



THE STATE  
of **ALASKA**  
GOVERNOR BILL WALKER

**Department of Environmental  
Conservation**

DIVISION OF SPILL PREVENTION AND RESPONSE  
Contaminated Sites Program

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File No: 2215.38.001

May 14, 2015

Aemon Wetmore  
FAA Alaska Region  
222 West 7<sup>th</sup> Ave., #14  
Anchorage, AK 99513-7587

Re: Summary of Determinations: FAA - Cordova - Former Vehicle Fuel Pump Area – Living Quarters  
USTs 35-F-2, 35-F-3, and 35-F-4

Dear Mr. Wetmore:

The Alaska Department of Environmental Conservation (DEC) has reviewed the environmental records for three former underground storage tanks (USTs), designated 35-F-2, 35-F-3 and 35-F-4, located in the Living Quarters area of the Cordova FAA Station adjacent to the Former Vehicle Pump Area. This decision letter memorializes the site history, cleanup actions, and standard conditions for long-term site management. No further remedial action is required.

**Site Name and Location:**

FAA - Cordova - Former Vehicle Fuel Pump Area  
Living Quarters USTs  
Cordova Airport  
Cordova, AK 99574

**Name and Mailing Address of Contact Party:**

Aemon Wetmore  
FAA Alaska Region  
222 West 7<sup>th</sup> Ave., #14  
Anchorage, AK 99513-7587

**DEC Site Identifiers:**

File No: 2215.38.001  
Hazard ID: 24925

**Regulatory Authority for Determination:**

18 AAC 75 & 18 AAC 78

### Site Descriptions and Background

Three areas of concern (AOCs) are addressed in this document:

1. UST 35-F-2
2. UST 35-F-3
3. UST 35-F-4

Site descriptions and background information for each of each of these AOCs are below.

UST 35-F-2 was an unregulated, steel, single wall, 850 gallon capacity, heating oil (diesel) UST located near the southeast corner of living quarters Building 107. 35-F-2 was installed in 1962, and was removed in September, 1994. Contamination was detected using visual observation, odor, and screening at the bottom of the excavation.

UST 35-F-3 was an unregulated, steel, single wall, 500 gallon capacity, heating oil (diesel) UST located near the northeast corner of living quarters Building 102. 35-F-3 was installed in 1962, and was removed in September, 1994. Contamination was detected using visual observation, odor, and screening at the bottom of the excavation.

UST 35-F-4 was an unregulated, steel, single wall, 500 gallon capacity, heating oil (diesel) UST located near the northeast corner of Living Quarters Building 101. 35-F-4 was installed in 1962, and was removed in September, 1994. Contamination was detected using visual observation, odor, and screening at the bottom of the excavation.

### Geology and Hydrogeology

The FAA Cordova Station is located on a glacial outwash plain. Subsurface soil is derived from alluvial and glacial outwash, and consists of stratified layers of gravel, sand, and silt. Groundwater occurs at a depth of 3 to 15 feet and within bedrock at approximately 130 feet below ground surface. Groundwater flow is interpreted to be to the southeast. Cordova averages 91 inches of precipitation per year.

### Contaminants of Concern

The following contaminants of concern were identified during the course of the site investigations summarized in the Characterization and Cleanup Activities sections in this decision letter. This list covers all of the COCs that have been detected above Method 2 cleanup levels at the three AOCs, or are associated with those contaminants detected above cleanup levels.

- Gasoline Range Organics (GRO)
- Diesel Range Organics (DRO)
- Residual Range Organics (RRO)
- Benzene
- Toluene
- Ethylbenzene
- Xylenes

### Cleanup Levels

For AOCs that have been evaluated under 18 AAC 75.340 Method Two, the applicable soil cleanup levels are those in the “Over 40 Inch Zone” under the “Direct Contact”, “Outdoor Inhalation”, “Ingestion”, “Inhalation”, and “Migration to Groundwater” columns of Tables B1 and B2 in 18

AAC 75.341. The “Over 40 Inch Zone” refers to the number of inches of rainwater the area receives each year. The applicable groundwater cleanup levels are those in 18 AAC 75.345 Table C. In addition to the COCs listed below, per 18 AAC 75.340(k), for a cleanup conducted under methods two and three, any chemical that is detected at one-tenth or more of the Table B1 direct contact and inhalation cleanup levels must be included when calculating cumulative risk.

**Table 1. Cordova FAA Station Method 2 Soil and Groundwater Cleanup Levels**

Contaminants	Method 2 Above 40 Inch Zone Cleanup Levels (mg/kg)						Groundwater Cleanup Levels (mg/L)
	Migration to Groundwater	Ingestion	Inhalation	Direct Contact	Outdoor Inhalation	Maximum Allowable Concentrations	
Gasoline Range Organics (GRO)	260	1400	1400	-	-	1400	2.2
Diesel Range Organics (DRO)	230	8250	12,500	-	-	12,500	1.5
Residual Range Organics (RRO)	9,700	8,300	22,000	-	-	22,000	1.1
Benzene	0.025	-	-	120	8.5	-	0.005
Toluene	6.5	-	-	6600	220	-	1
Ethylbenzene	6.9	-	-	8300	81	-	0.7
Xylenes	63	-	-	16600	63	-	10

mg/kg – milligrams per kilogram

mg/L – milligrams per liter

### Characterization and Cleanup Activities

Characterization and cleanup activities conducted under the regulatory authority of the Contaminated Sites Program began in 1994. These activities are described below.

USTs 35-F-2, 35-F-3, and 35-F-4, all located in the Cordova FAA Station Living Quarters, were removed in 1994. During removal, contamination was observed under each UST. Once contamination was observed, it was immediately excavated until the available screening methods (PID, OVM, oil content analyzer, odors, and visual observation) no longer indicated contamination. At all three excavations, groundwater was encountered, though no sheen was observed in the groundwater.

At UST 35-F-2, approximately 16 cubic yards of potentially contaminated soil was removed from the excavation and stockpiled following the UST decommissioning. Groundwater was encountered at approximately 6 feet bgs. Five soil samples were taken at the bottom and sidewalls of the excavation and analyzed for DRO (EPA 8100M). All sample results were below the practical quantitation limit. Two samples were also collected from the potentially contaminated excavated soil. These samples had DRO concentrations of 110 and 58 mg/kg, both below the DEC migration to groundwater cleanup level.

At UST 35-F-3, approximately 13 cubic yards of potentially contaminated soil was removed from the excavation and stockpiled following the UST decommissioning. Groundwater was encountered at approximately 4 feet bgs. Five soil samples were taken at the bottom and sidewalls of the excavation and analyzed for DRO (EPA 8100M). All sample results were below 100 mg/kg DRO. Two samples were also collected from the potentially contaminated excavated soil. These samples had DRO concentrations of 100 and 170 mg/kg, both below the DEC migration to groundwater cleanup level.

At UST 35-F-4, approximately 13 cubic yards of potentially contaminated soil was removed from the excavation and stockpiled following the UST decommissioning. Groundwater was encountered at approximately 4 feet bgs. Five soil samples were taken at the bottom and sidewalls of the excavation and analyzed for DRO (EPA 8100M). All sample results were below 100 mg/kg DRO. Two samples were also collected from the potentially contaminated excavated soil. These samples had DRO concentrations of 70 and 54 mg/kg, both below the DEC migration to groundwater cleanup level.

### Cumulative Risk Evaluation

Pursuant to 18 AAC 75.325(g), when detectable contamination remains on-site following a cleanup, a cumulative risk determination must be made that the risk from hazardous substances does not exceed a cumulative carcinogenic risk standard of 1 in 100,000 across all exposure pathways and does not exceed a cumulative noncarcinogenic risk standard at a hazard index of one across all exposure pathways. DRO, GRO, and RRO are not evaluated in this calculator.

There were no compounds exceeding 1/10 of the DEC direct contact and inhalation cleanup levels at the three UST sites following remediation efforts. Therefore, based on a review of the environmental record, DEC has determined that residual contaminant concentrations do not pose a cumulative human health risk at these sites.

### Exposure Pathway Evaluation

Following investigation and cleanup at the site, exposure to the remaining contaminants was evaluated using DEC's Exposure Tracking Model (ETM). Exposure pathways are the conduits by which contamination may reach human or ecological receptors. ETM results show all pathways to be one of the following: De-Minimis Exposure, Exposure Controlled, or Pathway Incomplete. A summary of this pathway evaluation is included in Table 2.

**Table 2 – Exposure Pathway Evaluation – Cordova Living Quarters USTs**

Pathway	Result	Explanation
Surface Soil Contact	Pathway Incomplete	Contamination in surface soil was not encountered.
Sub-Surface Soil Contact	De-Minimis Exposure	Contamination remains in the sub-surface, but is below ingestion cleanup levels.
Inhalation – Outdoor Air	De-Minimis Exposure	Contamination remains in the sub-surface, but is below inhalation cleanup levels.
Inhalation – Indoor Air (vapor intrusion)	De-Minimis Exposure	Contamination remains in the sub-surface, but is below levels that would warrant a vapor intrusion concern.
Groundwater Ingestion	Pathway Incomplete	Groundwater contamination is not present.

Surface Water Ingestion	Pathway Incomplete	Surface water is not present at the site, and the contamination is not present at concentrations high enough to migrate to surface water.
Wild and Farmed Foods Ingestion	Pathway Incomplete	Contaminants of concern do not have the potential to bioaccumulate in plants or animals.
Exposure to Ecological Receptors	Pathway Incomplete	Ecological receptors are unlikely to contact the remaining de-minimis concentration in the airport area in the subsurface soil.

**Notes to Table 2:** “De-Minimis Exposure” means that in ADEC’s judgment receptors are unlikely to be affected by the minimal volume or concentration of remaining contamination. “Pathway Incomplete” means that in ADEC’s judgment contamination has no potential to contact receptors. “Exposure Controlled” means there is an administrative mechanism in place limiting land or groundwater use, or a physical barrier in place that deters contact with residual contamination.

### ADEC Decision

USTs 35-F-2, 35-F-3, and 35-F-4 were all decommissioned in 1994. At the time, field screening indicated that contamination was present in the excavations at each of these sites. The contaminated soil was subsequently excavated, and analytical sampling at the bottom of the excavations confirmed that for all three USTs, all of the contamination had been removed to concentrations below all applicable DEC cleanup levels. Therefore, these sites will receive a “Cleanup Complete” designation on the Contaminated Sites Database, subject to the following standard conditions listed below.

### Standard Conditions

1. Any proposal to transport soil or groundwater off-site requires DEC approval in accordance with 18 AAC 75.325. A “site” [as defined by 18 AAC 75.990 (115)] means an area that is contaminated, including areas contaminated by the migration of hazardous substances from a source area, regardless of property ownership.
2. Movement or use of contaminated material in a manner that results in a violation of 18 AAC 70 water quality standards is prohibited.

These determinations are in accordance with 18 AAC 75.380 and do not preclude DEC from requiring additional assessment and/or cleanup action if future information indicates that these sites may pose an unacceptable risk to human health or the environment.

### Appeal

Any person who disagrees with these decisions may request an adjudicatory hearing in accordance with 18 AAC 15.195 – 18 AAC 15.340 or an informal review by the Division Director in accordance with 18 AAC 15.185. Informal review requests must be delivered to the Division Director, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99811-1800, within 15 days after receiving the department’s decision reviewable under this section. Adjudicatory hearing requests must be delivered to the Commissioner of the Department of Environmental Conservation, 410 Willoughby Avenue, Suite 303, Juneau, Alaska 99811-1800, within 30 days after the date of issuance of this letter, or within 30 days after the department issues a final decision under 18 AAC 15.185. If a hearing is not requested within 30 days, the right to appeal is waived.

If you have any questions, please do not hesitate to contact me at (907) 451-2131, or by email at [monte.garroutte@alaska.gov](mailto:monte.garroutte@alaska.gov).

Sincerely,

Recommended By



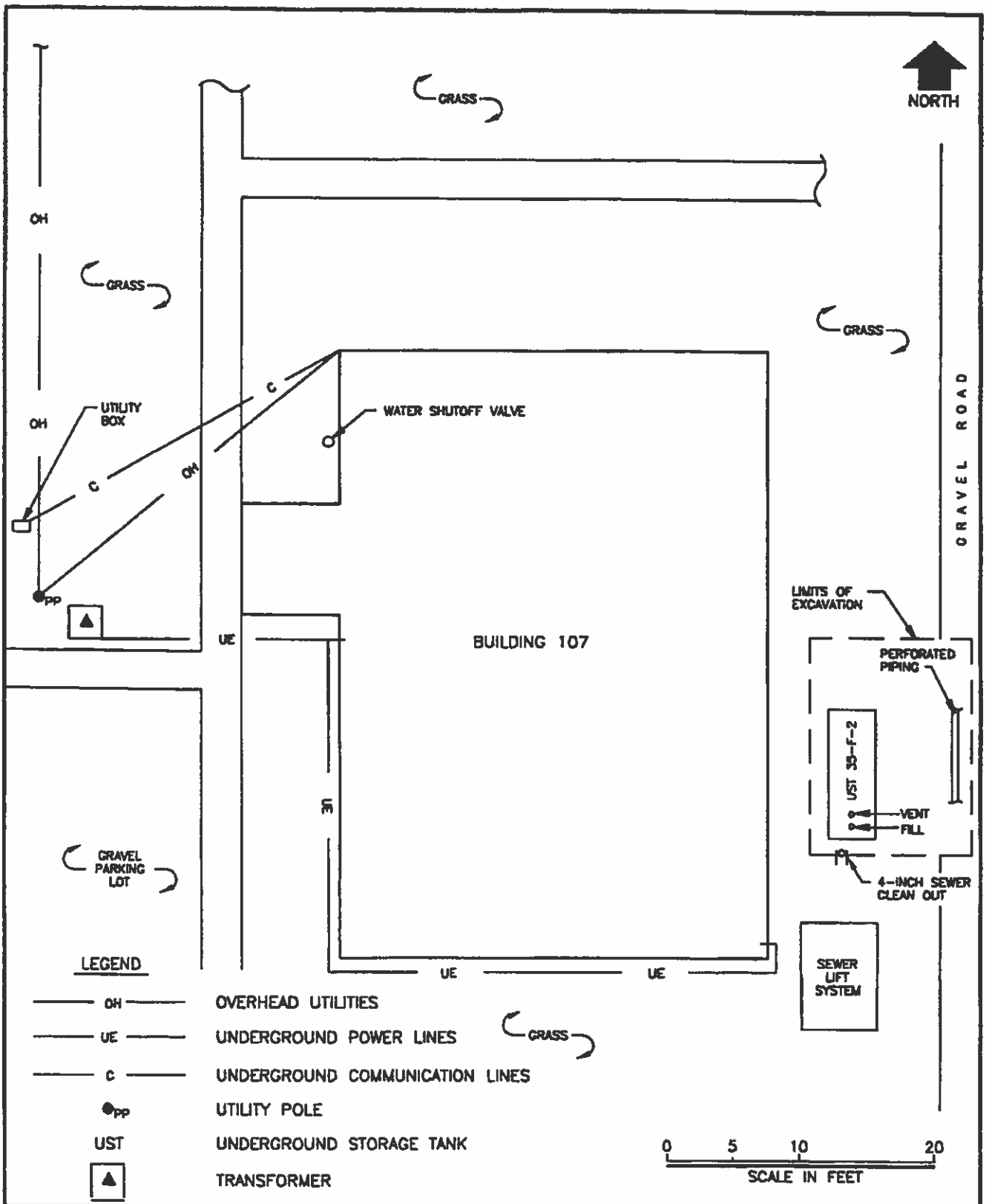
Monte Garroutte  
Environmental Program Specialist

Approved By



Fred Vreeman  
Project Manager

Enclosure: Site Figures and Analytical Results



**HARDING LAWSON ASSOCIATES**  
Engineering and Environmental Services

**UST 35-F-2 Location Map**  
**UST Decommissioning Assessment**  
Cordova FST Improvements  
Cordova, Alaska

FIGURE  
**2**

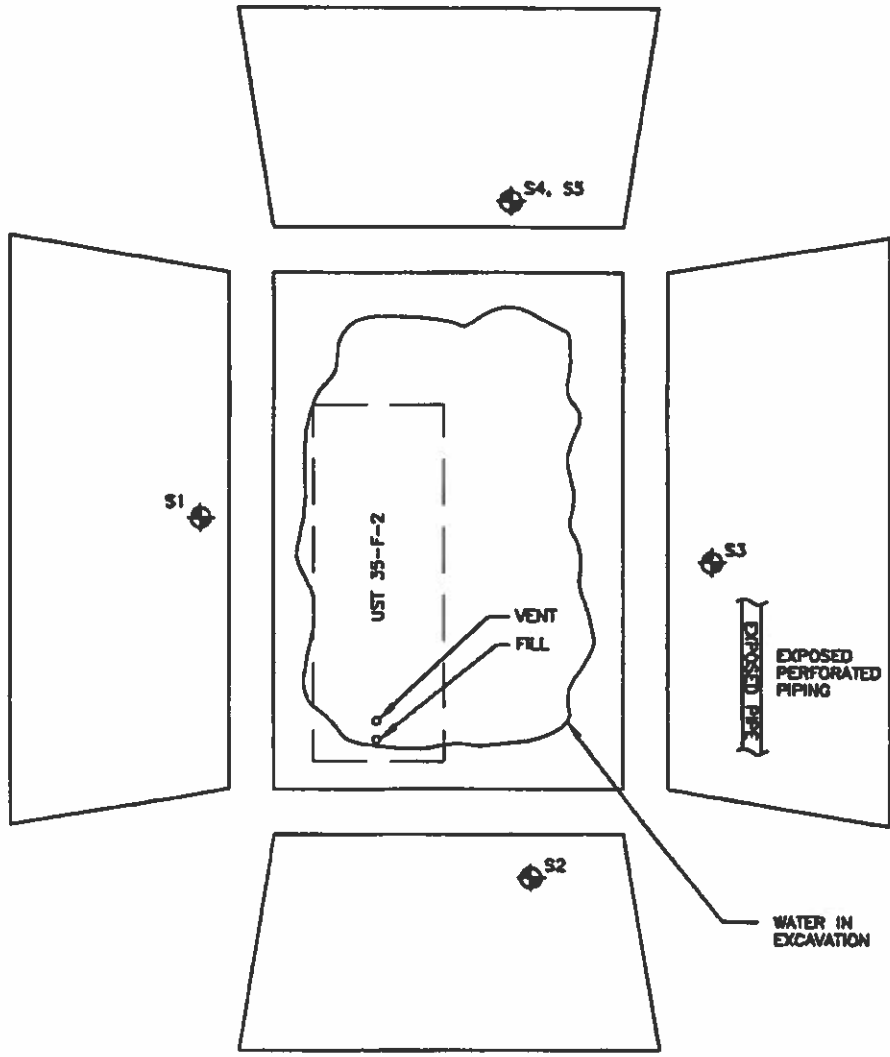
DRAWN  
DC

PROJECT NUMBER  
29625

APPROVED  
FP

DATE  
10/94

FILE NAME  
425d



**EXPLODED VIEW OF EXCAVATION**

SOIL SAMPLE NUMBER	DEPTH (feet bgs)	DESCRIPTION	DRO (mg/kg)
35-F-2-S1	5	SANDY SILT	ND(13)
35-F-2-S2	5	GRAVELLY SAND	ND(11)
35-F-2-S3	5	SANDY SILT	ND(13)
35-F-2-S4	5	SANDY SILT	ND(13)
35-F-2-S5	5	SANDY SILT	ND(13)
ADEC SITE CLEANUP LEVEL ESTIMATE	NA	SOIL	100

LEGEND	
	SOIL SAMPLING LOCATION AND NUMBER
	TANK LOCATION
UST	UNDERGROUND STORAGE TANK

ADEC ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
 NA NOT APPLICABLE  
 ND(25) NOT DETECTED AT OR ABOVE THE METHOD REPORTING LIMIT SHOWN IN PARENTHESES  
 DRO DIESEL-RANGE ORGANICS  
 bgs BELOW GROUND SURFACE  
 mg/kg MILLIGRAMS PER KILOGRAM



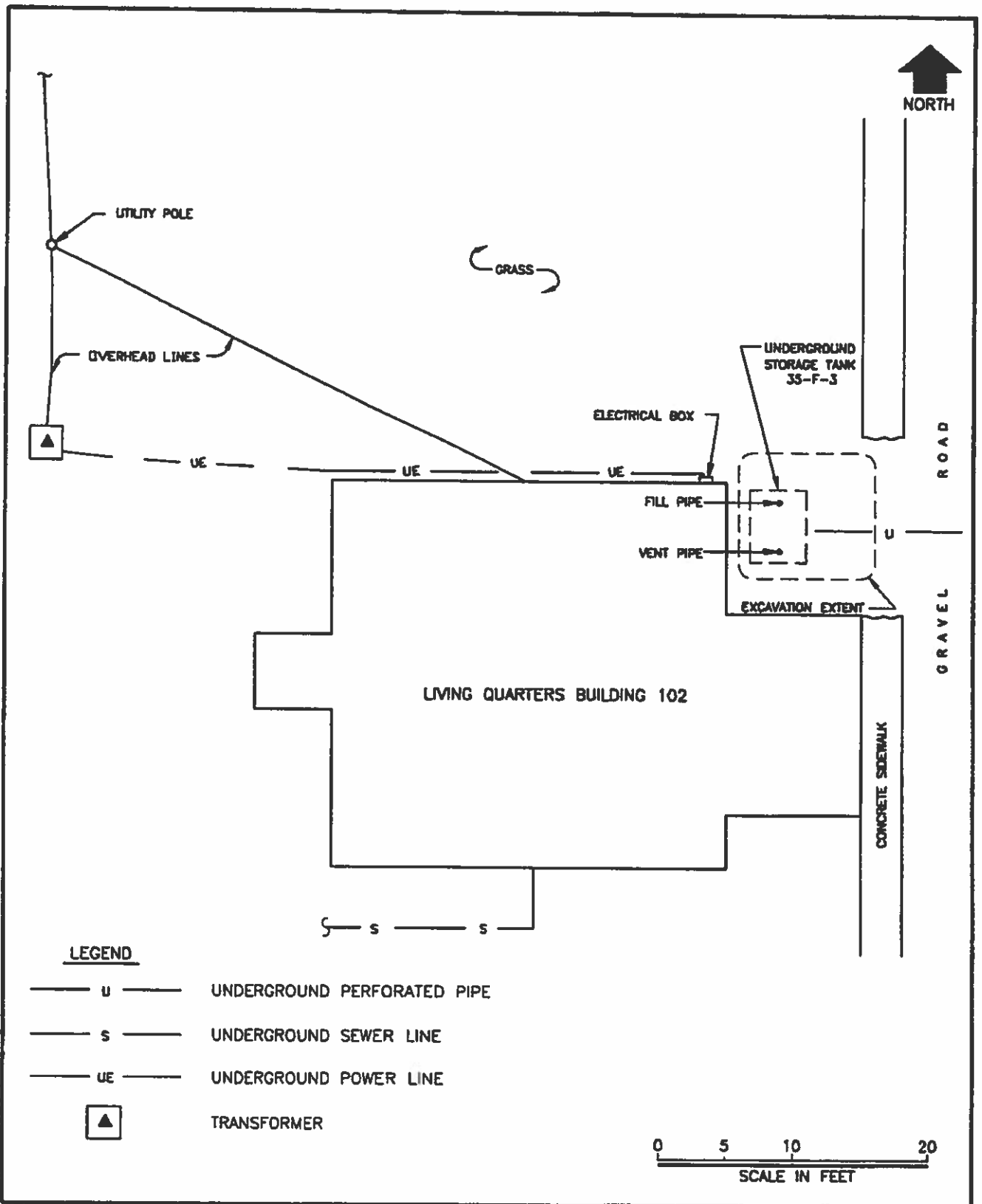
**HARDING LAWSON ASSOCIATES**  
 Engineering and Environmental Services

**UST 35-F-2 Laboratory Analytical Results** FIGURE  
**UST Decommissioning Assessment**  
 Cordova FST Improvements  
 Cordova, Alaska

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**LEGEND**

- u — UNDERGROUND PERFORATED PIPE
- s — UNDERGROUND SEWER LINE
- UE — UNDERGROUND POWER LINE
- ▲ TRANSFORMER

0 5 10 20  
SCALE IN FEET



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Environmental Services

**UST 35-F-3 Living Quarters Building 102 Site Map** FIGURE  
**UST Decommissioning Assessment**  
Cordova FST Improvements  
Cordova, Alaska **2**

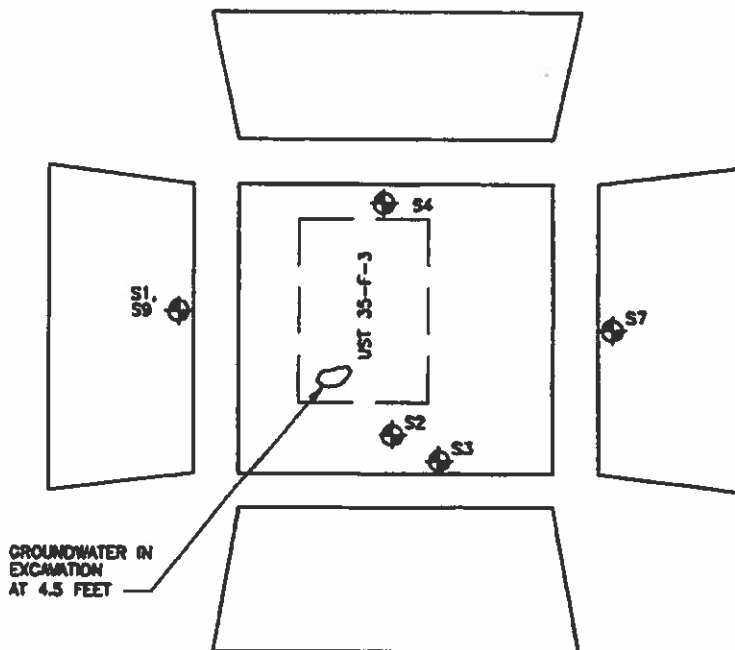
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29625

APPROVED  
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DATE  
10/94




FILE NAME  
426d



**EXPLODED VIEW OF EXCAVATION**

SOIL SAMPLE NUMBER	DEPTH (feet bgs)	DESCRIPTION	DRO (mg/kg)
35-F-3-S1	4.0'	SILTY SAND	69
35-F-3-S2	4.0'	SILTY SAND	87
35-F-3-S3	4.0'	SILTY SAND	50
35-F-3-S4	3.5'	SILTY SANDY GRAVEL	17
35-F-3-S7	3.5'	SILT	ND(13)
35-F-3-S9	4.0'	SILTY SAND	66
ADEC SITE CLEANUP LEVEL ESTIMATE	NA	SOIL	100

**LEGEND**

-  SOIL SAMPLING LOCATION AND NUMBER
-  TANK LOCATION
-  UST UNDERGROUND STORAGE TANK

NA NOT APPLICABLE  
 ND NOT DETECTED AT OR ABOVE THE METHOD REPORTING LIMIT IN PARENTHESES  
 ADEC ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION  
 DRO DIESEL-RANGE ORGANICS  
 bgs BELCW GROUND SURFACE  
 mg/kg MILLIGRAMS PER KILOGRAM



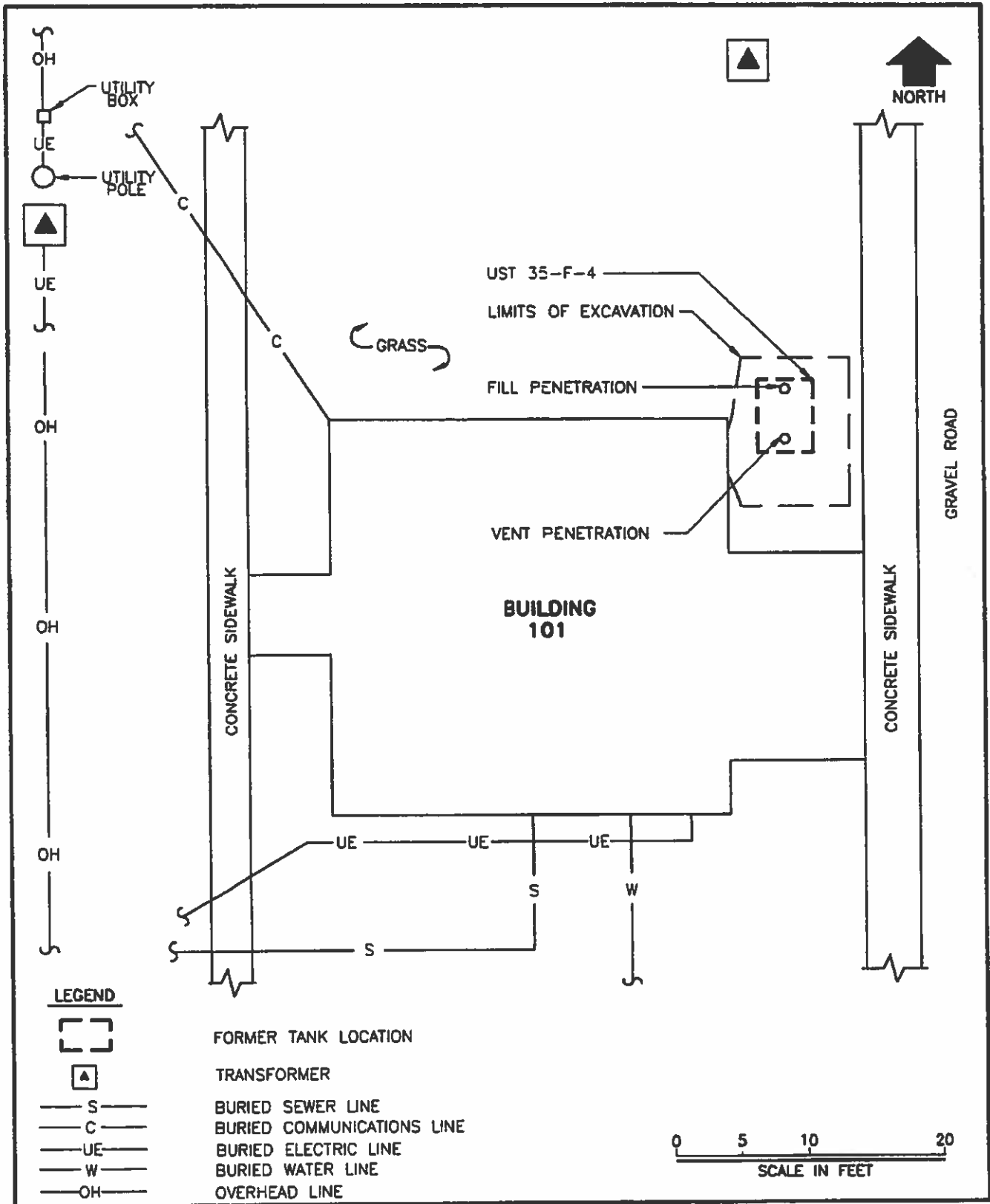
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 Engineering and Environmental Services

**UST 35-F-3 Laboratory Analytical Results**  
 UST Decommissioning Assessment  
 Cordova FST Improvements  
 Cordova, Alaska

FIGURE

**5**

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 Environmental Services

**35-F-4 Site Plan**  
**UST Decommissioning Assessment**  
 Cordova FST Improvements  
 Cordova, Alaska

FIGURE

**2**

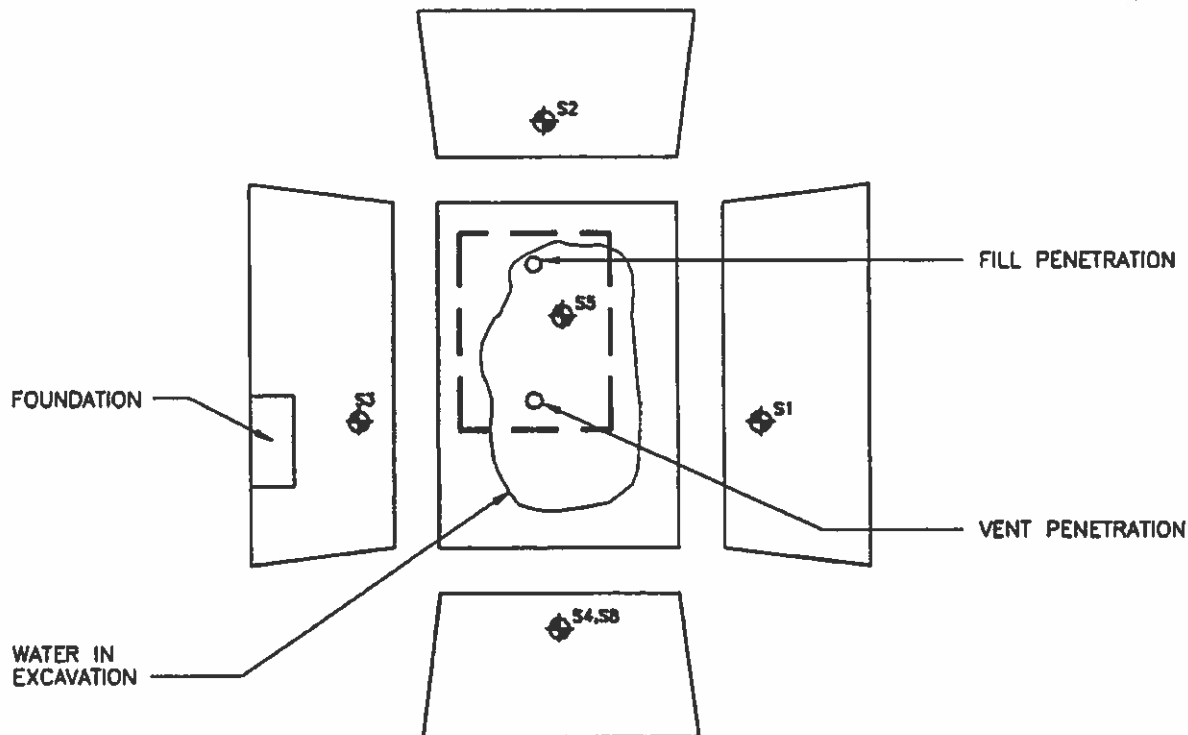
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 BJ

PROJECT NUMBER  
 29625

APPROVED

DATE  
 10/94

FILE NAME  
 112b



**EXPLODED VIEW OF EXCAVATION**

SOIL SAMPLE NUMBER	DEPTH (feet bgs)	DESCRIPTION	DRO (mg/kg)	LEGEND
35-F-4-S1	3.5	SANDY SILT	34	S1 SOIL SAMPLING LOCATION AND NUMBER
35-F-4-S2	3.5	SAND	46	
35-F-4-S3	3.5	SANDY SILT	ND(13)	
35-F-4-S4	3.5	SILTY SAND	66	
35-F-4-S5	3.5	SILTY SAND	ND(11)	
35-F-4-S8	3.5	SILTY SAND	31	
ADEC SITE CLEANUP LEVEL ESTIMATE	NA	SOIL	100	FORMER TANK LOCATION

ADEC	ALASKA DEPARTMENT OF ENVIRONMENTAL CONSERVATION
NA	NOT APPLICABLE
ND	NOT DETECTED AT OR ABOVE METHOD REPORTING LIMIT IN PARENTHESES
DRO	DIESEL-RANGE ORGANICS
bgs	BELOW GROUND SURFACE
mg/kg	MILLIGRAMS PER KILOGRAM

0	2.5	5	10
APPROXIMATE SCALE IN FEET			



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Engineering and Environmental Services

**35-F-4 Laboratory Analytical Results**  
**UST Decommissioning Assessment**  
Cordova FST Improvements  
Cordova, Alaska

FIGURE  
**5**

DRAWN BJ	PROJECT NUMBER 29625	APPROVED 	DATE 10/94	FILE NAME 112b
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