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**Project  
105.00874.23017**

**No.:**

**RE: Soil Management Plan for Trench Excavations, Kenai Gas Field 41-7 and 41-18 Facilities**

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This Soil Management Plan (SMP) provides information to assist in the management of contaminated soil, if encountered, during trench excavation activities associated with the installation of electrical power lines at Hilcorp Alaska, LLC (Hilcorp), Kenai Gas Field (KGF) Pads 41-7 and 41-18. The pads are located approximately 7-miles to the southwest of Soldotna, Alaska (Figure 1).

Both pads are designated as active contaminated sites by the Alaska Department of Environmental Conservation (ADEC); KGF Pad 14-7 (Hazard Identification [ID]: 276 /File Number: 2320.38.032) and KGF Pad 41-18 (Hazard ID: 3189/File Number: 2320.38.033).

The primary objective of this SMP is to ensure that contaminated soil, if encountered during trench excavation activities, are managed to achieve the following:

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

Activities to meet this objective include the following:

- Field screen excavated soil to identify potential hydrocarbon contamination.
- Segregate potentially hydrocarbon contaminated soil from clean soil.
- Screen and sample potentially contaminated soil stockpiles for waste characterization consistent with ADEC Field Sampling Guidance, Table 2A (ADEC, 2022).
- Identify soil stockpiles requiring offsite transport, treatment and/or disposal.

## Field Activities

The following section describe the methods for trench excavation, soil stockpiling and segregation, waste characterization, and soil disposal.

## Trench Excavation

The trenches at both pads will be excavated using an air knife and Super Sucker (i.e., vacuum truck). Trenches will be excavated to a depth of between 18 inches and 24 inches below ground surface. At Pad 41-7, an approximate 200-foot segment of the trench will transect a former reserve pit (Figure 2, Orange Dashed Line). Although former reserve pit material is not anticipated to be encountered, an ADEC Qualified Environmental Professional (QEP) as defined in Title 18 of the Alaska Administrative

Code (AAC), Chapter 75, Section 333 (18 AAC 75.333) will be onsite during trenching. At Pad 41-18 the trench is not expected to cross any areas of known contamination (Figure 3). However, if the Field Environmental Specialist suspects contamination in the trench, the excavation will be halted, and the QEP will be called to the site. At both pads, the proposed excavation depths are above the known depth of the water table.

## Soil Stockpiling and Segregation

Once the Super Sucker tank is full, the soil will be dumped adjacent to the trench. Each dumped load will be designated as an individual soil stockpile and identified using the following nomenclature:

[Pad Number]- [Stockpile Number in Sequence]

For example, the stockpile with designation KGF41-7-SP1 indicates that the soil is from KGF Pad 41-7 and is the first stockpile generated along the trench. The next stockpile generated would be identified as KGF41-7-SP2. The Field Environmental Specialist or QEP will record in a field notebook the trench interval from which the stockpiled soil originated. The trench interval information will ensure that stockpiled soil deemed appropriate for backfilling will be returned to its original location.

Each stockpile will be screened for visual (e.g., presence of staining or free product) and/or olfactory (e.g., hydrocarbon odor) evidence of contamination. Stockpile free of contamination will be deemed acceptable for use as trench backfill. Soil exhibiting evidence of contamination will be segregated for additional screening and sampling for waste characterization and disposal.

## Additional Screening and Waste Characterization

Headspace soil samples will be collected from each stockpile segregated for additional screening and waste characterization. The onsite field technician and/or QEP will use a photoionization detector (PID) to perform headspace organic vapor screening on stockpiled soil. Headspace samples will be collected from each stockpile consistent with the procedure outlined in ADEC's Field Sampling Guidance (ADEC, 2022).

Stockpile screening locations will be marked with numbered pin flags. Each screening sample location will then be documented with a photograph and /or field sketch. The field screening sampling frequency will be determined based on Tables 2A in ADEC's Field Sampling Guidance (ADEC, 2022) as shown below.



Table 2A. Excavated Soil Sample Collection Guide<sup>1</sup>

By Volume (cubic yards)	Number of Screening Samples	Associated Number of Laboratory Samples
0-10	5	1
11-50	5	2
51-100	1 per 10 cy	3
More than 100	1 per 10 cy, or as the CSP determines necessary	3, plus 1 per each additional 200 cubic yards, or portion thereof, or as the CSP determines necessary

<sup>1</sup>The Table is appropriate for characterizing the levels of petroleum contamination in soil prior to requesting approval for, transport to a treatment or disposal facility, as required by 18 AAC 75.325(i). Consult with CSP for determining the appropriate numbers of field screening and laboratory soil samples for characterizing maximum petroleum concentrations in soil for on-site treatment.

Heated headspace samples will be collected, and total organic vapors analyzed as follows:

- Headspace screening samples will be collected from freshly uncovered soil using a clean stainless-steel spoon or scoop.
- Visual observation of staining and/or hydrocarbon odors will be noted.
- The samples will be collected from at least 6 inches below the soil surface to minimize the potential for volatilization of the sample prior to monitoring.

Soil for heated headspace measurement will be collected in a quart-sized zip lock bag. The soil will be allowed to warm to above ambient temperatures in the sun or on a vehicle dashboard for no less than 20 minutes and no more than 40 minutes. Once warmed the soil will be agitated by shaking bag. The total organic volatile measurement will be made by puncturing the bag with the PID intake port and recording the highest value.

For each individual stockpile, all visual and olfactory observations and PID measurements will be recorded in a field notebook. Results of headspace screening will inform waste characterization sampling. No soil samples will be collected for waste characterization if all PID readings from a stockpile are below 20 ppmV, and the QEP determines no sampling is needed based on field observations and professional judgement. Soil stockpiles not requiring waste characterization sampling will be deemed clean and suitable for trench backfill or reuse.

PID readings of 20 ppmV or higher will trigger the collection of one or more laboratory analytical samples. Analytical sample collection frequency will be determined by the QEP based on volume of soil in the stockpile consistent with ADEC’s Field Sampling Guidance, Table 2A provided above.

New disposable nitrile gloves will be donned before collecting samples. Grab soil samples for analytical testing will be collected from stockpiled soil approximately 6 inches below the surface as quickly as possible once exposed.

Soil samples will be collected using a clean stainless-steel scoop or disposable stainless-steel spoon. Soil samples will be placed in method appropriate laboratory-supplied sampling jars. Samples for volatile analyses will be placed into pre-tared containers with one volume (25 ml) of methanol. Labels will be placed on containers with unique sample identification code, as well as the date and time of sample collection.



Samples nomenclature will be as follows:

[Pad Number]- [Stockpile Number] – [Sequential Sample Number]

For example, the designation KGF41-7-SP1-01 would indicate that this is the first sample collected at stockpile 1 on KGS pad 41-7. If a second sample is needed from this stockpile it would be designated KGF41-7-SP1-02. For each stockpile sampled, the sequential sample number will start at 1.

Samples for waste characterization will be submitted to SGS Environmental Services Laboratory (SGS) in Anchorage, Alaska, an ADEC qualified analytical laboratory. Samples will be analyzed for the following:

- Gasoline Range Organics (GRO) by Method AK101;
- Diesel Range Organics (DRO)/Residual Range Organics (RRO) by Method AK102/103;
- Volatile Organic Compounds (VOCs) by Method SW8260; and
- Polynuclear Aromatic Hydrocarbon (PAH)-Selective Ion Method (SIM) by Method SW8270.

Field duplicate samples will be collected throughout the sampling period at a frequency of 10 percent of the total number of samples collected during the sampling event. To ensure complete laboratory blindness, duplicates will be given false sample names on the label and COC. Duplicate sample names will follow the same convention as primary sample names. Duplicate samples should not be given a name that corresponds to an existing well that is not sampled during this event. Duplicate sample identification will be documented in the field logbook, in connection with the primary sample identification.

A trip blank will accompany sample containers to be analyzed for volatile contaminants from the laboratory through sample collection and transported back to the analytical laboratory. The trip blank will not be opened during the sampling event and will be analyzed for volatile contaminants with the samples. The trip blank will be noted on the chain of custody (COC) for the relevant cooler.

Prior to the transfer of the samples to the laboratory, COC documentation will be completed for each sample and associated trip blank(s). Information on the sample container labels will be reviewed to verify the information is consistent with information on the COC form and in the field logbook. The COC form will be sealed in the sample cooler during transport to the laboratory. Each cooler will be sealed with a signed custody seal for shipment.

Waste characterization sample results will be compared to the most stringent ADEC Method Two soil cleanup levels for the under 40-inch precipitation zone will be applied as listed in 18 AAC 75.341, Tables B1 and B2 revised as of October 1, 2023 (ADEC, 2023). ADEC Method Two soil cleanup levels for constituents to be analyzed at the Site are provided below:

- GRO, 300 milligrams per kilogram (mg/kg);
- DRO, 250 mg/kg;
- RRO, 10,000 mg/kg;
- Benzene, 0.022 mg/kg;
- Toluene, 6.7 mg/kg;
- Ethylbenzene, 0.13 mg/kg;
- Xylenes, 1.5 mg/kg; and
- All other VOCs and PAHs are specified in Table B1).



## Soil Disposal

Soil stockpiles will remain on the pad pending waste characterization results. If all waste characterization target analyte concentrations are below cleanup level for an individual stockpile, then the soil will be deemed clean and suitable for reuse. Stockpiles with waste characterization target analyte concentrations exceeding applicable soil cleanup levels will require offsite transport, treatment and/or disposal.

Soil stockpiles will be staged adjacent to the trench or at a nearby lined and bermed staging area. Special precautions will be needed for saturated soil. If necessary, the lined staging area will be retrofitted with a sump to prevent pooling of water within the storage area and potential spills of contaminated water to the ground surface.

In the event that contaminated soil is placed directly onto the ground surface, the QEP will conduct field screening once the contaminated soil has been removed to verify that the native ground surface was not impacted. The sample frequency will follow specifications provided in Table 2B of the Field Sampling Guidance (ADEC, 2022). If all field screening samples have PID readings less than 20 ppmV and there are no other indications of potential contamination, the native soil will be considered clean, and no analytical samples will be collected. If the PID readings exceed 20 ppmV, analytical samples will be collected following the specifications provided in Table 2B of the Field Sampling Guidance (ADEC, 2022). Additional soil removal will be needed if the samples from the native soil have concentrations exceeding the ADEC cleanup levels.

Recommendations for transportation, treatment, and/or disposal will be submitted to ADEC for approval once analytical results have been received and reviewed.

## Documentation and Reporting

No documentation or reporting in association with this plan will occur unless contamination is encountered and analytical testing for waste characterization is required. When onsite, the project 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. Following 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 analytical data, field notes, waste tracking, and photograph log. An ADEC Laboratory Data Review Checklist and assurance report will be prepared for all analytical data used for site characterization purposes following ADEC Field Sampling Guidance (ADEC, 2022).

**Attachments:** Figure 1 – Stie Location Map

Figure 2 – Pad 41-7 Site Layout

Figure 3 – Pad 41-18 Site Layout



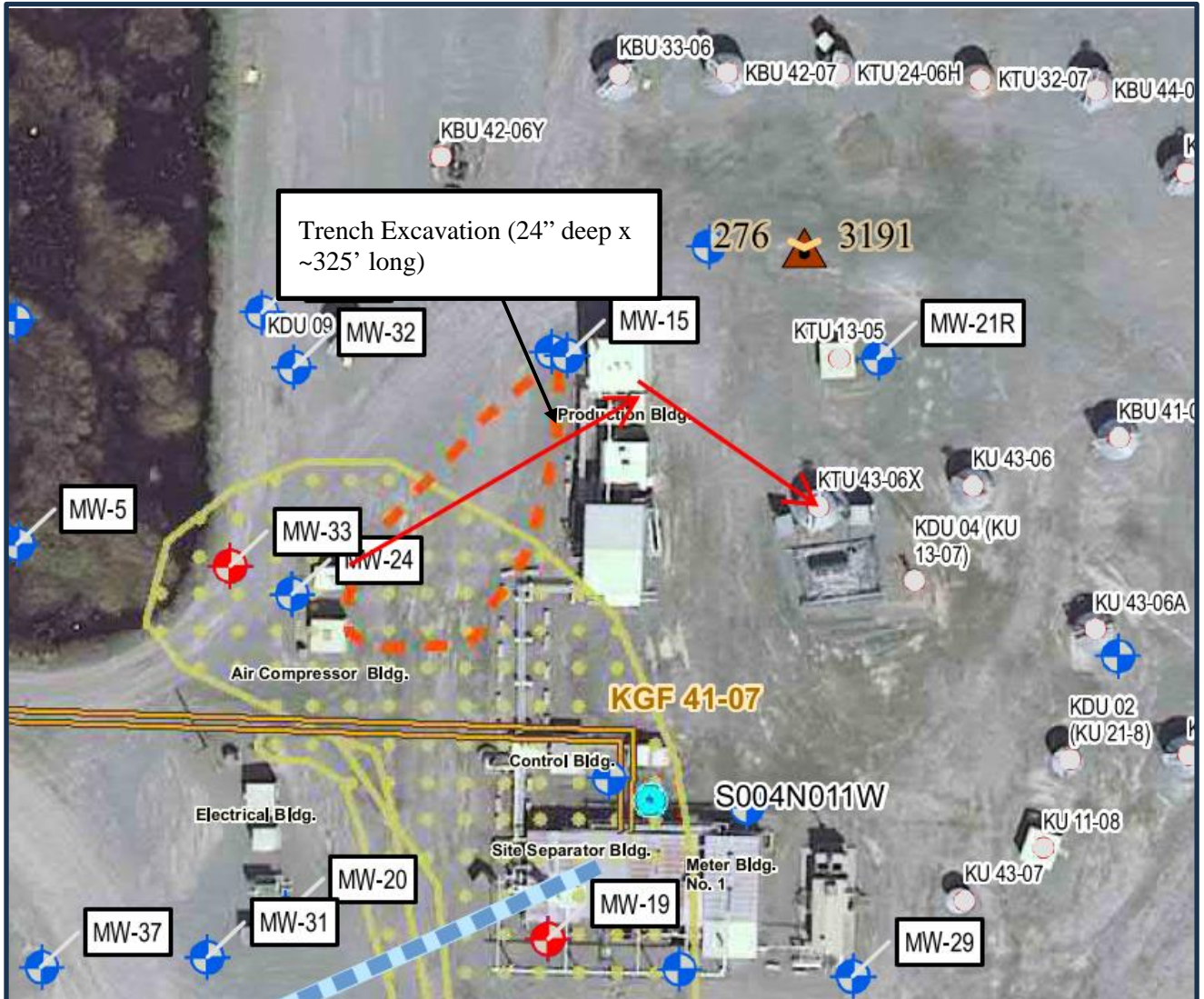




Soil Management Plan for Trench Excavations,  
Kenai Gas Field 41-7 and 41-18 Facilities

Figure 1

41-7 and 41-18 Facilities Location Map



Soil Management Plan for Trench Excavations,  
Kenai Gas Field 41-7 and 41-18 Facilities

Figure 2



41-7 Facility Site Map





Soil Management Plan for Trench Excavations,  
Kenai Gas Field 41-7 and 41-18 Facilities

Figure 3



41-18 Facility Site Map