergent-Non-persistent Emergent-  |
| Percent Cover (P): Tree (>5 dbh, >6m tall)_<br>Dwarf shrub (<0.5m) Tall herb (≥1   | Sapling (<5 dbh, <6m tall)  |
|  | Evenness of Wetland Type Distribution (M): EvenHighly UnevenModerately even   |
| Vegetation Density/Dominance (P): Sparse<br>80%) Very High Density (80-100%)   | (0-20%) Low Density (20-40%) Medium Density (40-60%) High Density (60-  |
| Interspersion of Cover & Open Water (P): Peripheral Cover >75% Scattere  | 100% Cover or Open Water <25% Scattered/Peripheral Cover 26-75% Scattered or ed or Peripheral Cover N/A   |
| Plant Species Diversity (P): Low (< 5 plant  | species) Medium (5-25 species) High (>25)   |
|  | One or Few Several to Many N/A  |
| Cover Distribution of Dominant Layer (P): Open Small Scattered Patches   | No Veg Solitary, Scattered Stems 1 or More Large Patches; Parts of Site   |
| Dead Woody Material (P): Low Abundance<br>Abundant (>50% of surface)   | (0-25% of surface) Moderately Abundant (25-50% of surface)  |
| Vegetative Interspersion (P): Low (large High (small groupings, diverse and interspers   | patches, concentric rings) Moderate (broken irregular rings) ed)  |
| HGM Class (P): Slope Flat  | Lacustrine Fringe Depressional Riverine Estaurine Fringe  |
|  | X   |
| SOIL VARIABLES   |   |
| Soil Factors (P): Soil Lacking<br>Mineral: Gravelly Mineral: Sandy_  | Histosol:Fibric Histosol:Hemic Histosol: Sapric<br>Mineral: Silty Mineral: Clayey   |
|  |   |
| HYDROLOGIC VARIABLES   |   |
| Inlet/Outlet Class (P): No Inlet/Outlet  | No Inlet/Intermittent Outlet No Inlet/Perennial Outlet Intermittent Inlet/No Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial  |
| Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed. Seas  | Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inle          |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S  Evidence of Sedimentation (P): No Evidence   | Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inle          |
| Inlet/Outlet Class (P): No Inlet/Outlet_ Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Oreated  | Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/Perennial Inle          |
| Inlet/Outlet Class (P): No Inlet/Outlet_ Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial In  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, Sevidence of Sedimentation (P): No Evidence Oreated  | Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/No Outlet Perennial   |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet   | Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/Perennial Inlet/Perennial Inlet/No Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial I             |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet   | Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Peren |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S  Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent  Frequency of Overbank Flooding (P): No O Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow   | Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Inlet/Peren |
| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland ( Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low (Control of the Control of the C               | Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/P                         |
| Inlet/Outlet Class (P): No Inlet/Outlet_ Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, St.  Evidence of Sedimentation (P): No Evidence Created  Microrelief of Wetland Surface (P): Absent_  Frequency of Overbank Flooding (P): No Orection (P): No Orection (P): No Orection (P): No Orection (P): No Surface water Circles (Compared to the property of Compared to the property of Comp | Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Inlet/P                         |
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| Inlet/Outlet Class (P): No Inlet/Outlet Outlet Intermittent Inlet/Intermittent Inlet/Intermittent Outlet Perennial Ir  Wetland Water Regime (P): Drier: Seas Wet: Perm. Flooded, Intermittently Exposed, S Evidence of Sedimentation (P): No Evidence Created Microrelief of Wetland Surface (P): Absent Frequency of Overbank Flooding (P): No O Return Interval >5 yrs  Degree of Outlet Restriction (P): No Outflow Water pH (P): No surface water Ci Surficial Geologic Deposit Under Wetland ( Glacial Till/Not Permeable  Basin Topographic Gradient (M): Low (Evidence of Seeps and Springs (P): No See  LANDSCAPE VARIABLES (M)  Wetland Juxtaposition: Wetland Isolate  | Outlet Intermittent Inlet/Perennial Outlet Perennial Inlet/No Outlet Perennial Inlet/Perennial Outlet Perennial Inlet/Perennial Outlet Perennial Outlet  |
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| Inlet/Outlet Class (P): No Inlet/Outlet Outlet   | Outlet  |

## Wetland Determination Form QA/QC Checklist

This form to be completed before leaving the field site.

| Featu   | re ID: 184PA010 Field Target: 1523 8 Date: 7/10/15   |
|---------|--|
| For all | litems not checked, please provide detailed explanation in the notes section of data form.   |
|         |  |
| 1.      | Site Description   |
|         | Site description, site parameters and summary of findings are complete?  A detailed site sketch is included in logbook?  |
| 2.      | Vegetation   |
|         | At least 80% of onsite vegetation has been keyed to species, or collected for later identification?  Vegetation names are entered legibly for all strata present?  Cover calculations are complete and correct?  All dominant species have been determined and recorded per strata?  Indicator status is correct for each species?  Dominance Test and Prevalence Index have been completed? |
| 3.      | Soil   |
|         | Soil profile is complete?  Appropriate hydric soil indicators are marked?  |
| 4.      | Hydrology  |
|         | Appropriate hydrology indicators are marked? Surface water, water table, and saturation depths are recorded if present?  |
| 5.      | Functions and Values   |
|         | Vegetation, soil, hydrologic variables, and landscape variables complete if site is a wetland?   |
| 6.      | Field Logbook  |
|         | Notes have been recorded at each site, including general description, sketch, and accuracy of pre-mapped wetland boundary as appropriate?  Each logbook page is initialed and dated?   |
| 7.      | Maps   |
|         | Wetland boundaries have been corrected if necessary?  Maps are initialed and dated?  |

#### 8. Photos

Four photos were taken for each Wetland Determination Data Form (2 vegetation, 1 soil pit, 1 soil plug)?

Two photos were taken for each Observation Point (vegetation/site overview)?

Wetland Scientist (print)

Signature / Date

Field Crow Chief (nrint)

Signature / Date

7/10/15

| SITE DESCRIPTION                         |                            |   | ALL SHEET WAR                      |                |                      |  |
|--|----------------------------|---|------------------------------------|----------------|----------------------|--|
| Survey Type: Centerline V Acce           | ss Road (explain)          | Other (exp                              | ain)                               | Field Targ     | get: 153(14          | Map #: 2 Map Date: 6/29  |
| Date: 7/10/11                            | Project Name & No.:        | Alaska LNO                              | 60418403                           |                | Feature Id           |  |
| Investigators: Bruan Sta                 | na Hoigan                  | le Fish                                 |                                    |                |                      | Team No. U84   |
| State: Alaska                            | Region: Alaska             |   | Milepost:                          | 715            |                      | 2087   |
| Latitude: 69 6 08° 25, 27                | Z~N                        | Longitude                               |                                    | 2121           | 7511                 | Datum: WGS84   |
| ogbook No.: 🧷                            | Logbook Page No.:          | 40                                      | Picture No.:                       | PW8            | 4PAO11               | -VEG_VEG_PIT_PLU   |
| SITE PARAMETERS                          |                            |   | THE WALL THE WALL                  | ALCOHOL: CRISC |                      | TO TO THE CO   |
| Subregion: Arctic toothill               |                            |   | Landform (hil                      | slone terrac   | a hummook            | o ato VO   |
| lione (%): 7                             | spect: 5 220               | 0                                       | Local relief (c                    | oncave con     | vev none):           | s, etc.): Backslope  |
| re-mapped Alaska LNG/NWI classifica      |                            | MA 2 IV                                 | Evidence of V                      | Vildlife LIse  | vex, none).          | fat to slightly convex ussocky moderate  |
| re climatic/hydrologic conditions on the | site typical for this time | of year?                                | -                                  | -              | stances" pre         | 7.256  |
| re Vegetation, Soil, or Hyd              | ain in Notes)              | 1 | Yes                                | X No_          | (If no, exp          | plain in Notes.)   |
| re Vegetation Soil ×, or Hyd             |                            | ly Disturbed?<br>Problematic?           | No_X                               |                | lain in Notes)       |  |
| UMMARY OF FINDINGS                       | TelegyTelegraphy           | Toblematic                              | No                                 | _ (If yes, exp | olain in Notes       | .)   |
| ydrophytic Vegetation Present? Yes_      | -/ No                      | le                                      | the Sampled A                      | roo within a   | W-4110               |  |
|  |                            |   | ule Sampled A                      | rea within a   | vvetland?            | YesNo  |
| ydric Soil Present? Yes                  | marsing No_                | _   We                                  | etland Type:                       | Emils          | SIB                  |  |
| Vetland Hydrology Present? Yes_          | No                         |   | 120                                |                |                      | UIAZ UDZ   |
| K K K                                    | Positive react             | alpha p                                 | alphe al<br>usitive so<br>tty posi | the di         | piribul<br>creal (fo | in frozen mineral solo<br>rozen) starting at 11<br>above 11 inches in<br>terial. |
|  |                            | A Chris                                 |                                    | " Seco         | nic )                |  |
|  |                            |   | P                                  | EMIE ;         | Uinez<br>1102        |  |
|  |                            |   |                                    |                |                      | tigh centered poly. Page 1 of 4  |