Hilcorp Alaska, LLC

2026 Wetland Delineation Summary Report: Clam Gulch Wetlands Kenai Peninsula, Alaska

August 2026

Prepared for

Hilcorp Alaska, LLC
3800 Centerpoint Dr Suite 1400
Anchorage, Alaska 99503

Prepared by

ASRC CONSULTING & ENVIRONMENTAL
AN ASRC ENERGY COMPANY
3900 C Street, Suite 701
Anchorage, Alaska 99503

This page intentionally left blank.

Acronyms and Abbreviations

°C	degrees Celsius
°F	degrees Fahrenheit
ACES	ASRC Consulting & Environmental Services, LLC
AJD	Approved Jurisdictional Determination
AK NWPL	Alaska National Wetland Plant List
bgs	below ground surface
CFR	Code of Federal Regulations
cm	centimeter(s)
CWA	Clean Water Act
EPA	U.S. Environmental Protection Agency
FAC	facultative
FACU	facultative upland
FACW	facultative wetland
Full Point	Full Data Point
GIS	geographic information system
Hilcorp	Hilcorp Alaska, LLC
m	meter(s)
N/A	not applicable
NOAA	National Oceanic and Atmospheric Administration
NWI	National Wetlands Inventory
OBL	obligate wetland
OBVS	Observation Point
OHWM	ordinary high-water mark
PEM1/SS1B	Mixed class palustrine emergent, persistent, scrub-shrub, broad-leaved deciduous, seasonally saturated
PEM1B	Palustrine emergent, persistent, seasonally saturated
PEM1E	Palustrine emergent, persistent, seasonally flooded/saturated
PSS1/EM1B	Mixed class palustrine scrub-shrub, persistent, emergent, broad-leaved deciduous, seasonally saturated
PJD	Preliminary Jurisdictional Determination
R2UBF	Riverine, unconsolidated bottom, semipermanently flooded

Study Area	Clam Gulch Pad
U.S.C.	U.S. Code
UPL	Upland
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WOTUS	Waters of the United States

1.0 INTRODUCTION

ASRC Consulting & Environmental Services, LLC (ACES) was contracted by Hilcorp Alaska, LLC (Hilcorp) to perform a wetland delineation within the Clam Gulch Wetlands project area in support of proposed natural gas development activities on the Kenai Peninsula in southcentral Alaska (Appendix A, Figure 1). Throughout this report, the surveyed area is referred to as the Study Area.

Waters of the United States (WOTUS) include jurisdictional wetlands, deepwater habitats, and other aquatic features such as rivers and streams. For the purposes of this report, and because of their functional and regulatory distinctions, wetlands are described separately from other potential WOTUS features (e.g., ponds, rivers, and streams).

The U.S. Army Corps of Engineers (USACE) defines wetlands as "areas that are inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (USACE 1987).

The USACE asserts regulatory authority over wetlands to the outermost extent of the delineated wetland–upland boundary. Jurisdiction over other non-tidal WOTUS generally extends to areas below the ordinary high-water mark (OHWM), where adjacent wetlands are not present. Where adjacent wetlands occur, jurisdiction may extend beyond the OHWM to include those wetlands (USACE 1987). According to USACE Regulatory Guidance Letter 05-05, the ordinary high-water mark is defined as follows:

> The term ordinary high-water mark means that line on the shore established by the fluctuations of water and indicated by physical characteristics such as a clear, natural line impressed on the bank, shelving, changes in the character of soil, destruction of terrestrial vegetation, the presence of litter and debris, or other appropriate means that consider the characteristics of the surrounding areas (USACE 2005).

1.1 Project Description

This wetland delineation report was prepared to assist Hilcorp in obtaining either an Approved Jurisdictional Determination (AJD) or a Preliminary Jurisdictional Determination (PJD) for the Study Area, which is subject to jurisdiction by the USACE under authority granted by Section 404 of the Clean Water Act (CWA) and Section 10 of the Rivers and Harbors Act of 1899 (33 U.S. Code [U.S.C.] 403).

Publicly available aerial photography and topographic data were used to conduct an initial mapping of the Study Area. An ACES wetland scientist collected vegetation, soils, and hydrologic information relevant to determining the presence and boundaries of potentially jurisdictional wetlands and other

WOTUS within the Study Area. The existence and location of wetlands and other WOTUS were determined using the methods described in Section 2.0 of this report.

1.2 Project Location

The Clam Gulch Wetlands Study Area is located in southcentral Alaska, on the western portion of the Kenai Peninsula, near the community of Clam Gulch within the Kenai Peninsula Borough. The site is situated along the eastern margin of Cook Inlet and is characterized by low-relief coastal terrain.

The Study Area is located within the U.S. Geological Survey (USGS) Kenai A-4 Quadrangle Map (scale 1:63,360). The location of the Study Area in relation to the regional context and nearby infrastructure is illustrated in Figures 1 and 2 in Appendix A.

Field data were collected at multiple sampling locations distributed across the Study Area to characterize representative vegetation communities and wetland/upland transitions. These locations include formal sampling points and supplemental observation points used to support boundary delineation. Specific sampling locations are summarized in Table 1-1.

Table 1-1 Project Location

Data Point	LAT (NAD83)	LONG (NAD83)	Section	MTRS	Description
FT-01	60.245498 N	-151.380019 W	21	S002N012W21	SEC 21, T02N, R12W, SM
FT-02	60.245302 N	-151.380672 W	21	S002N012W21	SEC 21, T02N, R12W, SM
FT-03	60.245485 N	-151.381041 W	21	S002N012W21	SEC 21, T02N, R12W, SM
FT-04	60.245036 N	-151.381683 W	21	S002N012W21	SEC 21, T02N, R12W, SM
FT-07	60.245491 N	-151.382595 W	21	S002N012W21	SEC 21, T02N, R12W, SM
FT-08	60.245503 N	-151.384510 W	21	S002N012W21	SEC 21, T02N, R12W, SM
Wet Edge	60.244625 N	-151.383264 W	21	S002N012W21	SEC 21, T02N, R12W, SM

Key: FT = Field Target; MTRS = Meridian, Township, Range, Section; NAD 83 = North American Datum of 1983; OBVS = Observation Point; R12W = Range 12 West; SEC = Section; SM = Seward Meridian; T02N = Township 02 North

1.3 Study Area Characteristics

The Study Area totals 6.75 acres (2.73 hectares) and is dominated by open grasslands and pockets of deciduous and coniferous trees. Plant species identified during field sampling – along with their common names and wetland indicator status (Lichvar 2012) – are provided in Table 1-2.

Table 1-2 Plant Species Observed within the Study Area

Scientific Name	Indicator
Alnus viridis	FAC
Betula nana	FAC
Calamagrostis canadensis	FAC
Chamerion angustifolium	FACU
Equisetum arvense	FAC
Heracleum maximum	FACU
Lycopodium lagopus	FACU
Picea glauca	FACU
Picea mariana	FACW
Rhododendron groenlandicum	FAC
Salix planifolia	FACW
Salix pulchra	FACW
Vaccinium vitis-idaea	FAC

Source: USACE (2022)

Key: FAC - Facultative; species equally likely to occur in wetlands and non-wetlands.
FACU - Facultative Upland; species usually occurs in non-wetlands.
FACW - Facultative Wetland; species usually occurs in wetlands.

1.3.1 Climate

The Kenai Peninsula, Alaska, receives an average of 1.32 inches (3.35 centimeters [cm]) of precipitation monthly, with average high and low temperatures of 60 degrees Fahrenheit (°F) (15.6 degrees Celsius [°C]) and 44°F (6.7°C), respectively, during the month of June, when the field delineation was conducted (National Oceanic and Atmospheric Administration [NOAA] 2026). See Study Area photographs in Appendix B for additional details.

This page intentionally left blank.

2.0 METHODS

ACES conducted this project in accordance with the USACE Wetland Delineation Manual (USACE 1987), the Regional Supplement to the USACE *Wetland Delineation Manual: Alaska Region* (USACE 2007), and the *2022 National Wetlands Plant List for Alaska* (USACE 2022). The delineation process included the following tasks:

- Preliminary data gathering and analysis
- Field investigation
- Wetland classification
- Post-field data review
- Final mapping

2.1 Preliminary Data Gathering and Analysis

Information gathered during the preliminary review was used to develop an initial sampling plan for the field investigation and to map potential habitat types within the Study Area. The data were used to generate preliminary maps and to estimate the number and approximate locations of data points. ACES referenced the following data sources during fieldwork planning:

- Aerial photography
- Proprietary geographic information system (GIS) mapping collected by Hilcorp
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) maps (USFWS 2025), digital datasets, and hardcopy maps
- USGS Digital Raster Graphics (i.e., topographic maps)
- *National Wetland Plant List: Alaska Region* (AK NWPL) (USACE 2022)

2.2 Field Investigation

Field investigation of the Study Area was conducted on June 8, 2026, by ACES Environmental Scientist Abby Bell. A pedestrian survey was completed across the Study Area, and data were collected at predetermined field targets representing each potential habitat type within the Study Area.

Data collection occurred at least once per vegetative or habitat community type. Sampling points were based on the vegetation communities observed on aerial photographs and verified through ground-truthing. For each vegetation community observed, sampling points were selected based on the total area of that community relative to other communities. Photographs were taken at each

sampling point to document the vegetation, soils, hydrology, and general site characteristics (Appendix B).

At each Full Data Point (Full Point), a USACE routine wetlands delineation Field Determination Form was completed to document observed vegetation, soil, and hydrology characteristics (Appendix B). Percentage of aerial coverage for each plant species within a 50-foot (15-meter [m]) radius of each field target was estimated, and the type of vegetation stratum (tree, shrub, or herbaceous) layer for each species was recorded.

Observation Points (OBVS) were completed within the Study Area, specifically to mark where site conditions matched a previously noted Full Point location. General site conditions were documented, and photographs were taken at the site, though not at the same level of detail as a Full Point. Table 2-1 summarizes the data points sampled by ACES in 2026.

Table 2-1 Sampling Point Summary

Sample Point	Full Point?	NWI Class
FT-01	Yes	PEM1B
FT-02	Yes	PSS1/EM1B
FT-03	Yes	PEM1B
FT-04	Yes	PEM1B
FT-07	Yes	PEM1/SS1B
FT-08	Yes	PEM1B
Wet Edge	Yes	PEM1E
OBVS-05	No	PSS1/EM1B
OBVS-09	No	PEM1B
OBVS-10	No	PEM1B
OBVS-11	No	PEM1E
Culvert	No	R2UBF

Key:
FT = Field Target
OBVS = Observation Point
PEM1B = Palustrine emergent, persistent, seasonally saturated
PEM1/SS1B = Mixed class palustrine emergent, persistent, scrub-shrub, broad-leaved deciduous, seasonally saturated
PEM1E = Palustrine emergent, persistent, seasonally flooded/saturated
PSS1/EM1B = Mixed class palustrine scrub-shrub, persistent, emergent, broad-leaved deciduous, seasonally saturated
R2UBF = Riverine, lower perennial, unconsolidated bottom, semipermanently flooded

Field determination of wetlands was performed according to the three-parameter approach using vegetation, soils, and hydrologic characteristics, as described in the USACE Wetland Delineation Manual and Regional Supplement (USACE 1987, 2007). Field Targets FT-01 and FT-03 had ice-restrictive layers at 5 inches (12.7 cm) below ground surface (bgs), impeding the collection of a full

20-inch (50.8 cm) soil plug. Soils at both sites are assumed to be hydric due to the presence of hydrophytic vegetation, presence of hydrology indicators, and presence of organic layers that would support hydric soils. This assumption follows the procedure outlined in Chapter 5 of the USACE 2007 Regional Supplement.

2.2.1 Hydrophytic Vegetation

Hydrophytic vegetation consists of macrophytes that have adapted to life where the frequency and duration of inundation or soil saturation determine the plant species present. At each Full Point, plant species were identified using the following reference materials:

- *Wetland Sedges of Alaska* (Tande and Lipkin 2003)
- *Field Guide to Alaskan Wildflowers* (Pratt 1989)
- *Alaska Trees and Shrubs*, Second Edition (Viereck and Little 2007)

Percent cover of vegetation was estimated within a defined 50-foot (15-m) radius at each sampling location. Each plant species was assigned an indicator status as designated by the USACE 2022 AK NWPL. Plant species are considered hydrophytic if their USFWS indicator status is obligate wetland (OBL), facultative wetland (FACW), or facultative (FAC).

The vegetation community was evaluated using the Dominance Test Indicator and the Prevalence Index Indicator (USACE 2007). The dominance test is more appropriate for plant communities with only a few dominant individuals, whereas the prevalence test is more comprehensive because it accounts for all species present in the plot. Vegetation is considered hydrophytic if either test is satisfied, unless a disturbed or problematic wetland situation exists.

2.2.2 Hydric Soils

Hydric soils are generally saturated, flooded, or ponded long enough during the growing season to become anaerobic in the upper soil horizon. Soils were sampled at all Full Points and evaluated for hydric soil indicators. Soil pits were excavated with a shovel to a depth of at least 20 inches (50.8 cm) bgs. Soil matrix colors and features were identified according to *Munsell Soil Color Charts* (2000). The soil profile was described on USACE field determination forms.

2.2.3 Hydrology

Direct observations of wetland hydrology are often limited during certain times of the growing season, but typical primary indicators include surface water, a high-water table or saturation, watermarks, sediment deposits, and iron deposits.

Typical secondary indicators include drainage patterns, oxidized or reduced root channels, stunted or stressed plant cover, water-stained leaves or sediment deposits, and the presence of reduced iron. Field indicators of hydrology are considered satisfied if one primary or two secondary indicators are observed. Certain indicators present throughout the year confirm the occurrence of saturation or inundation for sufficient durations that satisfy USACE wetland delineation criteria (USACE 1987, 2007).

2.3 Wetlands Classification

Wetland areas were classified at the class level in accordance with the *Classification of Wetlands and Deepwater Habitats of the United States* (Cowardin et al. 1979). Hydrologic modifiers were added to each wetland class. The nomenclature follows the NWI classification system.

2.4 Post-Field Data Review/Final Mapping

Upon completion of field data collection, the determination forms, photographs, and field notes were evaluated for accuracy and completeness. The data were used to update preliminary wetland mapping with new information. These updated data were incorporated into the geodatabase containing all project wetland data. Final wetland mapping was completed using ArcGIS software and a georeferenced aerial photograph as a base map to digitally map wetlands and habitat boundaries and to calculate wetland and upland areas.

3.0 RESULTS

3.1 Study Area Results

The Study Area totaled 6.75 acres (2.73 hectares), with a mix of wetland classes found within its boundaries (Table 3-1). Digital versions of the field data sheets are included in Appendix B.

Table 3-1 Wetlands and Non-Jurisdictional Uplands by Acreage for the Clam Gulch Pad

Type	Acres	Hydrogeomorphic Class	Associated Data Points	Associated Observation Points
Wetlands				
PEM1B	4.89	Flat	FT-01 FT-03 FT-04 FT-08	OBVS-09 OBVS-10
PEM1E	0.65	Flat	Wet Edge	OBVS-11
PEM1/SS1B	0.11	Flat	FT-07	N/A
PSS1/EM1B	0.61	Flat	FT-02	OBVS-05
R2UBF	0.04	Riverine	N/A	Culvert
Uplands				
UPL	N/A	Upland	N/A	N/A

Key: FT = Field Target; N/A = Not Applicable; OBVS = Observation Point; UPL = Upland
PEM1B = Palustrine emergent, persistent, seasonally saturated
PEM1/SS1B = Mixed class palustrine emergent, persistent, scrub-shrub, broad-leaved deciduous, seasonally saturated
PEM1E = Palustrine emergent, persistent, seasonally flooded/saturated
PSS1/EM1B = Mixed class palustrine scrub-shrub, persistent, emergent, broad-leaved deciduous, seasonally saturated
R2UBF = Riverine, lower perennial, unconsolidated bottom, semipermanently flooded

3.2 Habitat Types

3.2.1 Wetlands

6.26 acres (2.53 hectares) of the 6.75-acre (2.73-hectare) Study Area were identified as palustrine wetlands. Wetlands ranged from saturated to standing water conditions, depending on location. Hydrophytic vegetation found within the Study Area included but was not limited to *Calamagrostis canadensis, Picea mariana, Betula nana,* and *Salix pulchra*.

Standing water, a high-water table, a hummock-dominated landform, and a shallow aquitard were all encountered at various points throughout the Study Area. In areas where there was no standing water, the ground was saturated to the surface; when pressure was applied to the ground or a test pit was excavated, water readily welled to the surface.

The hydric soils sampled in the Study Area were characterized by a thick fibric layer, dark color, low chroma, saturation to the ground surface, and a silty loam texture. This soil readily formed a ball but would not ribbon.

3.2.2 Other Waters of the United States

A R2UBF system and series of culverts were found running the width and length of the eastern and southern ends of the Study Area, respectively. This feature was not previously mapped in the NWI, but site characterization data were collected and can be found in Appendix B.

3.2.3 Uplands

The only uplands identified in the Study Area consisted of an existing road system along three of the four Study Area perimeter edges. These uplands are distinguished from naturally occurring uplands using the "Uplands-Disturbed" designation.

The distribution of wetlands, other WOTUS, and non-jurisdictional uplands within the Study Area is summarized in Table 3-2.

Table 3-2 Wetlands, Other WOTUS, and Non-Jurisdictional Uplands in the Study Area

Type	Amount in Study Area (acres)
Wetlands	6.26
Other WOTUS	0.04
Uplands	0.45

Key: N/A = Not applicable
WOTUS = Waters of the United States

3.3 Previous Wetland Determinations

ACES was not provided with any previous wetland determinations other than those available through USFWS NWI mapping.

3.4 Preliminary Jurisdictional Determination

ACES did not complete jurisdictional determination forms because jurisdictional determinations are the responsibility of the USACE. Referring to the 2023 *Sackett* decision and the federal definition of a WOTUS in 40 Code of Federal Regulations (CFR) § 120.2(a), wetlands fall under the jurisdiction of the USACE when they are adjacent to a WOTUS or other traditionally navigable water – among other factors.

Both the *Rapanos v. United States,* 547 U.S. 715, 742 (2006), and *Sackett v. Environmental Protection Agenc*y, 598 U.S. 651 (2023) decisions define adjacent wetlands as those with a continuous surface connection to a WOTUS, "making it difficult to distinguish where the water ends and the wetland begins" (*Sackett* 2023, 678). A March 12, 2025, memorandum to the field, issued jointly by the U.S. Environmental Protection Agency (EPA) and the USACE, further clarified the definition of a continuous surface connection, stating that WOTUS includes only "those adjacent wetlands that have a continuous surface connection because they directly abut the [requisite jurisdictional water]." Wetlands that are far removed from and do not directly abut a covered water do not meet the continuous surface connection standard (EPA and USACE 2025).

WOTUS does not include subsurface waters; therefore, for a wetland to qualify as jurisdictional, the hydrologic connection must occur via surface water. Under the *Sackett* decision, a wetland must maintain a direct, continuous surface connection by abutting a covered water, making it difficult to distinguish where the water body ends and the wetland begins.[1]

The Study Area contains palustrine wetlands with a mix of emergent and scrub-shrub vegetation and various hydrologic modifiers. The existing road on the north, east, and south edges of the Study Area, paired with the culverted riverine system on the east, south, and west edges, creates a blended environment that requires careful analysis to determine whether these wetlands are subject to USACE jurisdiction.

It should be noted that no obvious surface connections to jurisdictional waters were observed, but the survey was limited to the Study Area. Aerial signatures suggest that the R2UBF riverine system found within the Study Area may flow to a larger system, but further analysis of the broader environment would be required to accurately determine the extent of this connection.

Uplands in the Study Area are not considered to be jurisdictional and do not require CWA permits for the placement of fill.

In November 2025, the EPA and USACE proposed a revision to the definition of WOTUS, including but not limited to clarifying the terms "relatively permanent", "tributary", and "continuous surface connection" (EPA and USACE 2025). This rule is anticipated to be finalized in late 2026 and will provide even more clarity on jurisdictional resources under Section 404 of the CWA.

[1] See *Sackett* (2023), page 21, which states: "In *Rapanos*, the plurality spelled out clearly when adjacent wetlands are part of covered waters. It explained that "waters" may fairly be read to include only those wetlands that are 'as a practical matter indistinguishable from waters of the United States,' such that it is 'difficult to determine where the 'water' ends and the 'wetland' begins.' 547 U.S., at 742, 755 (emphasis deleted). That occurs when wetlands have 'a continuous surface connection to bodies that are 'waters of the United States' in their own right, so that there is no clear demarcation between 'waters' and wetlands."

This page intentionally left blank.

4.0 REFERENCES

Cowardin, Lewis M., Virginia Carter, Francis C. Golet, and Edward T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. FWS/OBS-79/31. Washington, DC: U.S. Department of the Interior, Fish and Wildlife Service.

Environmental Protection Agency and Department of the Army, Corps of Engineers. *Updated Definition of "Waters of the United States"*. Proposed Rule. Federal Register, 20 Nov. 2025, EPA–HQ–OW–2025–0322; FRL 11132.1–01–OW; RIN 2040–AG44.

Munsell Color. 2000. *Munsell Soil Color Charts*. Rev. ed. New Windsor, NY: GretagMacbeth.

National Oceanic and Atmospheric Administration (NOAA). 2026. "Summary of Monthly Normals 2006–2020." National Environmental Satellite, Data, and Information Service. Accessed July 28, 2026. https://www.ncei.noaa.gov/access/services/data/v1?dataset=normals-monthly-2006-2020&stations=USW00026523&format=pdf.

Pratt, Verna E. 1989. Field Guide to Alaskan Wildflowers. Anchorage: Alaskakrafts.

Rapanos v. United States. 2006. 547 U.S. 742.

Sackett v. Environmental Protection Agency. 2023. 598 U.S. 651.

Tande, Gerald, and Robert Lipkin. 2003. Wetland Sedges of Alaska. Anchorage: University of Alaska Anchorage, Alaska Natural Heritage Program.

U.S. Army Corps of Engineers (USACE). 2005. "Ordinary High Water Mark Identification." Regulatory Guidance Letter 05-05. December 7, 2005. https://www.nap.usace.army.mil/Portals/39/docs/regulatory/rgls/rgl05-05.pdf.

U.S. Army Corps of Engineers (USACE). 2007. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Alaska Region (Version 2.0). ERDC/EL TR-07-24. Vicksburg, MS: U.S. Army Engineer Research and Development Center.

U.S. Army Corps of Engineers (USACE). 2022. *National Wetland Plant List: Alaska Region*. Washington, DC: U.S. Army Corps of Engineers. https://wetland-plants.sec.usace.army.mil/static/reports/NWPL%20Cover%20Page%20AK_v3.pdf.

U.S. Army Corps of Engineers (USACE), Environmental Laboratory. 1987. *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. Vicksburg, MS: Waterways Experiment Station.

U.S. Environmental Protection Agency (EPA). 2008. "Clean Water Act Jurisdiction Following the U.S. Supreme Court's Decision in Rapanos v. United States & Carabell v. United States." Joint Guidance Memorandum, December 2, 2008.

U.S. Environmental Protection Agency (EPA), and U.S. Army Corps of Engineers (USACE). 2025. "Memorandum to the Field: Proper Implementation of 'Continuous Surface Connection' Under the Definition of 'Waters of the United States' Under the Clean Water Act." Joint Memorandum to the Field, March 12, 2025.

U.S. Fish and Wildlife Service (USFWS). 2025. "National Wetlands Inventory." Last modified May 2025. https://www.fws.gov/wetlands/data/mapper.html.

Viereck, Leslie A., and Elbert L. Little Jr. 2007. Alaska Trees and Shrubs. 2nd ed. Fairbanks: University of Alaska Press.

Appendix A
Figures

This page intentionally left blank.

Figure 1 2026 Clam Gulch Wetlands Vicinity Map

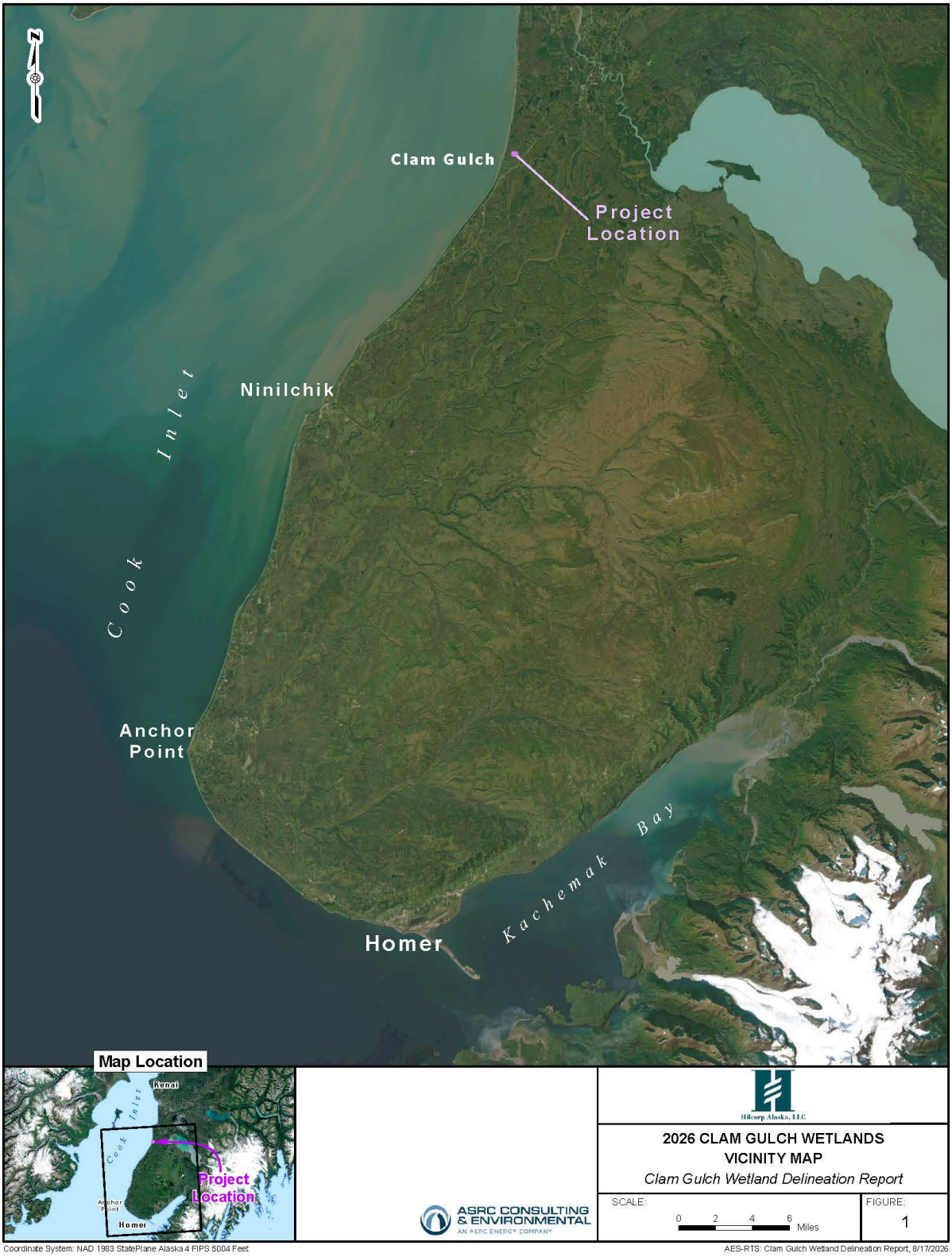


Figure 2 2026 Clam Gulch Wetlands Project Area

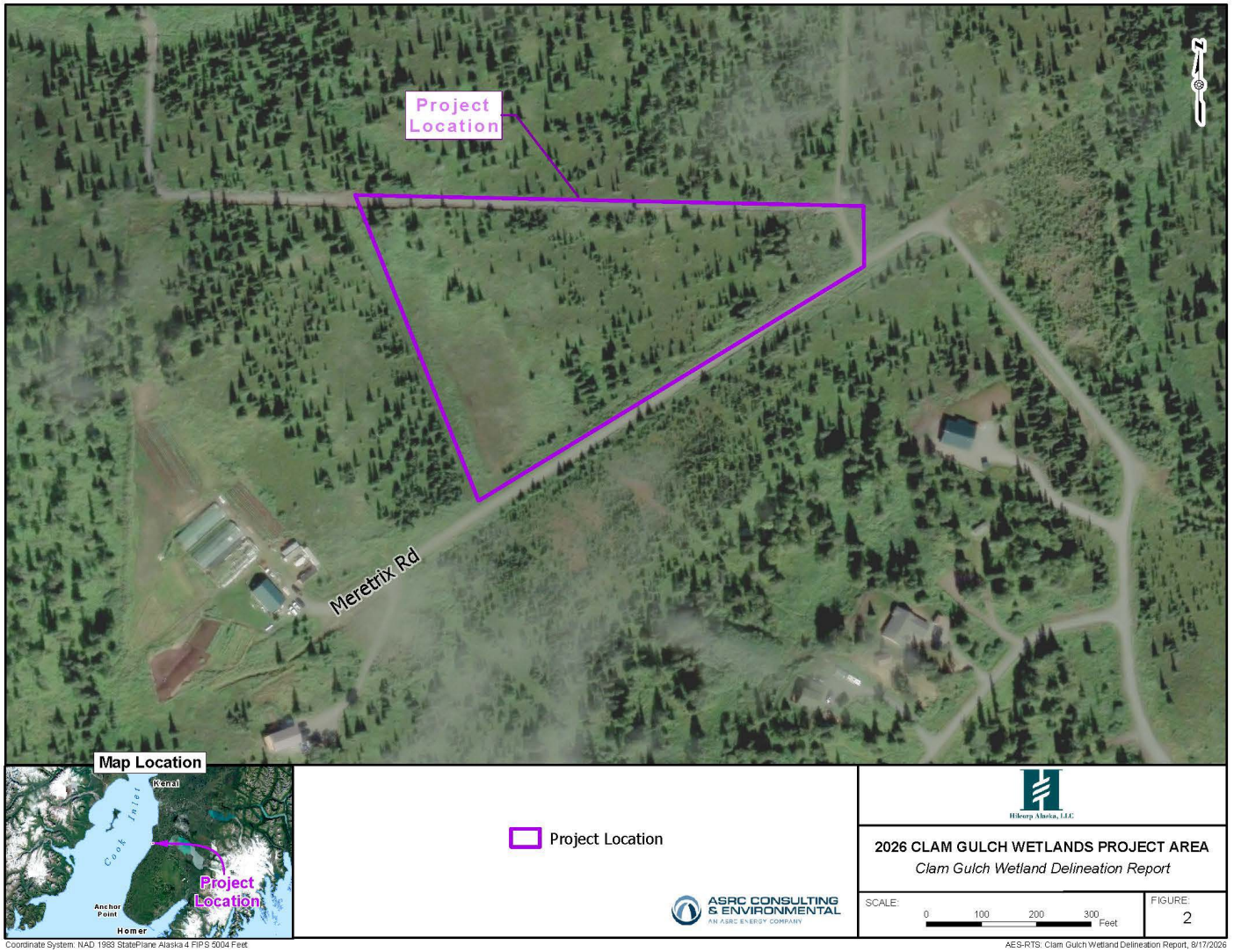
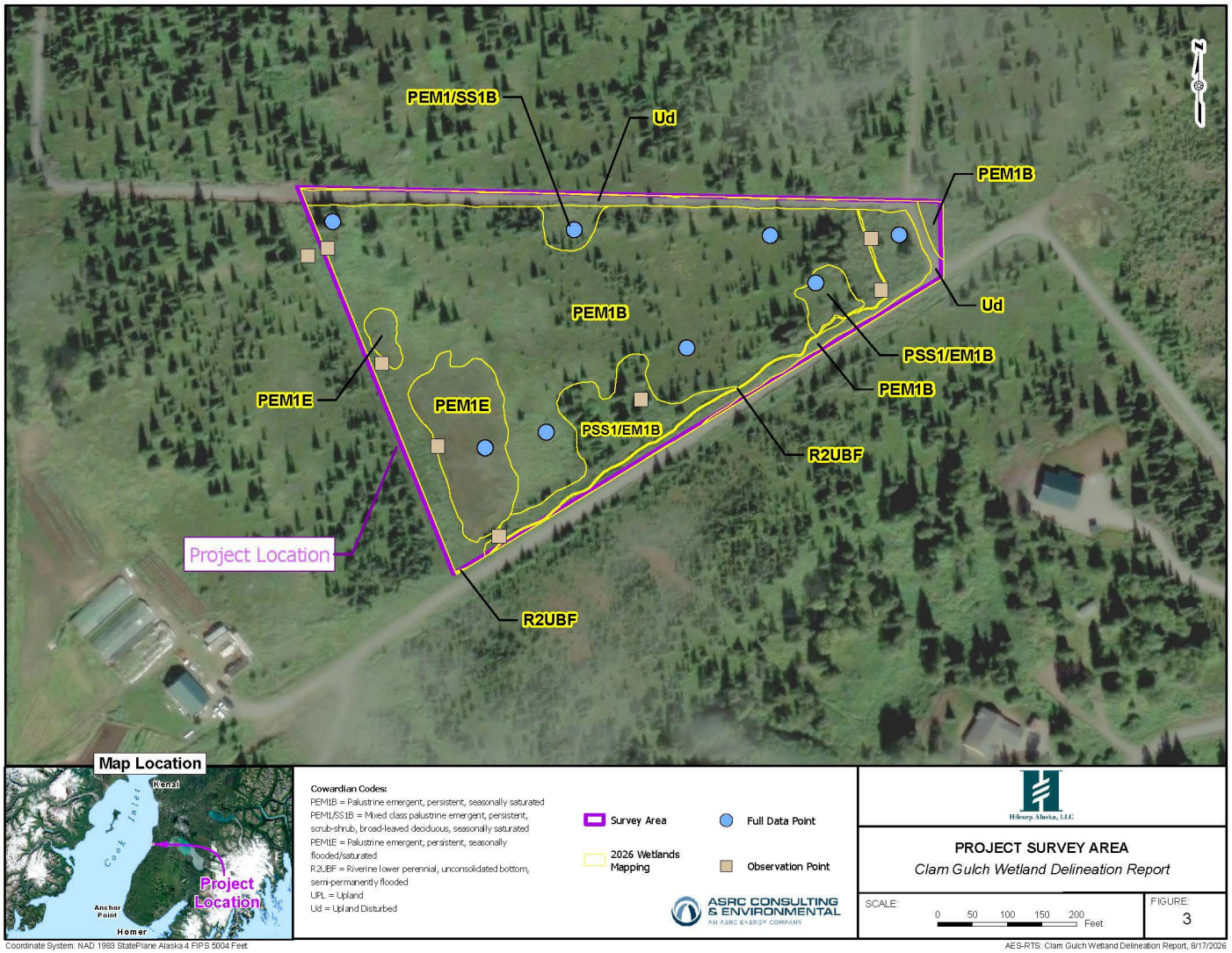


Figure 3 2026 Clam Gulch Wetlands



This page intentionally left blank.

Appendix B
Wetland Determination Data Forms and Site Photographs

This page intentionally left blank.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Alaska Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Clam Gulch/ Holmes Pad Borough/City: Kenai, AK Sampling Date: 06/08/2026
Applicant/Owner: Hilcorp Alaska, LLC Sampling Point: FT-01
Investigator(s): Abby Bell Landform (hillside, terrace, hummocks, etc.): Hummock
Local relief (concave, convex, none): None Slope (%): 0
Subregion: LRR W1, MLRA 224 (Cook Inlet Lowlands) Lat: 60.245474 N Long: 151.379944 W Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: PEM1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes x No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes x No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
In cal-can field between road and riverine system. Ice hit at 5 inches below ground surface.

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea glauca*	10	Yes	FACU
2. *Picea mariana*	2	No	FACW
3.			
4.			
	12 =Total Cover		
50% of total cover: 6	20% of total cover: 3		
Sapling/Shrub Stratum			
1. *Salix pulchra*	5	Yes	FACW
2.			
3.			
4.			
5.			
6.			
	5 =Total Cover		
50% of total cover: 3	20% of total cover: 1		
Herb Stratum			
1. *Calamagrostis canadensis*	100	Yes	FAC
2. *Chamerion angustifolium*	5	No	FACU
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	105 =Total Cover		
50% of total cover: 53	20% of total cover: 21		

Plot Size (radius, or length x width) 50x50 % Bare Ground 0
% Cover of Wetland Bryophytes N/A Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
Total Number of Dominant Species Across All Strata: 3 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	7	x 2 =	14
FAC species	100	x 3 =	300
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	122 (A)		374 (B)

Prevalence Index = B/A = 3.07

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Black and white spruce seen outside the project area.

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

SOIL

Sampling Point: FT-01

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5		60						Fibric Organic
0-5	7.5R 3/2	40					Loamy/Clayey	Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol or Histel (A1)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)
- ___ Iron Monosulfide (A18)

Indicators for Problematic Hydric Soils[3]:

- ___ Depleted Below Dark Surface (A11)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Alaska Redox With 2.5Y Hue
- ___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Ice

Depth (inches): 5

Hydric Soil Present? Yes X No ___

Remarks:

All soils documented are part of the fibric organic/veg mat layer (7.5 YR 3/2). 40% of veg mat was soil.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ 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 Remarks)

Secondary Indicators (2 or more required)

- X Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- ___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

N/A

Remarks:

Ground is squishy and water seeped through surface when pressure applied. ~30 feet from culverted riverine system. Water filled test pit to surface during survey.

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

Photo Set 1 FT-01 Photos

FT-01 Photos	
	
	

From top to bottom, left to right: Overview facing north, overview facing east, test pit to the restrictive layer showing water at the ground surface, and soil plug showing organic material.

This page intentionally left blank.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Alaska Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Clam Gulch/ Holmes Pad Borough/City: Kenai, AK Sampling Date: 06/08/2026
Applicant/Owner: Hilcorp Alaska, LLC Sampling Point: FT-02
Investigator(s): Abby Bell Landform (hillside, terrace, hummocks, etc.): Hummocks
Local relief (concave, convex, none): _____ Slope (%): _____
Subregion: LRR W1, MLRA 224 (Cook Inlet Lowlands) Lat: 60.245292 N Long: 151.380517W Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: PSS1/EM1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:
Point taken where veg changes west of riverine system.

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea glauca*	40	Yes	FACU
2. *Picea mariana*	15	Yes	FACW
3.			
4.			
	55	=Total Cover	
50% of total cover: 28	20% of total cover: 11		
Sapling/Shrub Stratum			
1. *Salix pulchra*	60	Yes	FACW
2. *Alnus viridis*	5	No	FAC
3.			
4.			
5.			
6.			
	65	=Total Cover	
50% of total cover: 33	20% of total cover: 13		
Herb Stratum			
1. *Calamagrostis canadensis*	100	Yes	FAC
2. *Equisetum arvense*	10	No	FAC
3. *Heracleum maximum*	1	No	FACU
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	111	=Total Cover	
50% of total cover: 56	20% of total cover: 23		

Plot Size (radius, or length x width) 50x50 % Bare Ground 0
% Cover of Wetland Bryophytes N/A Total Cover of Bryophytes _____
(Where applicable)

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	75	x 2 =	150
FAC species	115	x 3 =	345
FACU species	41	x 4 =	164
UPL species	0	x 5 =	0
Column Totals:	231 (A)		659 (B)

Prevalence Index = B/A = 2.85

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Change from cal-can field to willow dominant

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

SOIL Sampling Point: FT-02

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2								Veg mat
2-13								Fibric Organic
13-20	10YR 2/2	100					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol or Histel (A1)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)
- ___ Iron Monosulfide (A18)

Indicators for Problematic Hydric Soils[3]:

- ___ Depleted Below Dark Surface (A11)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)

- ___ Alaska Redox With 2.5Y Hue
- ___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

Restrictive Layer (if observed):
Type: None
Depth (inches): 20

Hydric Soil Present? Yes X No ___

Remarks:
First 13 inches of plug held together by plant roots. Soil color uniform through plug. Soil will ball but not ribbon.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Surface Soil Cracks (B6)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Marl Deposits (B15)
- ___ Hydrogen Sulfide Odor (C1)
- X Dry-Season Water Table (C2)
- ___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
N/A

Remarks:
Glistening sidewalls found to surface, bottom 3 inches of test pit filled with water during survey.

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

Photo Set 2 FT-02 Photos

FT-02 Photos









From top to bottom, left to right: Overview facing north, overview facing east, test pit to the restrictive layer showing water at the ground surface, and soil plug showing organic material.

This page intentionally left blank.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Alaska Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Clam Gulch/ Holmes Pad Borough/City: Kenai, AK Sampling Date: 06/08/2026
Applicant/Owner: Hilcorp Alaska,LLC Sampling Point: FT-03
Investigator(s): Abby Bell Landform (hillside, terrace, hummocks, etc.): Hummocks
Local relief (concave, convex, none): none Slope (%): 0
Subregion: LRR W1, MLRA 224 (Cook Inlet Lowlands) Lat: 60.245459 N Long: -151.380816 W Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: PEM1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil X, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:
About 30 ft from road. Change from grassy meadow to willow and dwarf birch field.

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	30	Yes	FACW
2. *Picea glauca*	5	No	FACU
3.			
4.			
	35 =Total Cover		
50% of total cover: 18	20% of total cover: 7		
Sapling/Shrub Stratum			
1. *Picea mariana*	10	Yes	FACW
2. *Salix planifolia*	10	Yes	FACW
3.			
4.			
5.			
6.			
	20 =Total Cover		
50% of total cover: 10	20% of total cover: 4		
Herb Stratum			
1. *Betula nana*	100	Yes	FAC
2. *Rhododendron groenlandicum*	90	Yes	FAC
3. *Vaccinium vitis-idaea*	40	No	FAC
4. *Calamagrostis canadensis*	5	No	FAC
5. *Equisetum arvense*	5	No	FAC
6.			
7.			
8.			
9.			
10.			
	240 =Total Cover		
50% of total cover: 120	20% of total cover: 48		

Plot Size (radius, or length x width) 50 x 50 feet % Bare Ground 0
% Cover of Wetland Bryophytes N/A Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 5 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 100.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	50	x 2 =	100
FAC species	240	x 3 =	720
FACU species	5	x 4 =	20
UPL species	0	x 5 =	0
Column Totals:	295 (A)		840 (B)

Prevalence Index = B/A = 2.85

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
All plants besides trees approx 18 inches tall

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

SOIL Sampling Point: FT-03

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5								Veg mat

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol or Histel (A1)
___ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)
___ Iron Monosulfide (A18)

Indicators for Problematic Hydric Soils[3]:

___ Depleted Below Dark Surface (A11)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)

___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

Restrictive Layer (if observed):
Type: Ice
Depth (inches): 5

Hydric Soil Present? Yes X No ___

Remarks:
Veg mat only. Any soils below ice layer assumed hydric due to presence of hydric vegetation and presence of hydrology indicators.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
X High Water Table (A2)
X Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ 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 Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
X Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No X	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 0
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Water filled test pit to surface during survey. Hit ice ~5 inches bgs ground soft but no surface water seen.

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

Photo Set 3 FT-03 Photos

FT-03 Photos









From top to bottom, left to right: Overview photo facing north, overview photo facing east, test pit to the restrictive layer showing water at the ground surface, and soil plug showing organic material.

This page intentionally left blank.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Alaska Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Clam Gulch/ Holmes Pad Borough/City: Kenai, AK Sampling Date: 06/08/2026
Applicant/Owner: Hillcorp Alaska, LLC Sampling Point: FT-04
Investigator(s): Abby Bell Landform (hillside, terrace, hummocks, etc.): Hummocks
Local relief (concave, convex, none): none Slope (%): 0
Subregion: LRR W1, MLRA 224 (Cook Inlet Lowlands) Lat: 60.244993 N Long: -151.381590W Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: PEM1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:
Data point taken to represent space between FT-02 and previously cleared space.

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	20	Yes	FACW
2. *Picea glauca*	10	Yes	FACU
3.			
4.			
	30 =Total Cover		
50% of total cover: 15	20% of total cover: 6		
Sapling/Shrub Stratum			
1. *Betula nana*	100	Yes	FAC
2. *Picea mariana*	5	No	FACW
3. *Picea glauca*	5	No	FACU
4.			
5.			
6.			
	110 =Total Cover		
50% of total cover: 55	20% of total cover: 22		
Herb Stratum			
1. *Rhododendron groenlandicum*	100	Yes	FAC
2. *Vaccinium vitis-idaea*	50	Yes	FAC
3. *Calamagrostis canadensis*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	160 =Total Cover		
50% of total cover: 80	20% of total cover: 32		
Plot Size (radius, or length x width) 50 x 50	% Bare Ground 0		
% Cover of Wetland Bryophytes N/A (Where applicable)	Total Cover of Bryophytes		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	25	x 2 =	50
FAC species	260	x 3 =	780
FACU species	15	x 4 =	60
UPL species	0	x 5 =	0
Column Totals:	300 (A)		890 (B)

Prevalence Index = B/A = 2.97

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

SOIL

Sampling Point: FT-04

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-7								Veg mat
7-10	10YR 2/2	50					Loamy/Clayey	Plant roots and soil (50% each)
10-14	10YR 2/2	70					Loamy/Clayey	
10-14	10YR 5/1	30					Loamy/Clayey	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol or Histel (A1)
_X_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)
___ Iron Monosulfide (A18)

Indicators for Problematic Hydric Soils[3]:

___ Depleted Below Dark Surface (A11)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)

___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

Restrictive Layer (if observed):
Type: Ice
Depth (inches): 14

Hydric Soil Present? Yes _X_ No ___

Remarks:
7 inches of veg mat, soils held together by roots through 10 inches deep. Bottom 4 inches of plug had grayer clay. Ribbons of 10YR 5/1 running through.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
___ High Water Table (A2)
_X_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ Surface Soil Cracks (B6)
___ Inundation Visible on Aerial Imagery (B7)
___ Sparsely Vegetated Concave Surface (B8)
___ Marl Deposits (B15)
___ Hydrogen Sulfide Odor (C1)
_X_ Dry-Season Water Table (C2)
___ Other (Explain in Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
___ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No _X_	Depth (inches): ___
Water Table Present?	Yes _X_	No ___	Depth (inches): 14
Saturation Present? (includes capillary fringe)	Yes _X_	No ___	Depth (inches): 0

Wetland Hydrology Present? Yes _X_ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
N/A

Remarks:
Glistening sidewalls to surface. Ground soft and spongey.

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

Photo Set 4 FT-04 Photos

FT-04 Photos









From top to bottom, left to right: Overview photo facing north, overview photo facing east, test pit to the restrictive layer showing water at the ground surface, and soil plug showing organic material.

This page intentionally left blank.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Alaska Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Clam Gulch/ Holmes Pad Borough/City: Kenai, AK Sampling Date: 06/08/2026
Applicant/Owner: Hillcorp Alaska, LLC Sampling Point: FT-07
Investigator(s): Abby Bell Landform (hillside, terrace, hummocks, etc.): Hummocks
Local relief (concave, convex, none): None Slope (%): 0
Subregion: LRR W1, MLRA 224 (Cook Inlet Lowlands) Lat: 60.245497 W Long: -151.382520W Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: PEM1/SS1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea mariana*	50	Yes	FACW
2. *Picea glauca*	20	Yes	FACU
3.			
4.			
	70 =Total Cover		
50% of total cover: 35	20% of total cover: 14		
Sapling/Shrub Stratum			
1. *Salix pulchra*	80	Yes	FACW
2. *Betula nana*	50	Yes	FAC
3. *Alnus viridis*	20	No	FAC
4.			
5.			
6.			
	150 =Total Cover		
50% of total cover: 75	20% of total cover: 30		
Herb Stratum			
1. *Calamagrostis canadensis*	95	Yes	FAC
2. *Chamerion angustifolium*	10	No	FACU
3. *Vaccinium vitis-idaea*	10	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	115 =Total Cover		
50% of total cover: 58	20% of total cover: 23		

Plot Size (radius, or length x width) 50 x 50 % Bare Ground 0
% Cover of Wetland Bryophytes N/A Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 5 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 80.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	130	x 2 =	260
FAC species	175	x 3 =	525
FACU species	30	x 4 =	120
UPL species	0	x 5 =	0
Column Totals:	335 (A)		905 (B)

Prevalence Index = B/A = 2.70

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
60% bryophyte coverage

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

SOIL Sampling Point: FT-07

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-10								Fibric organic
10-20	10YR 2/2	100					Loamy/Clayey	Loam

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol or Histel (A1)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)
- ___ Iron Monosulfide (A18)

Indicators for Problematic Hydric Soils[3]:

- ___ Depleted Below Dark Surface (A11)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)
- ___ Alaska Redox With 2.5Y Hue
- ___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

Restrictive Layer (if observed):
Type: None
Depth (inches): 20

Hydric Soil Present? Yes X No ___

Remarks:
10 inch veg mat plug. Soils were wet throughout. Soils found below water table is soupy.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- X High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ 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 Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- X Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___
Water Table Present?	Yes X	No ___	Depth (inches): 9.5
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 0

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
N/A

Remarks:
Very soft, squishy ground. If someone is stationary, boots do sink into the ground and water surrounds bottom 0.25-inches of boots. Water filled bottom 10.5 inches of test pit.

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

Photo Set 5 FT-07 Photos

FT-07 Photos	
	
	

From top to bottom, left to right: Overview photo facing north, overview photo facing east, test pit to the restrictive layer showing water at the ground surface, and soil plug showing organic material.

This page intentionally left blank.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Alaska Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Clam Gulch/ Holmes Pad Borough/City: Kenai, AK Sampling Date: 06/08/2026
Applicant/Owner: Hillcorp Alaska, LLC Sampling Point: FT-08
Investigator(s): Abby Bell Landform (hillside, terrace, hummocks, etc.): Hummocks
Local relief (concave, convex, none): None Slope (%): 0
Subregion: LRR W1, MLRA 224 (Cook Inlet Lowlands) Lat: 60.245538 N Long: -151.384525 W Datum: NAD 83
Soil Map Unit Name: N/A NWI classification: PEM1B
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation ____, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes X No ____
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:
Northwest corner of polygon about 20 feet from berm

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea glauca*	20	Yes	FACU
2. *Picea mariana*	5	Yes	FACW
3.			
4.			
	25 =Total Cover		
50% of total cover: 13	20% of total cover: 5		
Sapling/Shrub Stratum			
1. *Salix pulchra*	40	Yes	FACW
2.			
3.			
4.			
5.			
6.			
	40 =Total Cover		
50% of total cover: 20	20% of total cover: 8		
Herb Stratum			
1. *Calamagrostis canadensis*	100	Yes	FAC
2. *Chamerion angustifolium*	1	No	FACU
3. *Equisetum arvense*	1	No	FAC
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	102 =Total Cover		
50% of total cover: 51	20% of total cover: 21		

Plot Size (radius, or length x width) 50 x 50 Feet % Bare Ground 0
% Cover of Wetland Bryophytes N/A Total Cover of Bryophytes ____
(Where applicable)

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)
Total Number of Dominant Species Across All Strata: 4 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 75.0% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	45	x 2 =	90
FAC species	101	x 3 =	303
FACU species	21	x 4 =	84
UPL species	0	x 5 =	0
Column Totals:	167 (A)		477 (B)

Prevalence Index = B/A = 2.86

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
X Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

SOIL

Sampling Point: FT-08

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2								Veg mat
2-3								dark fibric organic
3-10	10YR 3/2	90					Loamy/Clayey	With roots (50%)
3-10	7.5YR 3/4	10					Loamy/Clayey	With roots (50%)
10-12	7.5R 3/4	100					Loamy/Clayey	sloppy

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol or Histel (A1)
- X Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Thick Dark Surface (A12)
- ___ Alaska Gleyed (A13)
- ___ Alaska Redox (A14)
- ___ Alaska Gleyed Pores (A15)
- ___ Iron Monosulfide (A18)

Indicators for Problematic Hydric Soils[3]:

- ___ Depleted Below Dark Surface (A11)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ Red Parent Material (F21)
- ___ Very Shallow Dark Surface (F22)

- ___ Alaska Redox With 2.5Y Hue
- ___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
- ___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

Restrictive Layer (if observed):

Type: Ice

Depth (inches): 12

Hydric Soil Present? Yes X No ___

Remarks:

Top 12 inches of soil plug contains plant roots. Veg mat is top 2inches all soils saturated. Will ball but not ribboning. Red lines through soils portion of plug.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- X Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ 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 Remarks)

Secondary Indicators (2 or more required)

- ___ Water-Stained Leaves (B9)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres along Living Roots (C3)
- ___ Presence of Reduced Iron (C4)
- ___ Salt Deposits (C5)
- ___ Stunted or Stressed Plants (D1)
- ___ Geomorphic Position (D2)
- ___ Shallow Aquitard (D3)
- ___ Microtopographic Relief (D4)
- X FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No ___	Depth (inches): ___
Water Table Present?	Yes ___	No ___	Depth (inches): 11.75
Saturation Present? (includes capillary fringe)	Yes X	No ___	Depth (inches): 3

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

N/A

Remarks:

No surface water but .25-inch bottom of pit filled with water. Sidewalls glistening up to veg mat.

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

Photo Set 6 FT-08 Photos

FT-08 Photos









From top to bottom, left to right: Overview photo facing north, overview photo facing east, soil plug showing organic material, and test pit to the restrictive layer showing water at the ground surface.

This page intentionally left blank.

U.S. Army Corps of Engineers
WETLAND DETERMINATION DATA SHEET – Alaska Region
See ERDC/EL TR-07-24; the proponent agency is CECW-CO-R

OMB Control #: 0710-0024, Exp: 9/30/2027
Requirement Control Symbol EXEMPT:
(Authority: AR 335-15, paragraph 5-2a)

Project/Site: Clam Gulch/ Holmes Pad Borough/City: Kenai, AK Sampling Date: 06/08/2026
Applicant/Owner: Hillcorp Alaska, LLC Sampling Point: Wet Edge
Investigator(s): Abby Bell Landform (hillside, terrace, hummocks, etc.): Hummocks
Local relief (concave, convex, none): None Slope (%): 0
Subregion: LRR W1, MLRA 224 (Cook Inlet Lowlands) Lat: 60.2446 N Long:-151.3832 W Datum: NAD 83
Soil Map Unit Name: n/a NWI classification: PEM1E
Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)
Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X
Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present? Yes X No ____
Hydric Soil Present? Yes X No ____
Wetland Hydrology Present? Yes X No ____

Is the Sampled Area within a Wetland? Yes X No ____

Remarks:
Area cleared of trees 6 years ago, per land owner

VEGETATION – Use scientific names of plants.

Tree Stratum	Absolute % Cover	Dominant Species?	Indicator Status
1. *Picea glauca*	30	Yes	FACU
2. *Picea mariana*	30	Yes	FACW
3.			
4.			
	60 =Total Cover		
50% of total cover: 30	20% of total cover: 12		
Sapling/Shrub Stratum			
1. *Betula nana*	100	Yes	FAC
2. *Alnus viridis*	10	No	FAC
3.			
4.			
5.			
6.			
	110 =Total Cover		
50% of total cover: 55	20% of total cover: 22		
Herb Stratum			
1. *Lycopodium lagopus*	100	Yes	FACU
2. *Rhododendron groenlandicum*	50	Yes	FAC
3. *Vaccinium vitis-idaea*	50	Yes	FAC
4. *Rubus chamaemorus*	10	No	FACW
5.			
6.			
7.			
8.			
9.			
10.			
	210 =Total Cover		
50% of total cover: 105	20% of total cover: 42		
Plot Size (radius, or length x width) 50 x 50	% Bare Ground 0		
% Cover of Wetland Bryophytes N/A (Where applicable)	Total Cover of Bryophytes ____		

Dominance Test worksheet:
Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)
Total Number of Dominant Species Across All Strata: 6 (B)
Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7% (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	40	x 2 =	80
FAC species	210	x 3 =	630
FACU species	130	x 4 =	520
UPL species	0	x 5 =	0
Column Totals:	380 (A)		1230 (B)

Prevalence Index = B/A = 3.24

Hydrophytic Vegetation Indicators:
X Dominance Test is >50%
___ Prevalence Index is ≤3.0[1]
___ Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
___ Problematic Hydrophytic Vegetation[1] (Explain)
[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks:
Open hummock field where trees were previously cleared.

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

SOIL Sampling Point: Wet Edge

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-5								Veg mat
5-9	10YR 2/2	50					Loamy/Clayey	Fibric organic, held together by roots (50%)
9-10	10YR 2/2	100					Loamy/Clayey	loose

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

___ Histosol or Histel (A1)
_X_ Histic Epipedon (A2)
___ Black Histic (A3)
___ Hydrogen Sulfide (A4)
___ Thick Dark Surface (A12)
___ Alaska Gleyed (A13)
___ Alaska Redox (A14)
___ Alaska Gleyed Pores (A15)
___ Iron Monosulfide (A18)

Indicators for Problematic Hydric Soils[3]:

___ Depleted Below Dark Surface (A11)
___ Depleted Matrix (F3)
___ Redox Dark Surface (F6)
___ Depleted Dark Surface (F7)
___ Redox Depressions (F8)
___ Red Parent Material (F21)
___ Very Shallow Dark Surface (F22)

___ Alaska Redox With 2.5Y Hue
___ Alaska Gleyed Without Hue 5Y or Redder Underlying Layer
___ Other (Explain in Remarks)

[3]One indicator of hydrophytic vegetation, one primary indicator of wetland hydrology, and an appropriate landscape position must be present unless disturbed or problematic.

Restrictive Layer (if observed):
Type: Ice
Depth (inches): 10

Hydric Soil Present? Yes _X_ No ___

Remarks:
Only 1inch of mineral layer in this plug. Roots through top 9 inches. Uniform in color under veg mat. Soil will ball but not ribbon.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (any one indicator is sufficient)

___ Surface Water (A1)
_X_ High Water Table (A2)
_X_ Saturation (A3)
___ Water Marks (B1)
___ Sediment Deposits (B2)
___ Drift Deposits (B3)
___ Algal Mat or Crust (B4)
___ Iron Deposits (B5)
___ 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 Remarks)

Secondary Indicators (2 or more required)

___ Water-Stained Leaves (B9)
___ Drainage Patterns (B10)
___ Oxidized Rhizospheres along Living Roots (C3)
___ Presence of Reduced Iron (C4)
___ Salt Deposits (C5)
___ Stunted or Stressed Plants (D1)
___ Geomorphic Position (D2)
_X_ Shallow Aquitard (D3)
___ Microtopographic Relief (D4)
___ FAC-Neutral Test (D5)

Field Observations:

Surface Water Present?	Yes ___	No _X_	Depth (inches): ___
Water Table Present?	Yes _X_	No ___	Depth (inches): 10
Saturation Present? (includes capillary fringe)	Yes _X_	No ___	Depth (inches): 0

Wetland Hydrology Present? Yes _X_ No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:
N/A

Remarks:
Surface water 30 feet away. Glistening sidewalls to surface.

ENG FORM 6116, SEP 2024 Alaska – Version 2.0

Photo Set 7 Wet Edge Photos

Wet Edge Photos	
	
	

From top to bottom, left to right: Overview photo facing north, overview photo facing east, test pit to the restrictive layer showing water at the ground surface, and soil plug showing organic material.

This page intentionally left blank.

Photo Set 8 R2UBF System Photographs

R2UBF System Photos (North-South)









From top to bottom, left to right: Overview of the R2UBF system looking north; overview of the R2UBF system looking south; system width (approximately 48 inches [122 cm]); and system depth (approximately 3 inches [7.6 cm]).

Photo Set 9 R2UBF System Photographs

R2UBF System Photos (East-West)	
	
	

Cardinal direction from top to bottom, left to right: Facing north, facing east, facing south, facing west.

Photo Set 10 Observation Point-05 Photographs

OBVS-05 Photos	
	
	

Cardinal direction from top to bottom, left to right: Facing north, facing east, facing south, facing west. Photos were taken here to show that site conditions match those found at Field Target FT-02.

Photo Set 11 Observation Point-09 Photographs

OBVS-09 Photos	
	
	

Cardinal direction from top to bottom, left to right: Facing north, facing east, facing south, facing west. Conversations with the landowner clarified that this area had been cleared of larger vegetation in 2020.

Photo Set 12 Observation Point-10 Photographs

OBVS-10 Photos









Cardinal direction from top to bottom, left to right: Facing north, facing east, facing south, facing west. Conversations with the landowner clarified that this area had been cleared of larger vegetation in 2020.

Photo Set 13 Observation Point-11 Photographs

OBVS-11 Photos	
	
	

Cardinal direction from top to bottom, left to right: Facing North, facing east, facing south, facing west. Note the hummock landscape and standing water with iron deposits.

Photo Set 14 Additional Study Area Photographs

Man Made Berm	
	
	

Cardinal direction from top to bottom, left to right: Facing north, facing east, facing south, facing west.

This page intentionally left blank.

Electronic Distribution

Client:	
Name:	Hilcorp Alaska, LLC 3800 Centerpoint Drive, Suite 1400 Anchorage, Alaska 99503
Attn:	Stetson Sannes

ACES Project Staff:	
Lead Author:	Jeline De Vera Gagnon
Peer Reviewer:	Abby Bell
Technical Editor:	Lori Jo Oswald
Quality Control Reviewer:	Samantha Simpson
Project Manager:	Abby Bell

Project File:

S:\ACES\02-PROJECTS\HILCORP\18383 Clam Gulch Wetlands and Cultural\03 Wetlands Delineation and Reporting\6 Report

This page intentionally left blank.