



**Contaminated Soil and Water Management Plan
for
Anode Groundbed Installation
Middle Ground Shoals Onshore Facility**

October 2022

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ACRONYMS AND ABBREVIATIONS

AAC	Alaska Administrative Code
ADEC	Alaska Department of Environmental Conservation
CS	(ADEC) Contaminated Sites
DRO	diesel-range organics
E&P	exploration and production
G&I	Grind & Inject
GRO	gasoline-range organics
Hilcorp	Hilcorp Alaska, LLC
KGF	Kenai Gas Field
MGS	Middle Ground Shoals
PAH	polycyclic aromatic hydrocarbon
PID	photoionization detector
ppm	parts per million
PPR	(ADEC) Prevention Preparedness and Response
QEP	qualified environmental professional
RCRA	Resource Conservation and Recovery Act
ROD	Record of Decision
RRO	residual range organics
SWMP	Soil and Water Management Plan
VOCs	volatile organic compounds

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1 INTRODUCTION

This soil and water management plan (SWMP) describes the procedure by which Hilcorp Alaska, LLC (Hilcorp) will manage contaminated soil and water if encountered during anode groundbed installation activities at the Middle Ground Shoals (MGS) Onshore facility. The project is tentatively scheduled to occur in October 2022; however, the project activities may be delayed until spring 2023. The MGS Onshore facility is located on the east side of the Upper Cook Inlet in Nikiski, Alaska (Figure 1). Natural gas is transported to the MGS Onshore facility via pipelines from off-shore platforms in Cook Inlet. Two trenches will be excavated, and a 12-inch diameter hole will be drilled to 600-feet below grade.

Subsurface work will occur within 1,500 ft of four Alaska Department of Environmental Conservation (ADEC) Contaminated Sites (CS) designated sites:

- Middle Ground Shoals Onshore Facility (Hazard ID 2423 / File Number 2323.38.020) (Active)
- Tesoro KPL Middle Ground Shoal Facility (Hazard ID 1516 / File Number 2323.38.039) (Active)
- Shell Western Middle Ground Shoal (Hazard ID 456 / File Number 2323.38.002) (Cleanup Complete)
- Shell Onshore Facility – Landfarm (Hazard ID 2437 / File Number 2323.38.027) (Cleanup Complete)

Section 2 of this SWMP details the four ADEC CSs. The primary objective of this SWMP is to ensure contaminated soil and water, if encountered during project activities, are managed to achieve the following:

- Protection of human health and the environment,
- Minimization of waste generation where practicable and in compliance with regulations, and
- Prevention of delays to construction activities.

Activities to meet this objective include the following:

- Identifying areas with known contamination in the project vicinity.
- Monitoring for contamination.

- Segregation, investigation, and treatment and/or disposal or recycling of contaminated soil and water.
- Employing an ADEC qualified environmental professional (QEP) to handle sampling of suspected contamination, if encountered, and
- Use of qualified laboratories to process required analytical samples.

2 CONTAMINATED SITES WITHIN 1,500 FEET OF INSPECTION EXCAVATIONS

Four ADEC CSs are present within 1,500 ft of project activities as determined through a record search of the ADEC CS Database (ADEC 2022a). Two sites, located southwest of the project area, have an ADEC status of *cleanup complete*, and the other two sites are *active* according to the ADEC CS database. Sites are shown on Figure 1, with the cleanup complete sites represented by green triangles and the active sites represented as red triangles. The following are descriptions of the four sites.

2.1 MIDDLE GROUND SHOALS ONSHORE FAC.

Site Name: Middle Ground Shoals Onshore Fac./ ADEC CS Hazard ID: 2423 / File Number: 2323.38.020/ CS Status: Active

The Middle Ground Shoals Onshore Facility spill was a crude oil leak under existing pad piping to the west of the Pump Building and located about 950 ft to the west of the anode groundbed work site. ADEC's CS database describes the site as a crude oil spill due to a malfunctioning valve. Soil excavation was conducted at the site, confirmation samples were all below applicable cleanup levels and the excavation was backfilled. Groundwater monitoring and product recovery efforts were undertaken for several years from 2003 to 2012. The contaminant plume was noted to be stable and is in a perched aquifer. Free product recovery continued to decrease until no measurable product was recovered in the wells and the wells were decommissioned in 2012. There is contamination remaining underneath the buildings which will be cleaned up when the facility is decommissioned. Former Site Name was the LACT Building.

2.2 TESORO KPL MIDDLE GROUND SHOAL FAC.

Site Name: Tesoro KPL Middle Ground Shoal Fac./ ADEC CS Hazard ID: 1516 / File Number: 2323.38.039/ CS Status: Active

During assessment activities in conjunction with the KPL Middle Ground Shoals pump building, petroleum contamination was encountered due to historic crude oil releases. The pump building houses pumps and transfer lines that are used in shipping crude oil from the former Shell Western East Forelands facility (also known as the Cross Timbers or XTO facility) to the KPL facility. Approximately 200 CY of contaminated soil was removed from the pad and thermally remediated at OIT in Fairbanks. The site is approximately 850 ft west southwest of the anode installation location.

2.3 SHELL WESTERN MIDDLE GROUND SHOAL

Site Name: Shell Western Middle Ground Shoal / ADEC CS Hazard ID: 456 / File Number: 2323.38.002 / CS Status: Cleanup Complete

The Shell Western Middle Ground Shoal site is located southwest of the MGS Onshore Facility pad. ADEC's CS database describes the site as an overflow of a sump tank on 12/8/88 releasing crude oil. The initial response removed the liquid portion of the spill and most of the oiled snow and vegetation. Oiled soils were removed from the initial excavation. Cleanup and remediation activities continued, eventually resulting in full excavation to clean boundaries of contaminated soils and disposal/treatment of approximately 5,000 cubic yards of stockpiled material.

During site characterization, soil borings were conducted which showed that the soils encountered were generally silts with varying amounts of fine sands and organics. No free product or groundwater was encountered during delineation. Static water levels at 4 wells in the area ranged from 18 to 75 feet at groundwater wells in the area.

The site has been designated as cleanup complete, but advance approval is required to transport soil or groundwater off-site. This site was located approximately 1,100 ft southwest of the anode installation site.

2.4 SHELL ONSHORE FACILITY – LANDFARM

Site Name: Shell Onshore Facility – Landfarm / HAZARD ID: 2437 / File Number 2323.38.027/ CS Status: Cleanup Complete

The Shell Onshore Facility Landfarm site is off the southeast edge of the MGS Onshore Facility pad in an area that is currently vegetated. ADEC's CS database describes the site as 280 barrels found in a pit with contaminated soil. The site was designated cleanup complete after removal of contaminated material and analytical results for the site met Method 2 criteria and levels were below the ACL's established in the 2000 Record of Decision (ROD).

The site has been designated as cleanup complete, but advance approval is required to transport soil or groundwater off-site. This site is located approximately 800 ft southwest of the anode installation site.

3 EXCAVATION MONITORING

As described in Section 2 of this SWMP, there are four ADEC CSs within 1,500 feet of proposed anode work locations. This SWMP will be implemented to assist project crews in monitoring and response efforts should contamination be encountered.

The work is detailed on Figures 1 and 2. A permanent rectifier and anode junction box will be mounted to an aboveground rack supported by buried concrete pilings. The groundbed will consist of a 600 foot deep, 12-inch vertical diameter hole that will be drilled to install anodes. Drilling may or may not be done with water based drilling mud. Once the anodes are installed inside the hole, coke breeze, bentonite or cement, and excavated material at designated design depths will be used to backfill the hole to grade. The anode cables coming from the vertical anode hole will be trenched in a 2-3 feet deep trench to the rectifier and anode junction box rack (approximately 80 feet long). A1 and B1 pipelines will be exposed to attach the negative connections and backfilled to grade. The negative cables attached to the A1 and B1 pipelines will be trenched in a 2-3 feet deep trench to the rectifier and anode junction box rack (approximately 40 feet long).

The MGS Onshore Facility Field Foreman or designee is responsible for identifying the presence of impacted soils and managing impacted soils prior to arrival of a Qualified Environmental Professional (QEP). Other personnel such as equipment operators and laborers will also monitor for evidence of contaminated soil and/or water during excavation. Monitoring will include visual and olfactory observations. Evidence of contamination may include a hydrocarbon/chemical odor, stained soil, free product, or hydrocarbon sheen on

the water. Upon encountering contamination, a QEP will be brought to the site to conduct screening and collect analytical characterization sampling, as needed.

If excavated soil or soil cuttings display no sign of contamination, they may be staged adjacent to the dig site or other nonsegregated and unlined staging area and reused as backfill at project completion. Upon observing soil and/or groundwater contamination, a QEP will be brought on site and soil will be segregated and stockpiled as described in Section 4.1 and then sampled as described in Section 3.1. Soils will be segregated into a lined and bermed containment based on odor and/or staining. Impacted soils will be characterized by analytical sampling as described in Section 3.1.

Groundwater is not anticipated to be encountered during trench excavation according to groundwater levels in monitoring wells to the west on the MGS grounds (20-25 feet below ground surface in some cases). No dewatering is anticipated.

There is no known contamination in the immediate vicinity and the closest active contaminated site, CS ID 1516, is 850 feet west southwest of the anode installation location. Slurry and cuttings produced from drilling can be deposited to the ground surface adjacent to the boring, and used to backfill the boring as needed. If this is not feasible due to the volume of cuttings, then the material can be stored on the surface elsewhere on the pad. If contamination is encountered during drilling activities, then the cuttings will be captured as waste and characterized and disposed appropriately.

3.1 SOIL SCREENING AND SAMPLING

If contaminated soil or water is encountered, a QEP will be brought onsite to segregate material, characterize the soil and/or water, conduct field screening, and collect analytical samples following the methods described in this section.

To characterize soil, the QEP will perform field screening via headspace organic vapor analysis using a photoionization detector (PID). The ADEC *Field Sampling Guidance* (ADEC 2022b) dictates the soil sample collection, frequency, and screening procedures. When available, field screening samples will consist of freshly uncovered soil to minimize the potential for volatilization. If freshly uncovered soil is unavailable, collected soil must be from a minimum of six inches below the soil surface.

Field screening will be used to guide the excavation and determine if clean limits have likely been met. Once clean limits appear to have been met in the excavation, field screening will be conducted in accordance with Table 2B of the ADEC's *Field Sampling Guidance* (ADEC 2022b). Field sketches will record the locations of field screening samples. Results of the PID headspace readings will be used to determine if additional excavation is required and/or the appropriate locations to collect analytical confirmation samples.

PID headspace readings will also be collected at the frequencies specified in Table 2A of the ADEC's *Field Sampling Guidance* (ADEC 2022b) from each stockpile created during excavation of the site. These PID readings will be used to determine the appropriate locations to collect analytical samples from each stockpile.

Impacted soil will be segregated into a lined and bermed containment and have at least one analytical sample collected. Analytical samples will also be collected if the QEP deems it necessary based upon field observations and professional judgment. Field logbooks will be used to record the PID results and evidence or observations to support decisions made upon professional judgement. Analytical samples will be sent to SGS North America Inc. for the following analyses:

- Diesel-range organics (DRO)/residual range organics (RRO) by Methods AK102/103,
- Gasoline-range organics (GRO) by Method AK101,
- Petroleum-related volatile organic compounds (VOCs) by Method SW8260,
- Polycyclic aromatic hydrocarbon (PAH)-selective ion monitoring by Method SW8270-SIM, and
- Resource Conservation and Recovery Act (RCRA) Metals.

If non-petroleum-related contamination is suspected, additional analytical methods may be required and will be determined in coordination with ADEC.

Hilcorp maintains onsite spill response materials. The QEP will provide a PID for field screening as well as the necessary items to collect, package, and ship analytical soil and water samples.

3.2 NOTIFICATIONS

If contamination is identified and is not associated with a known ADEC contaminated site, Hilcorp will notify ADEC's Prevention, Preparedness, and Response (PPR) Program of the newly discovered contamination. In collaboration, ADEC PPR, CS programs, and Hilcorp will determine if the found contamination will be added to the PPR or CS program and Hilcorp will address the site under that program's management.

The onsite QEP will track the location and quantity of contaminated soil and groundwater generated, document the results of the field screening and analytical samples collected, and summarize them in a report of the 2022 excavation and drilling activities (see Section 5.0 for additional details).

If construction activities cause a new release, the standard reporting procedures will be followed and the necessary spill response activities will be employed. Excavations beyond the footprint needed to conduct the project will not occur unless an active release or gross contamination is observed, or if required by ADEC.

4 CONTAINMENT OF CONTAMINATION

Standard soil and wastewater management procedures for construction, utility excavation, and trenching will be implemented to prevent the spread of contaminated soil and water from stormwater runoff, erosion, spillage from loads, or tracking of soils by heavy equipment. Soil and water will be containerized and transported as described in Sections 4.1 and 4.2. If necessary, stockpiles will be covered, water will be removed from the stockpile containment area, and erosion control measures including silt fence, straw wattles, or similar will be installed to minimize runoff and erosion. Once excavation and backfill are complete, excess uncontaminated soil will be spread to match the existing grade or will be transported off-site for reuse or disposal.

4.1 CONTAMINATED SOIL SEGREGATION AND STORAGE

Soil that is known or suspected of being contaminated will be segregated and stockpiled in accordance with the ADEC *Field Sampling Guidance* (ADEC 2022b) and 18 Alaska Administrative Code (AAC) 75.370 Soil Storage and Disposal (ADEC 2021). Soil believed to be contaminated will be staged adjacent to the trench or at a nearby staging area in lined and bermed soil stockpiles or other suitable waste storage containers. If soils are saturated,

special precautions will be implemented, including storage in close proximity to the source, monitoring material transport in the excavator bucket and/or dump truck, and if necessary, the lined staging area will be retrofitted with a sump to collect water within the storage area and prevent potential spills of contaminated water to the ground surface.

Contaminated soil stockpiles will be constructed in accordance with 18 AAC 75.370 Soil Storage and Disposal (ADEC 2021). Stockpiles will be located 100 ft or more from surface water bodies and drinking water supply wells. The construction materials will meet the specifications listed in Table D of 18 AAC 75.370. The stockpile will be covered when soil is not being added or removed and will be constructed to minimize water accumulation on the top cover.

If contaminated soil is inadvertently placed directly onto the ground surface, the QEP will conduct field screening once the contaminated soil has been transferred to containment to verify that the native ground surface was not impacted. The sampling frequency will follow specifications provided in Table 2B of the *ADEC Field Sampling Guidance* (ADEC 2022b). If field screening samples have PID readings less than 20 ppmV and there are no other indications of potential contamination (visual/olfactory), the native soil will be considered clean and no analytical samples will be collected.

If PID readings exceed 20 parts per million (ppm), analytical samples will be collected following the specifications provided in Table 2B of the *Field Sampling Guidance* (ADEC 2022b). Additional removal will be conducted if the analytical samples from the native soil have concentrations exceeding the most stringent ADEC Tables B1 and B2 cleanup levels for the under 40-inch precipitation zone (ADEC 2021).

If soil is suspected to be contaminated with a chemical other than hydrocarbons, that soil will be segregated into a separate stockpile or other suitable waste storage container. Waste characterization samples will be collected to determine what chemicals are present and the proper disposal/treatment method.

4.2 EXCAVATION DEWATERING

If needed, excavation dewatering will be conducted using a vacuum truck. The water will be disposed in the MGS produced water treatment system, with approval from Hilcorp's Waste Specialist.

4.3 WASTE TRANSPORT AND OFF SITE DISPOSAL

Soil and groundwater that is contaminated due to oil and gas exploration and production (E&P) may be considered E&P exempt from RCRA Subtitle C regulation, under the 1980 Solid Waste Disposal Act Amendments to RCRA, Section 3001(b)(2)(A). Prior to offsite shipment of contaminated material, an ADEC Transport, Treatment, & Disposal Approval Form for Contaminated Media will be completed and submitted to ADEC for review and approval.

Certain types of waste are not considered hazardous waste under RCRA, and are not subject to the same storage, transportation and disposal rules as hazardous waste. Exemptions are based on the source of the waste, not on its actual properties or composition. The E&P exemption is for drilling fluids, produced water, and other wastes uniquely associated with oil and gas exploration, development, and production. Associated wastes include fluids that come in contact with the oil and gas production stream during the removal of produced water or other contaminants from the crude oil. E&P exempt wastes are not regulated as hazardous waste regardless of their composition or properties. The QEP will work with the Hilcorp Waste Specialist to confirm whether waste is or is not E&P exempt prior to disposal.

Contaminated soil will be handled dependent on waste classification and contaminant concentrations:

- Contaminated soil that is non-hazardous/non-exempt or E&P exempt may be disposed of at the Kenai Gas Field (KGF) Grind & Inject (G&I) facility.
- Contaminated soil that is considered hazardous under RCRA regulations will be containerized and transported off site for disposal or treatment at a permitted facility.
- If no visual or olfactory evidence of contamination is identified during the excavation activities, the soil can be used to backfill the excavation and/or reused on-site.

Contaminated water encountered during excavation activities will be transported to the MGS produced water treatment system. Contaminated water that is non-E&P exempt and

considered hazardous under RCRA regulations may be containerized and transported off site for disposal or treatment at a permitted facility.

5 DOCUMENTS AND REPORTING

No documentation or reporting in association with this plan will occur unless a QEP is called to the site due to encountered contamination. When onsite, the QEP will maintain a field logbook to document daily project activities related to this plan. The QEP will take digital photographs to document site activities and conditions. When possible, the QEP will collect latitude and longitude coordinates and measurements around the perimeter of the excavation to document excavation dimensions of impacted areas. Approximate locations of analytical samples will be measured from the excavation perimeter and documented in the field logbook. Following the completion of applicable earthwork, sampling, and receipt of the analytical results, the QEP will prepare a summary report.

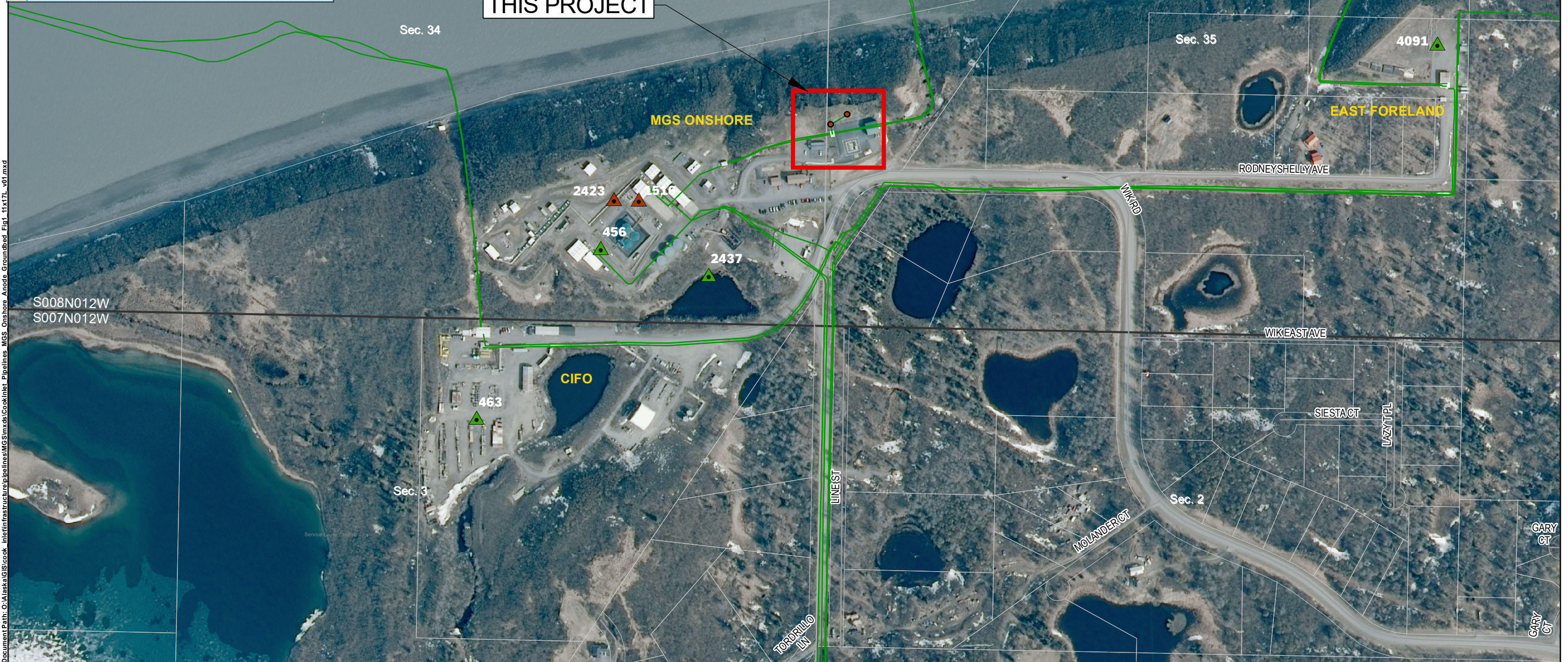
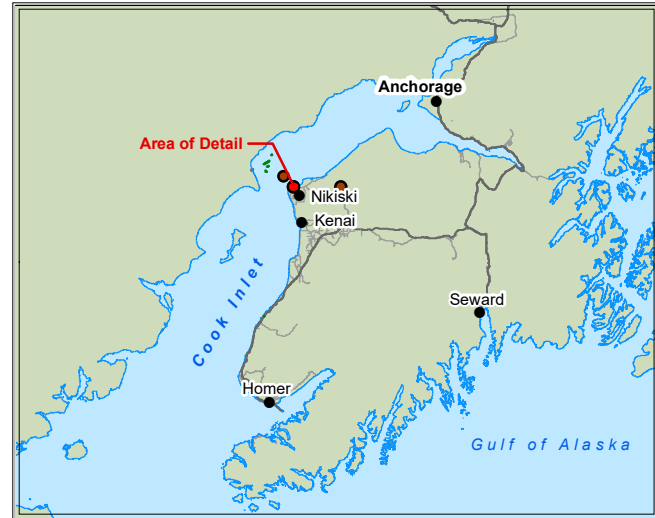
The report will include field screening and sampling results (including the laboratory reports), and figures with trenching and sampling locations. The report will also contain the field notes, waste tracking, and photograph log. An ADEC Laboratory Data Review Checklist and quality assurance report will be prepared for analytical data used for site characterization purposes following ADEC *Field Sampling Guidance* (ADEC 2022b).

6 REFERENCES

- ADEC. 2021 (June). Title 18 of the Alaska Administrative Code, Chapter 75 (18 AAC 75), *Oil and Other Hazardous Substances Pollution Control*, as amended through 24 June 2021.
- ADEC. 2022a (July). Contaminated Sites Database (summaries). Website accessed Aug 2022: <http://dec.alaska.gov/Applications/SPAR/PublicMVC/CSP/Search>.
- ADEC. 2022b (January). *Field Sampling Guidance*.

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FIGURES



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**MGS Onshore Anode Groundbed Project
Location Map**

Existing Oil and Gas Pipelines

