ADEC FIELD INSPECTION CHECKLIST
Soil and Groundwater Samples

Site Name: E3-HOSPITAL LOOP, M4-POST POWERHOUSE-YAKUTAT	Inspector: RACHAEL PETRAEUS
Hazard ID: 26288, 26912	Date/Time: 8/05/2019 1200
ADEC File#: 1530.38.011	Weather: CLOUDY 63°F
ADEC PM: RACHAEL PETRAEUS	Consulting firm: BRICE ENGINEERING, LLC

Field supervisors/samplers DEC qualified: ☒ Yes ☐ No Name of samplers on site: KELLY CARSON, ERIK DAHL - NOT ON-SITE SHIPPING SAMPLES @ YAKUTAT AIRPORT

Site Inspection Objectives:

Identify the objective(s) or state other objective, if applicable.

- ☐ Meet with the project lead to discuss any issues and proposed deviations to the work plan.
- ☒ Observe groundwater and soil sampling procedures and validate conformance with the approved work plan.
- ☒ Confirm that actual sample locations match those presented in the work plan.
- ☐ Other specific area of inspection: SAMPLING LOCATIONS FOR UVOST, BOUNDARIES OF SUSPECTED CONTAMINATION

**Pertinent information collected during a field inspection i.e. videos, photos, or sample results, must be paced into the DEC site file.*

General Observations	Notes
Strong odors are evident in soil, groundwater, or air. Dead vegetation and/or other signs of stress are present.	- ACCESS TO SITE REQUIRED BRUSH CUTS AND BULLDOZER ACCESS ROADS.
Sampling Plan	**Notes**
A copy of the current DEC approved work plan is available onsite.	YES, COPY OF WORKPLAN IS ONSITE.
Samplers can demonstrate a good working knowledge of the plan.	YES.
Samplers understand how to handle and document deviations to the approved plan.	YES.
Field Screening	**Notes**
Instruments are calibrated onsite per the manufacturers' specifications.	YES INSTRUMENTS ARE CALIBRATED ON-SITE AND OR AT LODGE / HOME PRIOR TO WORK.
Instrument calibration and field screening activities are recorded in the field log book.	YES, INSTRUMENT CALIBRATION AND FIELD SCREENING RECORDED ON FORMS → WILL INCLUDE IN FINAL REPORT
Samplers demonstrate the correct use of instruments.	YES
List the types of instruments used.	UVOST-PROBE DAKOTA TECHNOLOGIES, INC, UVOST
A copy of the instrument operations manual is available on-site.	YES.
The DEC headspace methodology is used correctly for soils.	YES.
Field screening methodologies follow the approved work plan.	YES.
If test kits are used, specify type and parameter.	

Soil Sampling	Notes
Specify the type of sampling observed (i.e. soil boring/split spoon, test pit/excavator, direct push, stockpile, etc.)	NO SOIL SAMPLING WAS OBSERVED. - SOIL SAMPLING OCCURED EARLY ON IN THE PROJECT
Analytical samples are collected according to the approved work plan.	
Instruments and sampling equipment are calibrated onsite according to manufacturer's specifications.	
Equipment and instrument manuals are available onsite for reference.	
Samplers demonstrate proper use of the soils sampling equipment/instruments onsite.	
Samples are collected at the correct locations according to the work plan.	
Volatile samples are collected first and preserved.	
Samples are collected from freshly exposed soil.	
Field log book entries are recorded.	

Groundwater Sampling	Notes
Sample collection methods follow the approved work plan.	YES.
Instruments and sampling equipment are calibrated onsite each day according to manufacturer's specifications.	YES INSTRUMENTS ARE CALIBRATED ON-SITE AND OR AT LODGE / HOME PRIOR TO WORK.
Equipment and instrument manuals are available onsite for reference.	YES
Samplers demonstrate proper use of the GW sampling equipment/instruments onsite.	YES
Samples are collected at the correct locations according to the work plan.	YES
Elevations are surveyed and recorded.	YES, SURVEYING PRIOR TO SAMPLING WITH UVOST
Free product, if present, is properly bailed and containerized.	YES, IDW ON SITE WITH GAC
Wells are purged according to the approved work plan.	YES
Up-gradient wells are purged and sampled first.	MOST RECENTLY INSTALLED WELLS ARE SAMPLED FIRST. ORDER OF INSTALLATION
Volatiles are collected first and preserved.	YES
Measurement parameters and frequency are specified.	
Field log book entries are recorded.	FORMS ARE FILLED OUT AND RECORDED

Quality Control	Notes

QC samples are collected per DEC regulations/requirements.	YES
Samples are properly stored in a cooler with ice or ice packs.	YES, ENOUGH ICE-ON-SITE
Non-disposable sampling tools are decontaminated properly between sample locations.	YES
Unique identifying numbers are indicated on the containers.	YES
Sample containers are recorded on a chain of custody.	YES
Analytical Information	**Notes**
Lab submittal paperwork is clear and reflects the proper test methods specified in the work plan.	DID NOT OBSERVE
Handling of Investigative Derived Waste	**Notes**
IDW is handled according to the work plan.	YES - IDW WATER WILL BE VISUALLY INSPECTED FOR SHEEN AND ODORS PRIOR TO DISCHARGE.
Liners and top covers are used for temporary stockpiles and other waste.	-TRASH BAG USED FOR SOLID IDW.
Purge water is properly contained.	-YES, GAC ALSO ON-SITE
Field Documentation	**Notes**
The field notebook provides a thorough record of activities.	FORMS ARE USED
All field activities are recorded.	YES
Wrap-up	**Notes**
Do any of the observations have a significant effect on data usability or compromise data quality?	NO, NOT AT THIS TIME DID 5' STEPOUTS TO 25' FOR SAMPLING INCREMENTS UVOST.

NOTES: K.CARSON "OBSERVED SO FAR POWERHOUSE, HOSPITAL AND AST - AT THIS TIME THESE AREAS HAVE THE MOST OBSERVED CONTAMINATION AT HOSPITAL LOOP."

"THE UST SOIL BORINGS - SHOWED NOT EXTENSIVE CONTAMINATION."

K. CARSON " E. DAHL NOT HERE AT THE MOMENT DUE TO SENDING OFF SAMPLES AT THE AIRPORT"

"NO DEVIATION OCCURED AT THIS TIME."

UVOST - SAMPLING OCCURRED 8104, PRIOR TO ADEC SITE VISIT

CON/HTRW REMEDIAL INVESTIGATION WORK PLAN YAKUTAT AIR BASE FUDS
YAKUTAT, ALASKA

YAKUTAT AIR BASE FUDS OVERVIEW

DATE: 5/14/2019
PROJECT PM: JA
DRAWN: RD

FIGURE: 2

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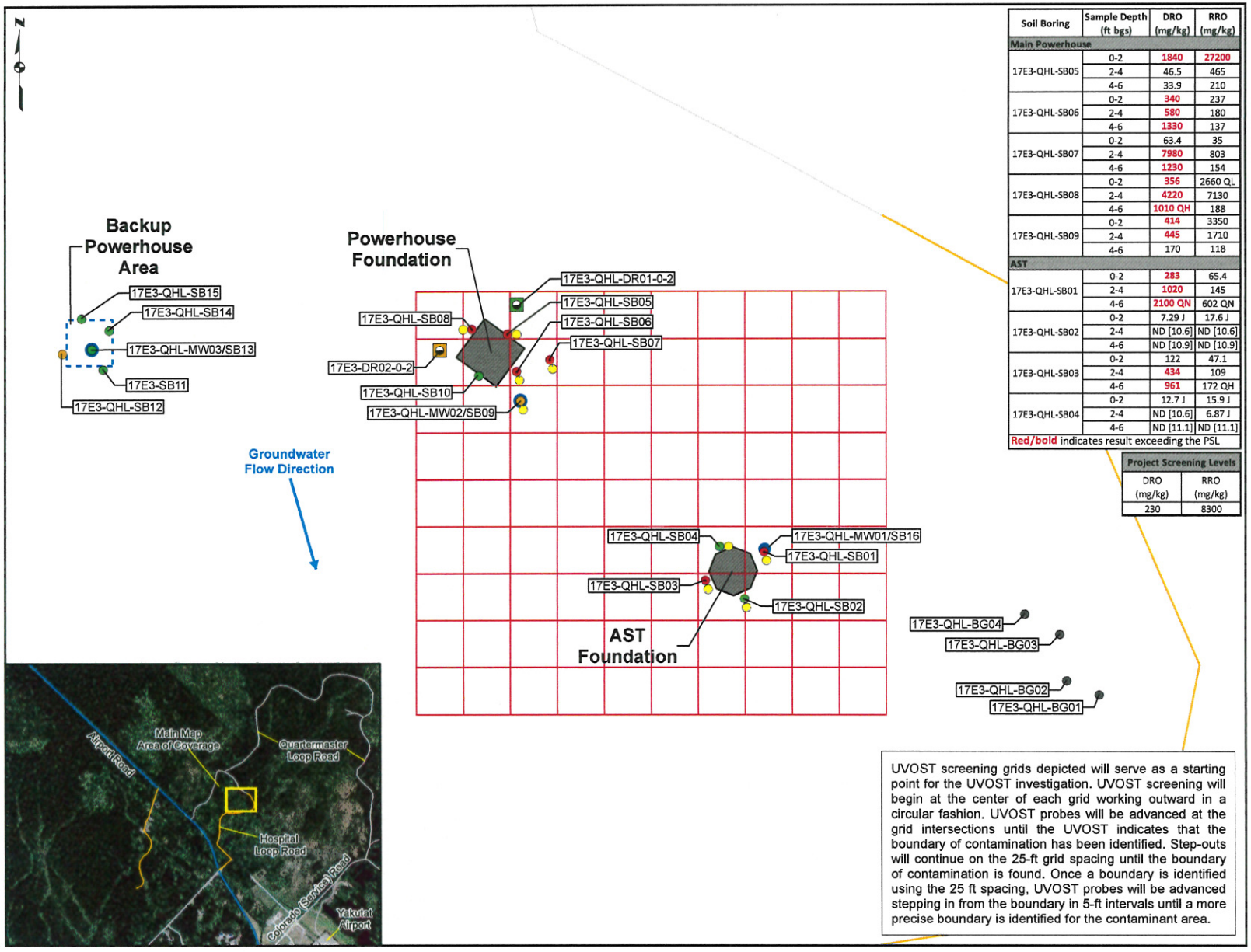

Soil Boring	Sample Depth (ft bgs)	DRO (mg/kg)	RRO (mg/kg)
Main Powerhouse			
17E3-QHL-SB05	0-2	**1840**	**27200**
	2-4	46.5	465
	4-6	33.9	210
17E3-QHL-SB06	0-2	**340**	237
	2-4	**580**	180
	4-6	**1330**	137
17E3-QHL-SB07	0-2	63.4	35
	2-4	**7980**	803
	4-6	**1230**	154
17E3-QHL-SB08	0-2	**356**	2660 QL
	2-4	**4220**	7130
	4-6	**1010 QH**	188
17E3-QHL-SB09	0-2	**414**	3350
	2-4	**445**	1710
	4-6	170	118
AST			
17E3-QHL-SB01	0-2	**283**	65.4
	2-4	**1020**	145
	4-6	**2100 QN**	602 QN
17E3-QHL-SB02	0-2	7.29 J	17.6 J
	2-4	ND [10.6]	ND [10.6]
	4-6	ND [10.9]	ND [10.9]
17E3-QHL-SB03	0-2	122	47.1
	2-4	**434**	109
	4-6	**961**	172 QH
17E3-QHL-SB04	0-2	12.7 J	15.9 J
	2-4	ND [10.6]	6.87 J
	4-6	ND [11.1]	ND [11.1]

Red/bold indicates result exceeding the PSL

Project Screening Levels	
DRO (mg/kg)	RRO (mg/kg)
230	8300

UVOST screening grids depicted will serve as a starting point for the UVOST investigation. UVOST screening will begin at the center of each grid working outward in a circular fashion. UVOST probes will be advanced at the grid intersections until the UVOST indicates that the boundary of contamination has been identified. Step-outs will continue on the 25-ft grid spacing until the boundary of contamination is found. Once a boundary is identified using the 25 ft spacing, UVOST probes will be advanced stepping in from the boundary in 5-ft intervals until a more precise boundary is identified for the contaminant area.

CON/HTRW REMEDIAL INVESTIGATION WORK PLAN

YAKUTAT AIR BASE FUDS
YAKUTAT, ALASKA

AOC E3 – HOSPITAL LOOP AREA PROPOSED SOIL SAMPLING ACTIVITIES

LEGEND:

- Soil Boring with All Results Below Most Stringent ADEC M2CL
- Soil Boring with Result Exceeding Most Stringent ADEC M2CL, but Below ADEC Method Three ACL
- Soil Boring with Result Exceeding Most Stringent ADEC M2CL and ADEC Method Three ACL
- TOC/Geotechnical Boring
- Surface Soil Sample with All Results Below Most Stringent ADEC M2CL
- Surface Soil Sample with Result Exceeding Most Stringent ADEC M2CL, but Below ADEC Method Three ACL
- Drum Location
- Monitoring Well
- Proposed UVOST Correlation Soil Boring
- Former Structures
- Concrete Remnants
- UVOST Screening Grid (25' x 25' Spacing)
- Other Roads
- Site Access Roads

Abbreviations:

ACL = alternative cleanup level
ADEC = Alaska Department of Environmental Conservation
AST = aboveground storage tank
DL = detection limit
DRO = diesel range organics
ft bgs = feet below ground surface
LOQ = limit of quantitation
mg/kg = milligrams per kilogram
MTGW = migration to groundwater
M2CL = Method Two Cleanup Level
N/A = not applicable
ND = not detected
O40_HH = ADEC Method Two human health cleanup Level, over 40 inch zone
RRO = residual range organics
TOC = total organic carbon
UVOST = ultraviolet optical screening tool

Chemistry Notes:

1. DRO and RRO exceedances are shown for select soil borings that will be used to determine a preliminary UVOST correlation. GRO results were non-detect and therefore not included.
2. Black/Bold indicates that the result exceeds the most stringent ADEC M2CL, but below ADEC Method Three ACL.
3. Red/Bold indicates that the result exceeds the most stringent ADEC M2CL and ADEC Method Three ACL.
4. Nondetect results are reported as ND with [ ] = limit of detection.
5. 17E3-QHL-SB16 sampled for EPH/VPH only. See Appendix G for complete results.

Chemistry Qualifiers:

1. J - Estimated value; result is greater than the DL and less than the LOQ.
2. QL - The result is considered an estimated value biased low due to a quality control failure.
3. QH - The result is considered an estimated value biased high due to a quality control failure.
4. QN - The result is considered an estimated value, biased uncertain, due to a quality control failure.

References:

1. Pléiades 1A image collected 6/9/2016 (PLÉIADES © CNES 2017).
2. Historical information derived from DPW Dwg. No. 43-834, Map of Naval Auxiliary Air Facility, Yakutat Alaska, showing conditions on 6/30/1943; F10AK0606–_01.04_0535_a.
3. Map produced using ESRI ArcMap v. 10.5.

UNIVERSAL TRANSVERSE MERCATOR PROJECTION ZONE 7
HORIZONTAL DATUM: WGS84 *VERTICAL DATUM: NAVD88*

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SCALE IN FEET

PROJECT No.:	DATE:	FIGURE:
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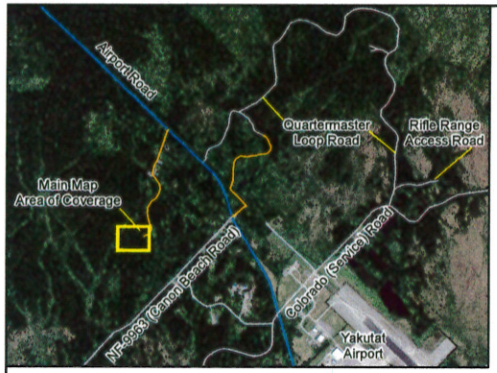
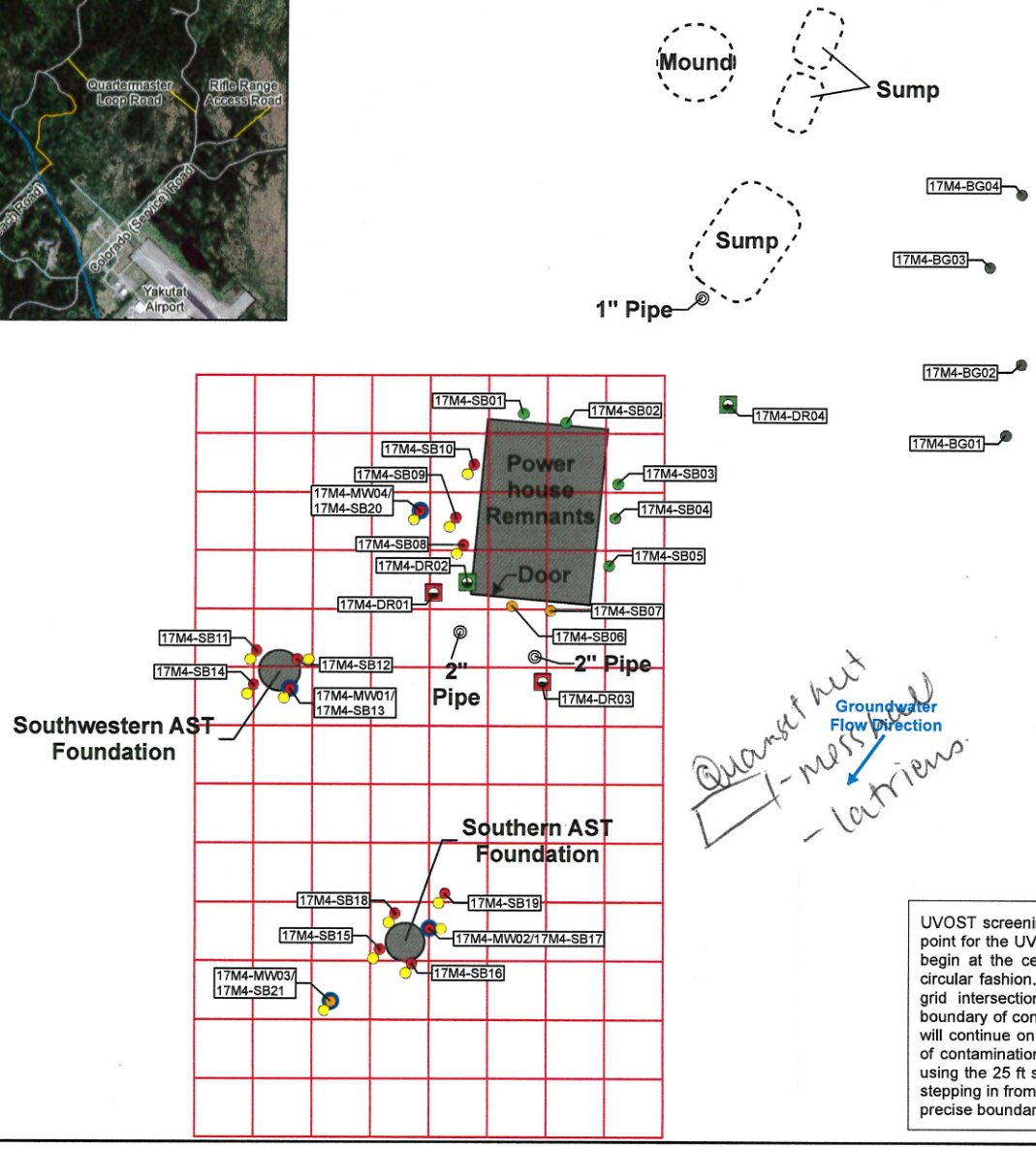
CON/HTRW REMEDIAL INVESTIGATION WORK PLAN

YAKUTAT AIR BASE FUDS
YAKUTAT, ALASKA

AOC M4 – AIR INCREASE GROUP NO. 1 – 400 KW POST POWERHOUSE – NO. 564 PROPOSED SOIL SAMPLING ACTIVITIES





Project Screening Levels	
DRO (mg/kg)	RRO (mg/kg)
230	8300

Soil Boring	Sample Depth (ft bgs)	DRO (mg/kg)	RRO (mg/kg)
Post Powerhouse			
17M4-SB08	0-2	12.9 J	48
	4-6	**2700**	246
	6-8	**2150**	147
17M4-SB09	0-2	9.61 J	22.1
	4-6	**1090**	90.7
	6-8	**2050**	108
17M4-SB10	0-2	195	381
	6-8	**1620**	120
	8-10	**355**	23.2
17M4-SB20	0-2	72.6	24.6
	4-6	**3530**	148
	6-8	**482**	35.3
Southwestern AST			
17M4-SB11	0-2	**476**	175
	4-6	**1170**	119
	6-8	10.8 J	ND [11.7]
17M4-SB12	0-2	**497**	157
	4-6	**1520**	199
	6-8	39.9	ND [11.1]
17M4-SB13	0-2	61.6	37.9
	4-6	**1610**	95.3
	6-8	**294**	24.3
17M4-SB14	0-2	**1290**	221
	4-6	**1240**	81 J
	6-8	**814**	46.8
Southern AST			
17M4-SB15	0-2	**1020**	242
	4-6	**2370**	221
	6-8	**1990**	143
17M4-SB16	0-2	77.6	21.7
	4-6	**2890 QH**	239
	6-8	**375**	32.9
17M4-SB17	0-2	41.2	34.2
	4-6	**1350**	128
	6-8	192	20.6 J
17M4-SB18	0-2	**562**	144
	4-6	**1140**	95.1
	6-8	**977**	63.8
17M4-SB19	0-2	55.6	85.3
	2-4	**3580**	243
	4-6	**1250**	93.4
17M4-SB21	4-6	**484**	41.2

Red/bold indicates result exceeding the PSL

UVOST screening grids depicted will serve as a starting point for the UVOST investigation. UVOST screening will begin at the center of each grid working outward in a circular fashion. UVOST probes will be advanced at the grid intersections until the UVOST indicates that the boundary of contamination has been identified. Step-outs will continue on the 25-ft grid spacing until the boundary of contamination is found. Once a boundary is identified using the 25 ft spacing, UVOST probes will be advanced stepping in from the boundary in 5-ft intervals until a more precise boundary is identified for the contaminant area.

LEGEND:

- Soil Boring with All Results Below Most Stringent ADEC M2CL
- Soil Boring with Result Exceeding Most Stringent ADEC M2CL, but Below ADEC Method Three ACL
- Soil Boring with Result Exceeding Most Stringent ADEC M2CL and Method Three ACL
- TOC/Geotechnical Boring
- Surface Soil Sample with All Results Below Most Stringent ADEC M2CL
- Surface Soil Sample with Result Exceeding Most Stringent ADEC M2CL and Method Three ACL
- Drum Location
- Monitoring Well
- Pipe Locations
- Proposed UVOST Correlation Soil Boring
- Concrete Remnants
- Site Features
- UVOST Screening Grid (25' x 25' Spacing)

Abbreviations:

ACL = alternative cleanup level
ADEC = Alaska Department of Environmental Conservation
DL = detection limit
DRO = diesel-range organics
ft bgs = feet below ground surface
LOQ = limit of quantitation
mg/kg = milligrams per kilogram
MTGW = migration to groundwater
M2CL = Method Two Cleanup Level
N/A = not applicable
ND = not detected
O40_HH = ADEC Method Two human health cleanup Level, over 40 inch zone
RRO = residual range organics
TOC = total organic carbon
UVOST = ultraviolet optical screening tool

Chemistry Notes:

1. DRO and RRO exceedances are shown for select soil borings that will be used to determine a preliminary UVOST correlation. GRO results were non-detect and therefore not included.
2. Black/Bold indicates that the result exceeds the most stringent ADEC M2CL.
3. Red/Bold indicates that the result exceeds the Method Three Proposed ACL and the M2CL.
4. Red/Bold and underlining indicates that the result exceeds the ADEC M2CL for human health.
5. Nondetect results are reported as ND with [ ] = limit of detection.

Chemistry Qualifiers:

1. J - Estimated value; result is greater than the DL and less than the LOQ.
2. QH - The result is considered an estimated value, bias high, due to a quality control failure.

References:

1. Pléiades 1A image collected 6/9/2016 (PLÉIADES © CNES 2017).
2. Historical information derived from U.S. Army Corps of Engineers, Alaska District. Final Supplemental Remedial Investigation Report: Former Yakutat Air Base, Formerly Used Defense Site (F10AK060602), Yakutat, Alaska; 4/2016.
3. Map produced using ESRI ArcMap v. 10.5.

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