



ADDENDUM

Contaminated Soil and Water Management Plan for KGF Pads 14-6, 34-31 and 33-30 Pig Launcher Installations

Kenai Gas Field, Alaska

July 2022

Prepared by:

A handwritten signature in black ink, appearing to read 'M. Mayer', is written over a horizontal line.

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Acronyms

ADEC	Alaska Department of Environmental Conservation
APDES	Alaska Pollutant Discharge Elimination System
Bgs	below ground surface
BMP	Best Management Practices
CS	(ADEC) Contaminated Site
DRO	diesel-range organics
E&P	exploration and production
ft	feet
G&I	grind and inject
GRO	gasoline-range organics
Hilcorp	Hilcorp Alaska, LLC
ID	identification
KGF	Kenai Gas Field
LNAPL	light non-aqueous phase liquid
PAH	polycyclic aromatic hydrocarbon
PID	photoionization detector
QEP	qualified environmental professional
RCRA	Resource Conservation and Recovery Act
RRO	residual-range organics
SGS	SGS North America Inc.
SWMP	soil and water management plan
VOC	volatile organic compounds

1.0 Introduction

This plan addendum provides updated information to assist in the management of contaminated soil and water, if encountered, during excavation activities associated with pig launcher construction at the Hilcorp Alaska, LLC (Hilcorp) operated Kenai Gas Field (KGF) (Figure A-1).

The KGF Pig Launcher Installation activities will occur at four locations on KGF Pads 34-31, 14-6, and 33-30 (Figure A-2), and one pipeline inspection will occur at KGF Pad 34-31 near the same location as the pig launcher installation. Construction will occur within 1,500 feet (ft) of two Alaska Department of Environmental Conservation (ADEC) Contaminated Sites (CS) designated as Active; Kenai Gas Field Pad 14-6 (Hazard Identification [ID]: 2434/File Number: 2320.38.029) and Kenai Gas Field Pad 34-31 (Hazard ID: 3331/File Number: 2320.38.031), and two sites designated as cleanup complete; UNOCAL K-B Gas Field (Hazard ID: 23442 / File Number: 2333.26.044) and Old Keener Property (Hazard ID: 476 / File Number: 2320.38.041). All ADEC CSs within 1,500 ft of planned excavation activities are detailed in Section 2 of the 2021 Contaminated Soil and Water Management Plan for KGF Pad 14-6 Pig Launcher Excavations.

2.0 Contaminated Sites

Four ADEC contaminated sites are present within 1,500 ft of the proposed excavation activities as described in Section 2.0 of the 2021 Contaminated Soil and Water Management Plan for KGF Pad 14-6 Pig Launcher Excavations.

2.1 Kenai Gas Field Pad 34-31

Site Name: Kenai Gas Field Pad 34-31 / ADEC CS Hazard ID: 3331 / File Number: 2320.38.031 / CS Status: Active

The detailed history of this site is included in Section 2.2 of the 2021 KGF soil and water management plan (SWMP). The proposed ground disturbance area on Pad 34-31 will occur approximately 200 ft southeast and cross-gradient to the active CS, and within 1,500 ft southwest and downgradient of the two cleanup complete sites (Figure A-3).

During the most recent groundwater sampling event in 2021, contaminated groundwater was located on western portion of the pad. The groundwater contamination plume remains un-delineated to the southwest. Depth to groundwater ranges from 10.57 ft below ground surface (bgs) in MW-13 to 19.77 ft bgs in MW-15; the depth to groundwater in the wells nearest to the project area are 14.69 ft bgs (MW-12) and 12.59 ft bgs (MW-17) (Hilcorp, 2022). Groundwater is not anticipated to be intersected during excavation activities. There is no known soil contamination on the pad. Contaminated soil is not anticipated to be encountered during excavation activities; however, field crews will monitor for contamination and will be prepared to respond as described in Sections 3 and 4 of the SWMP.

2.2 UNOCAL K-B Gas Field

Site Name: UNOCAL K-B Gas Field / ADEC CS Hazard ID: 23442 / File Number: 2333.26.044 / CS Status: Cleanup Complete

The detailed history of this site is included in Section 2.3 of the 2021 KGF SWMP. The proposed ground disturbance area on Pad 34-31 will occur within 1,500 ft of this site (Figure A-3). The proposed project will not include the transport of soil or groundwater from this site.

2.3 Old Keener Property

Site Name: Old Keener Property / ADEC CS Hazard ID: 476 / File Number: 2320.38.041 / CS Status: Cleanup Complete

The detailed history of this site is included in Section 2.4 of the 2021 KGF SWMP. The proposed ground disturbance area on Pad 34-31 will occur within 1,500 ft of this site (Figure A-3). The proposed project will not include the transport of soil or groundwater from this site.

2.4 Kenai Gas Field Pad 14-6

Site Name: Kenai Gas Field Pad 14-6 / ADEC CS Hazard ID: 2434 / File Number: 2320.38.029 / CS Status: Active

The detailed history of this site is included in Section 2.1 of the 2021 KGF SWMP. The proposed ground disturbance area (Figure A-4) on Pad 14-6 will occur in direct proximity to the most recently detected groundwater contamination plume at this CS. Contaminated groundwater, including light non-aqueous phase liquid (LNAPL), remains on site. Depth to groundwater ranges from 1.86 ft bgs in MW-33 to 5.21 ft bgs in MW-17; the depth to groundwater in the wells nearest to the project area are 4.65 ft bgs (MW-7), 5.16 ft bgs (MW-23), and 5.35 ft bgs (MW-5). Both wells, MW-7 and MW-23 contained analytes exceeding ADEC cleanup levels in 2021. In addition, approximately 0.17 ft of free product was measured in MW-23 during 2021 gauging activities (Hilcorp, 2022). Potentially impacted groundwater will likely be encountered during excavation activities. A Qualified Environmental Professional (QEP) will be on site to monitor for contamination and respond as described in Sections 3 and 4 of the SWMP.

3.0 Excavation Monitoring

Disturbance activities are anticipated to be from 6 ft to 9 ft deep with trenches up to 35 ft long and 30 ft wide. This SWMP will be implemented to assist project crews in monitoring and response efforts should contamination be encountered during ground disturbance activities. Excavation monitoring will follow the same protocol set forth in Section 3.0 of the 2021 Contaminated Soil and Water Management Plan for KGF Pad 14-6 Pig Launcher Excavations.

If groundwater is encountered and dewatering is needed to execute the pig launch installation project plan, dewatering will comply with the 2020 Best Management Practices (BMP) Plan for Discharges and Disposals Under Alaska Department of Environmental Conservation General Permit for Statewide Oil and Gas Pipelines (Hilcorp, 2020) issued under the ADEC General Permit for Statewide Oil and Gas Pipelines and the Alaska Pollutant Discharge Elimination System (APDES) Hilcorp authorization AKG320004 issued under the Statewide Oil and Gas Pipeline General Permit AKG320000.

3.1 Soil and Water Screening and Sampling

If field personnel identify contaminated soil and/or water, a QEP will be called to the site to assess the contamination, conduct field screening with a photoionization detector (PID), and potentially collect analytical characterization samples following the methods described in Section 3.1 of the 2021 Contaminated Soil and Water Management Plan for KGF Pad 14-6 Pig Launcher Excavations.

If contaminated groundwater is encountered and is suspected to be associated with a nearby CS that is part of a groundwater monitoring program, an analytical suite derived from the applicable monitoring program will be used to characterize samples. Analytical samples from contaminated groundwater, if

encountered during excavation activities near the active CS Kenai Gas Field Pad 14-6, or the active CS Kenai Gas Field Pad 34-31, will be submitted to SGS North America Inc. (SGS) for the respective analytical suites listed in Section 3.1 of the 2021 Contaminated Soil and Water Management Plan for KGF Pad 14-6 Pig Launcher Excavations.

If contaminated soil or groundwater are not suspected to be associated with a known contaminated site, analytical samples will be submitted to SGS for the following analyses:

- Gasoline-range organics (GRO) by Method AK101
- Diesel-range organics/ Residual-range organics (DRO/RRO) by Method AK102/103
- Petroleum-related volatile organic compounds (VOCs) by Method SW8260
- Polycyclic aromatic hydrocarbon (PAH)-selective ion monitoring by Method SW8270-SIM
- 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.

3.2 Notifications

Notifications will be made in accordance with Hilcorp policies and procedures as outlined in Section 3.2 of the 2021 Contaminated Soil and Water Management Plan for KGF Pad 14-6 Pig Launcher Excavations.

4.0 Containment of Contamination

Standard soil and wastewater management procedures for KGF pig launcher installation activities will be implemented as described in Section 4.0 of the KGF SWMP.

4.1 Contaminated Soil Segregation, Storage, and Transport

Soil that is known or suspected to be contaminated will be segregated and stockpiled as described in Section 4.1 of the KGF SWMP.

4.2 Excavation Dewatering

Dewatering will be performed in accordance with the 2020 Best Management Practices (BMP) Plan for Discharges and Disposals Under Alaska Department of Environmental Conservation General Permit for Statewide Oil and Gas Pipelines (Hilcorp, 2020) issued under the ADEC General Permit for Statewide Oil and Gas Pipelines and the APDES Hilcorp Alaska LLC Pipeline System Operations Permit AKG320004 issued under the Statewide Oil and Gas Pipeline General Permit AKG320000.

Excavation dewatering details are provided in the 2021 Contaminated Soil and Water Management Plan for KGF Pad 14-6 Pig Launcher Excavations.

4.3 Waste Transport and Offsite Disposal

Contaminated soil and water will be managed dependent on waste classification and contaminant concentrations, as determined by visual and olfactory evidence and waste characterization sampling results:

- Contaminated soil or water that is E&P exempt will be disposed of at the KGF G&I facility.

- Contaminated soil or water that is non-hazardous and non-E&P exempt may be disposed of at the KGF G&I facility. Contaminated soil that cannot be disposed of at KGF G&I facility may be containerized and transported offsite for thermal treatment at a permitted facility.
- Contaminated soil or water that is considered hazardous under RCRA regulations will be containerized and transported offsite for disposal or treatment through a third party waste management contractor.

5.0 Documentation and Reporting

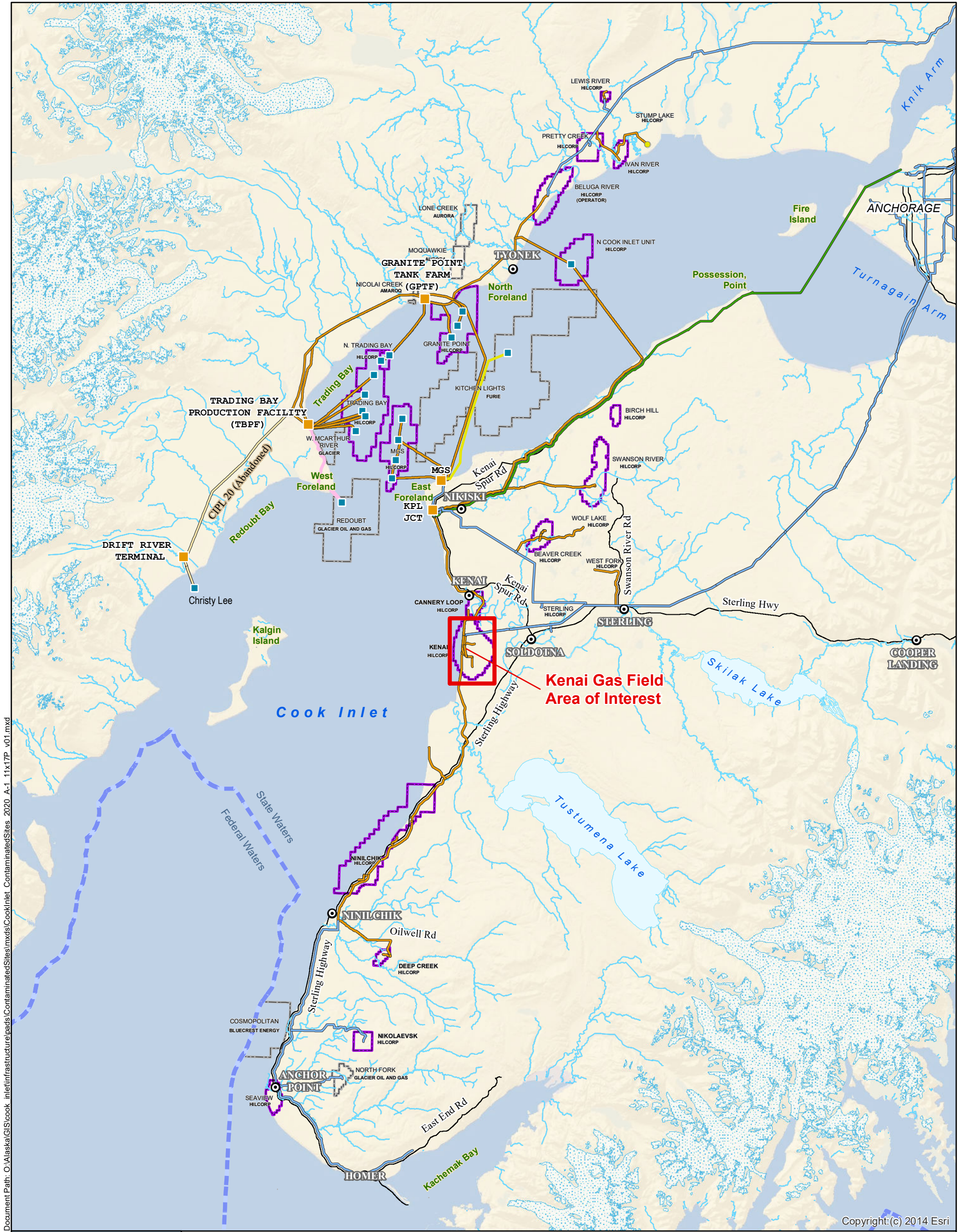
Documentation and reporting in association with this plan will be conducted by the QEP only if contamination is encountered. If contamination is not encountered and analytical samples are not required, a summary report will not be prepared. Details are provided in Section 5.0 of the 2021 Contaminated Soil and Water Management Plan for KGF Pad 14-6 Pig Launcher Excavations.

6.0 References

Hilcorp. 2020. 2020 Best Management Practices Plan for Discharges and Disposals Under Alaska Department of Environmental Conservation General Permit for Statewide Oil and Gas Pipelines.

Hilcorp. 2022. 2021 Groundwater Monitoring Program Report, Kenai Peninsula Sites, Alaska. Kenai Gas Field, Kenai Peninsula, Alaska.

Figures



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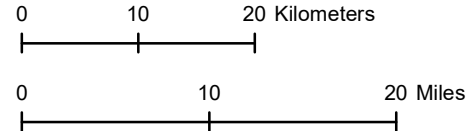
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Legend

- Onshore Facilities
 - Offshore Platforms
 - State/Federal Boundary (3 Mile Limit)
 - Oil and Gas Units Operated by HAK
 - Oil and Gas Units - Other
 - Major Roads
- Hilcorp/Harvest
 - Glacier Oil and Gas
 - ENSTAR
 - Furie
 - Tesoro

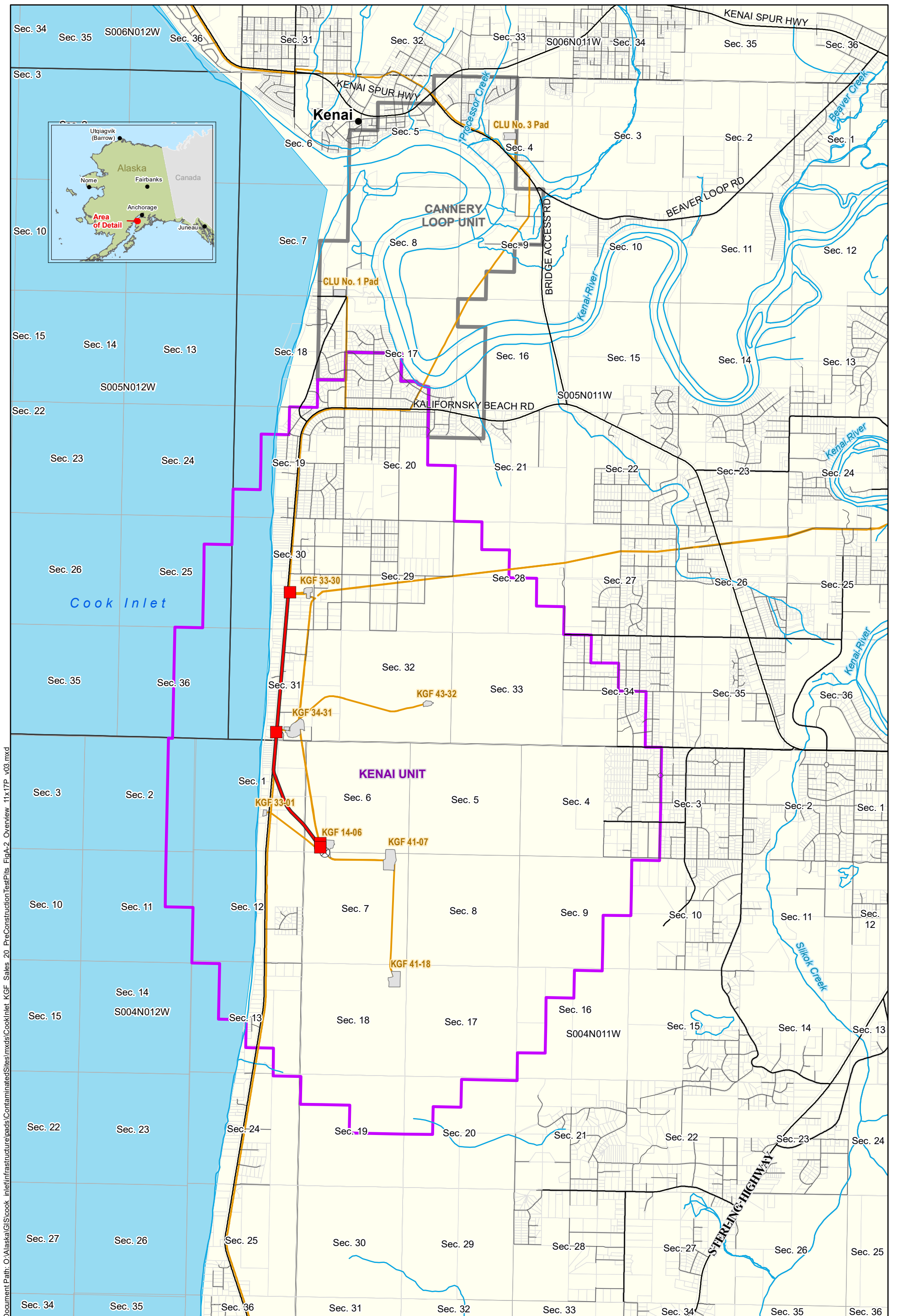
Alaska State Plane Zone 4 NAD 1983 (feet)



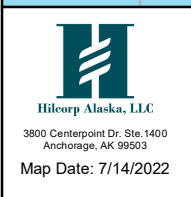
Date Prepared: 9/8/2020	Company Name: Hilcorp Alaska, LLC.	Drawn By: HAK - MRA
LOCATION AND VICINITY		
KENAI UNIT, COOK INLET, ALASKA		
Scale: @ 11x17 map size 1 in = 10 miles	Figure No: A-1	



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KENAI UNIT
KENAI GAS FIELD (KGF)
Pig Launcher Installation

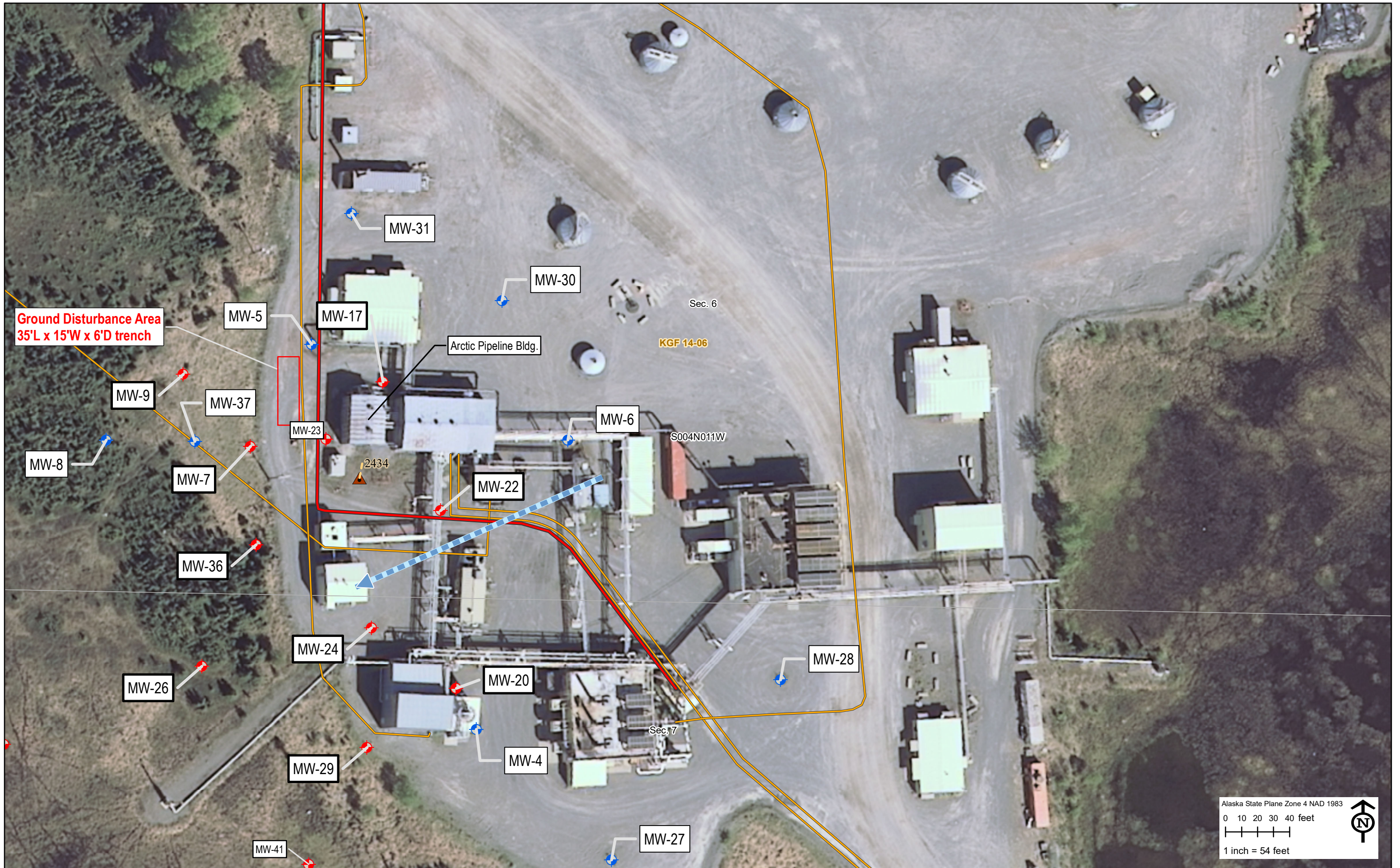
Legend

- Pig Launcher Construction Location
- 20" Pipeline
- Other Existing Pipelines
- KPB Parcels
- Oil and Gas Unit Boundaries

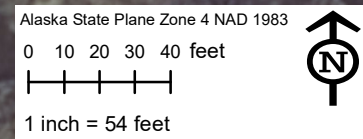
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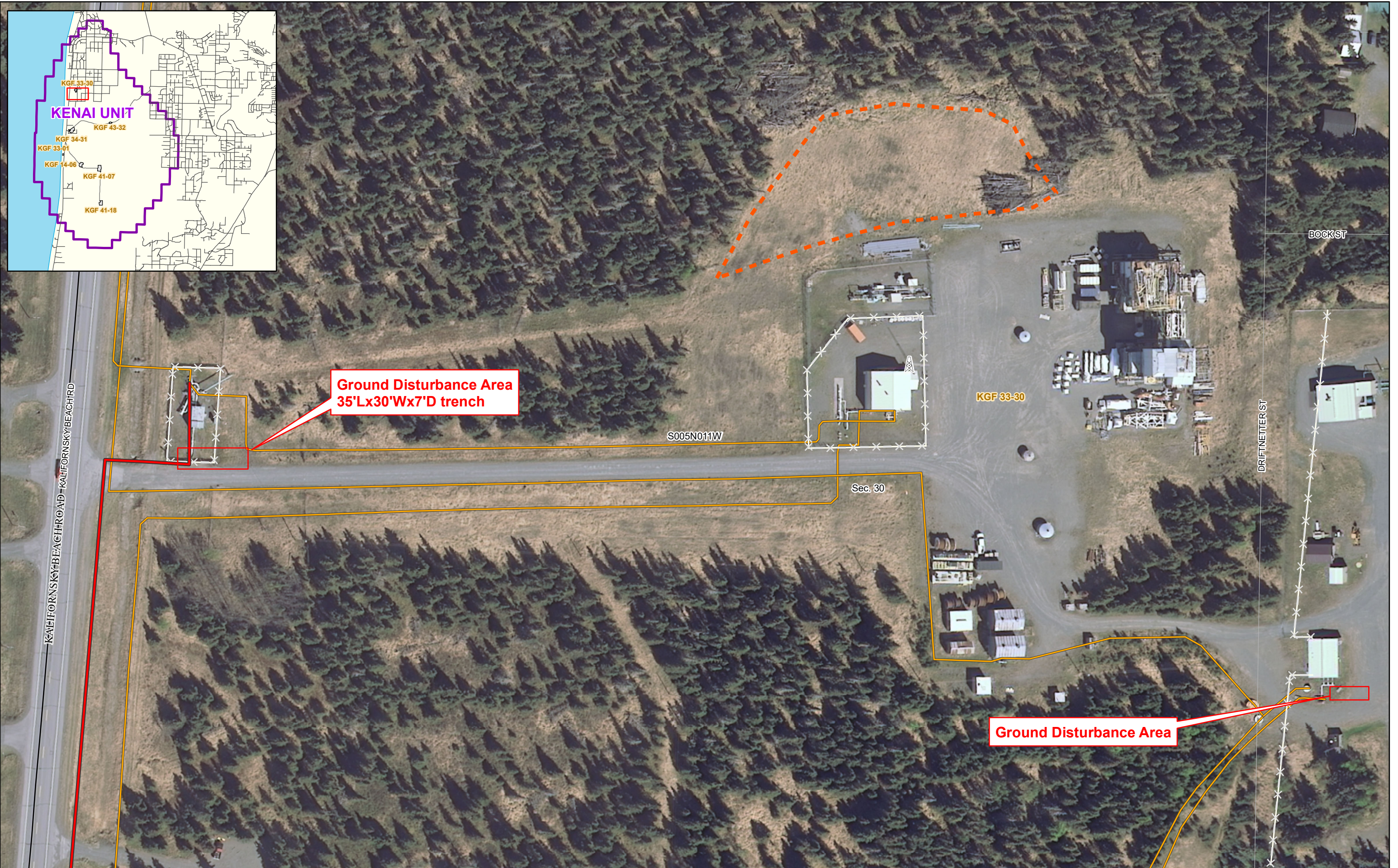
FIGURE:
A-2









Ground Disturbance Area
35'L x 15'W x 6'D trench





Legend

-  Groundwater Flow Direction
 Approx. (Brice 2019)
-  20" Pipeline
-  Other Pipelines
-  Historic Reserve Pit Area