Site Cleanup and Investigation Report

Tanana FAA Station

Fuel Storage Tank Management Program Tanana, Alaska

Contract No.
DTFA04-96-D-10002

Delivery Order
DTFA04-97-F-C0027

Prepared for

Federal Aviation Administration

Prepared by

CH2-OH

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Contract No. DTFA04-96-D-10002
Delivery Order DTFA04-97-F-C0027

Approval Signatures:

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CH2-OH Project Director

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Abbreviations

ADEC	Alaska Department of Environmental Conservation
BTEX	benzene, toluene, ethylbenzene, and total xylenes
CAS	Columbia Analytical Services, Inc.
CFR	*Code of Federal Regulations*
CO	contracting officer
COMSERFAC	Community Service Facility
DRO	diesel-range organic
E&E	Ecology and Environment, Inc.
EPA	U.S. Environmental Protection Agency
ESI	expanded site investigation
FAA	Federal Aviation Administration
FSS	Flight Service Station
ft bgs	feet below ground surface
HLA	Harding Lawson Associates
IC	interim cleanup
mg/kg	milligrams per kilogram
mg/L	milligrams per liter
PID	photoionization detector
ppm	parts per million
SCIR	site cleanup and investigation report
TCLP	toxicity characteristic leaching procedure
TMB	trimethylbenzene
USGS	U.S. Geological Survey
VOC	volatile organic compound

Executive Summary

During the summer of 1997, CH2-OH, a joint venture, was contracted by the Federal Aviation Administration (FAA) to decommission four water wells, one lift station, and one wooden crib/dry well; abandon one concrete septic tank in place; and demolish and dispose of three buildings (Buildings 30, 602, and storage shed). CH2-OH accomplished this work under Delivery Order C0027 to contract DTFA04-96-D-10002.

The Tanana FAA Station is approximately 2 miles west of the confluence of the Tanana and Yukon Rivers, 0.25 mile west of the city of Tanana, and 130 air miles west of Fairbanks. FAA involvement at Tanana began in 1941. FAA currently owns a total of 40 acres of land at Tanana.

Guidelines for accomplishing field activities are presented in the following documents prepared by CH2-OH:

- Tanana FAA Station Work Plan/Sampling and Analysis Plan, August 1997
- Tanana FAA Station Health and Safety Plan, July 1997

The following activities were completed during summer 1997 and 1998 field efforts:

- Four inactive water wells were located and decommissioned.
- Two sewage lift stations were emptied, cleaned, and backfilled.
- Lead abatement services were performed on the exterior siding of Building 30. The material was removed and shipped offsite for disposal. The remainder of Building 30 was then demolished. Solid waste generated during demolition activities was transported to the local landfill for disposal.
- Building 602 was demolished and solid waste was transported to the local landfill for disposal. The small storage shed west of Building 602 was removed by others on August 13, 1997.
- Contaminated soils were identified on the west side of Building 205 (Shop) and on the west side of Building 600 (Engine Generator Building). Approximately 30 cubic yards of contaminated soil from the west end of Building 205 and approximately 10 cubic yards from Building 600 were removed. All the soils were stockpiled on 10-mil polyethylene lining and covered and secured with sandbags. The stockpiles were left onsite for future treatment by landfarming.
- Contaminated soil above site cleanup levels remains at both locations.
- Field screening and analytical soil sampling were done north of Building 600, Drum Storage area.
- The concrete septic tank reportedly on the east side of Building 300 could not be located. An old concrete siphon well was encountered and removed from the general area of the old septic tank.

- Lead paint chips adjacent to Building 205 were sampled, collected, and transported offsite for disposal.
- Several attempts were made to locate the dry well system reportedly west of Building 400, the Flight Service Station. All attempts were unsuccessful.

1.0 Introduction

This Site Cleanup and Investigation Report (SCIR) summarizes the restoration activities accomplished at the Federal Aviation Administration (FAA) station in Tanana, Alaska, during August and September of 1997 and September of 1998.

1.1 Purpose

The Tanana FAA Station Expanded Site Investigation/Interim Cleanup (ESI/IC) project was accomplished following the *Environmental Restoration Work Plan, Hazardous Materials Removal Program, Tanana, Alaska* (Harding Lawson Associates [HLA], 1994a) as modified by Attachment A of the Statement of Work for Delivery Order DTFA04-97-F-C0027 and the CH2-OH site-specific Work Plan/Sampling and Analysis Plan (CH2-OH, 1997a).

The site-specific work plan details field procedures for the decommissioning of four water wells, one lift station, one wooden crib/dry well; the abandonment of one concrete septic tank (in place); and the demolition and disposal of three buildings. This report summarizes field activities and provides recommendations for additional restoration actions as appropriate.

1.2 Station Overview and Environmental Setting

The Tanana FAA Station is in interior Alaska approximately 2 miles west of the confluence of the Tanana and Yukon rivers and 0.25 mile west of the city of Tanana (Figures 1 and 2). The Tanana FAA Station lies at 65°10'00" north latitude and 152°4'00" west longitude, within Township 4 North, Range 22 West, Section 13, and Township 4 North, Range 23 West, Sections 14 and 15, Fairbanks Meridian (U.S. Geological Survey [USGS], 1953).

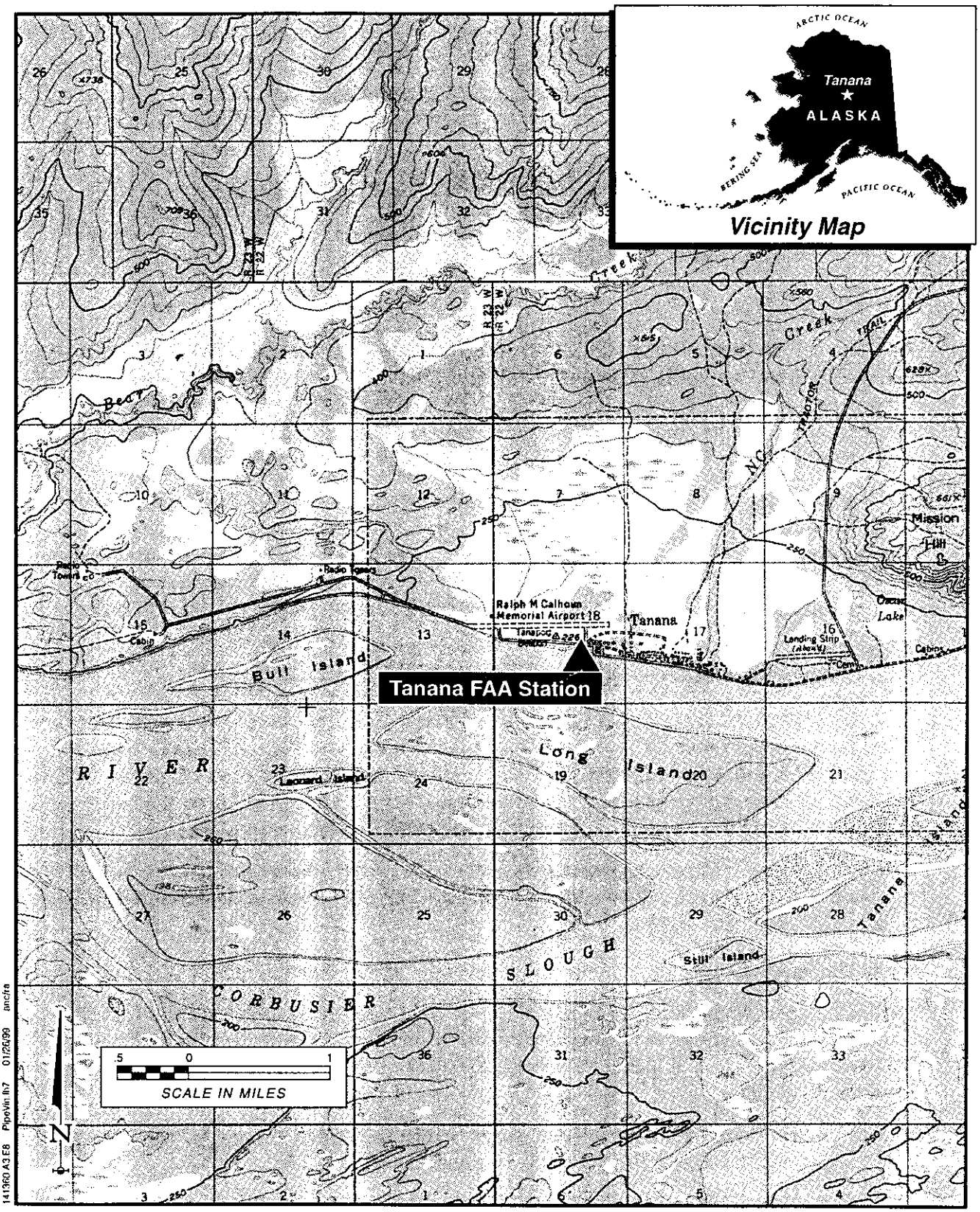
FAA involvement at Tanana began in 1941, and at one time the Tanana FAA Station consisted of 1,650 acres. Currently, the FAA owns a total of 40 acres, and no permanent FAA personnel are based in Tanana.

1.2.1 Geology

The area surrounding the city of Tanana is gently rolling terrain characteristic of the Yukon River Valley. Peaks of the Ray Mountains rise to the north of Tanana. Shist, sandstone, siltstone, clay, and shale underlie the village at depths of 35 to 140 feet, but most regularly at depths of 50 to 60 feet.

Soils in the vicinity of the community consist of 5 to 15 feet of silt, sandy silt, and silty sand overlying gravel sediments, which exist from depths of 35 to 40 feet.

Tanana lies at the northernmost extreme of the discontinuous permafrost zone. The town is generally underlain by permafrost 35 to 65 feet thick, but permafrost is likely to be absent in areas adjacent to the Yukon River. Seasonal frost has been reported to depths of 20 feet.



Source: USGS Quadrangle *Tanana (A-5), Alaska*

Figure 1
Vicinity Map
Site Cleanup and Investigation Report
Tanana, Alaska

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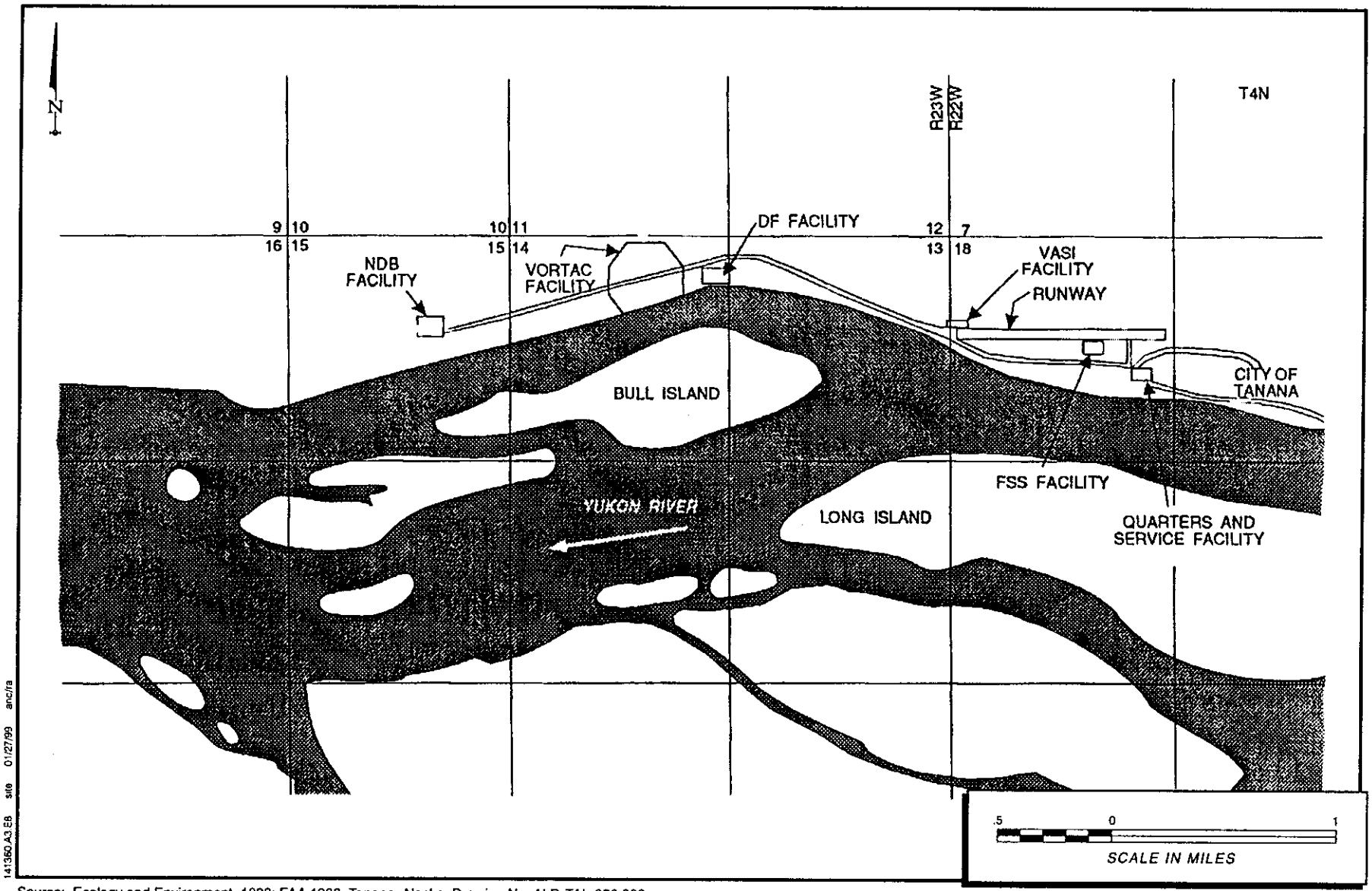

141360.A3 EB site 01/27/99 anc/ra

Source: Ecology and Environment, 1992; FAA 1963, Tanana, Alaska, Drawing No. ALD-TAL-050.000

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Figure 2

Tanana FAA Station Site Map
Site Cleanup and Investigation Report

Tanana, Alaska

1.2.2 Groundwater

In general, the groundwater flow direction in the vicinity of the Tanana FAA Station is expected to mirror the surface topography. However, groundwater recharge and flow paths are influenced by the presence of discontinuous silt and clay layers that act as nearly impermeable barriers. Local silt and clay layers may create locally perched or confined aquifers in the sediments. Near the Tanana FAA Station, groundwater occurs within unconsolidated deposits at depths ranging from 15 to 45 feet below ground surface (ft bgs).

Water for the community of Tanana is provided by two wells, which are approximately 200 feet apart and less than 25 feet from the Yukon River. Following chlorination, fluoride treatment, and softening to reduce iron content, water is stored in a 5,000-gallon storage tank at the city's washeteria building.

1.2.3 Surface Water

Surface water in the Tanana area flows toward one of three rivers: the Tanana, the Yukon, or the Tozitna. The Tanana River is usually silty and contains numerous sandbars and islands in its final 15 miles before reaching the Yukon River, approximately 2 miles east of the City of Tanana. The Tozitna River is nearly free of suspended sediment. The Tozitna River joins the Yukon River 10 miles below the confluence of the Yukon and Tanana rivers (Fison and Associates, 1987). The Tanana FAA Station lies along the Yukon River and may be subject to periodic flooding.

1.2.4 Vegetation and Wildlife

Vegetation at Tanana consists of upland spruce-hardwood forest. This is a fairly dense forest of white spruce, birch, aspen, and balsam poplar, with black spruce replacing white spruce in poorly drained areas and north-facing slopes. High-bush cranberries, raspberries, lingonberries, currants, grasses, and mosses are among the important plants of the area; willows, roses, and fireweed also grow there.

Moose may concentrate along the riverbank near Tanana, but generally the upland spruce-hardwood forest supports few animals. The red squirrel and pine marten are exceptional in being able to meet all their habitat requirements in this single environment. Shrews, bats, voles, porcupine, fox, bear, lynx, and weasel are among the other animals identified in the area.

Tanana is a medium-density waterfowl range and the Yukon River harbors significant runs of salmon, as well as grayling, pike, and other fish.

1.3 Organization of the Site Cleanup and Investigation Report

Section 1 contains a description of the project and project site. The Expanded Site Investigation/Interim Cleanup Activities are presented in Section 2. Restoration activity results are provided in Sections 3 through 9. Section 10 describes the station recommendation summary for the Tanana FAA facilities, and references are listed in Section 11.

2.0 Expanded Site Investigation/Interim Cleanup Activities

The FAA Hazardous Materials Removal Program is divided into two phases: expanded site investigation and interim cleanup activities. The ESI phase of the program is designed to assess the extent of environmental problems beyond the scope of immediate IC activities and the potential liability to the FAA at each site. Data generated during ESIs typically support follow-on remediation or IC actions.

ESI/IC activities at Tanana were accomplished by CH2-OH personnel between August 11, 1997, and September 12, 1997, and during September 1998. ESI/IC activities were conducted concurrent with fuel storage tank removal and replacement activities following the CH2-OH Work Plan/Sampling and Analysis Plan (CH2-OH, 1997a).

Some of the work accomplished under this delivery order overlapped ESI and IC boundaries. In such cases, discussions may be duplicated in both the ESI and IC subsections. An in-depth discussion of individual site investigations and IC activities is presented in Sections 3 through 9.

2.1 Expanded Site Investigation

2.1.1 General

ESI activities included in the scope of work at the Tanana FAA Station included the following:

- Records search and site reconnaissance survey to locate former dry well crib west of Building 400, Flight Service Station (FSS)
- Records search and site reconnaissance survey to locate former water well north of Building 600, Engine Generator Facility
- Records search and site reconnaissance survey to locate former septic tank adjacent to Building 300, Commercial Services Facility
- Field screen and collect analytical soil samples before and after excavation activities in an area of stressed vegetation west of Building 205, Maintenance Shop
- Field screen and collect analytical soil samples before and after excavation activities in an area of stressed vegetation west of Building 600, Engine Generator Facility
- Field screen and collect analytical soil samples from a drum storage area north of Building 600, Engine Generator Facility

The field team performing the ESI work consisted of the following personnel:

Individual	Organization	Responsibility
John Lovett	FAA	FAA Project Manager/Contracting Officer Representative
Bryan Carey	Advancia (formerly LB&M)	Onsite Technical Monitor
David Corbett	CH2-OH	Field Team Leader/Qualified Person
Todd Hiltunen	CH2-OH	Site Superintendent
Bob Trebble	CH2-OH	Sampler/Site Safety Officer

In addition to the above personnel, CH2-OH subcontracted with the following firms for analytical, lead abatement, waste handling, and solid waste disposal activities:

Firm	Activity
Columbia Analytical Services	Analytical testing
Burlington Environmental	Waste hauling and disposal
City of Tanana	Solid waste disposal
Asbestos Removal Specialists of Alaska, Inc.	Lead abatement and disposal
Construction Machinery, Inc.	Heavy equipment

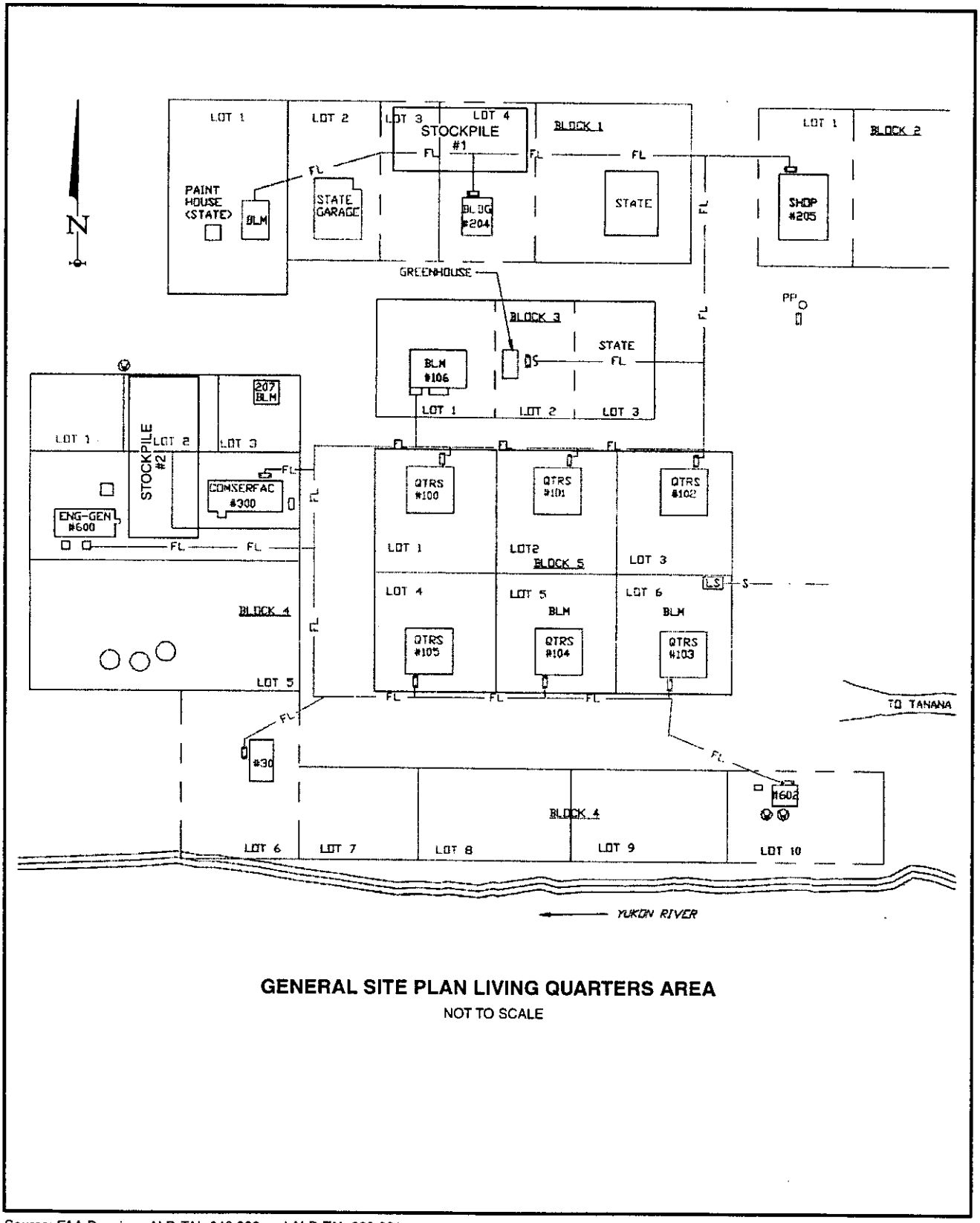
Site conditions varied significantly during execution of ESI field activities. Copies of site field notebooks are included in Appendix D. Photographs of work activities are included in Appendix A.

2.1.2 Expanded Site Investigation Activities

ESI activities at the Tanana FAA Station included records search and site reconnaissance actions at Buildings 300, 400, and 600, and field screening and soil sampling efforts associated with contaminated soil removal actions at Buildings 205 and 600 (Figure 3).

Records search and site reconnaissance actions consisted of the following activities:

- Reviewing historical records and as-built drawings for approximate locations of former structures and appurtenances
- Coordinating approximate locations with FAA project manager and/or station representatives
- Verifying former structure and appurtenance locations by visual observations
- Verifying former structure and appurtenance locations by excavating test pits



GENERAL SITE PLAN LIVING QUARTERS AREA

NOT TO SCALE

141360.A3.E8 Quarters fh7 01/28/99 anc/ra

Source: FAA Drawings ALD-TAL-040.002 and ALD-TAL-800.001

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Figure 3

Living Quarters Area Site Plan
Site Cleanup and Investigation Report

Tanana, Alaska

The approximate location of the former dry well serving Building 400, FSS, is shown in Figure 4. The approximate locations of the abandoned water well and concrete septic tank near Buildings 300 and 600 are shown in Figure 5.

Field screening and soil sampling efforts consisted of the following activities:

- Establishing a sampling grid over areas of suspected contamination
- Field screening soil samples with a photoionization detector (PID)
- Collecting soil samples to document site cleanup attainment

Figures 5 and 6 show the approximate locations of areas of suspected contamination adjacent to Building 600 and Building 205.

Details of the ESI and analytical results from samples collected are provided in Sections 3 through 9.

2.1.3 Deviations from the Work Plan

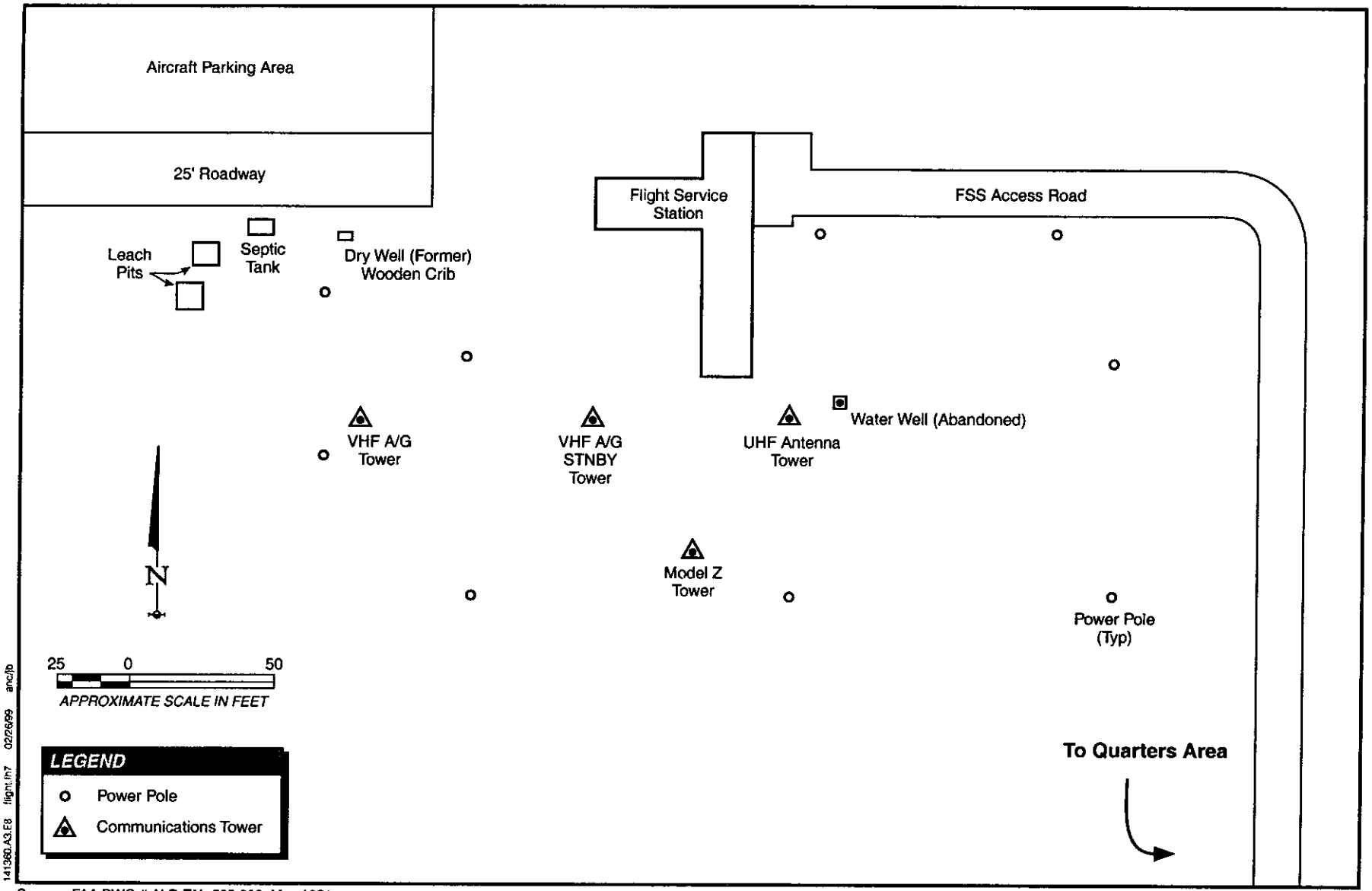
Elevated lead concentrations were identified by Ecology and Environment, Inc. (E&E, 1992) in one surface soil sample collected from an area north of Building 600. Based on written authorization from the contracting officer (CO), CH2-OH collected eight soil samples from the former drum storage area on September 29, 1998, for total lead analysis. Figure 5 shows the approximate location of the former drum storage area north of Building 600.

2.2 Interim Cleanup Activities

2.2.1 General

IC activities included in the scope of work at the Tanana FAA Station included the following:

- Decommission two inactive water wells south of Building 602, Water Treatment Building
- Decommission one inactive water well southeast of Building 400, FSS
- Decommission and remove sewage lift station between Quarters Buildings 102 and 103
- Decommission and remove 4- by 4- by 3-foot wooden crib west of Building 400, FSS
- Demolish and remove Building 602, Water Treatment Building
- Demolish and remove small storage shed west of Building 602
- Excavate and stockpile approximately 20 cubic yards of soil contaminated with diesel-range organic (DRO) compounds west of Building 600
- Remove and dispose of lead-contaminated exterior fiberboard from Building 30, Recreation Storage Building



Source: FAA DWG # ALD-TAL-500.000, May 1981.

Figure 4
Flight Service Station Site Plan
Site Cleanup and Investigation Report
Tanana, Alaska

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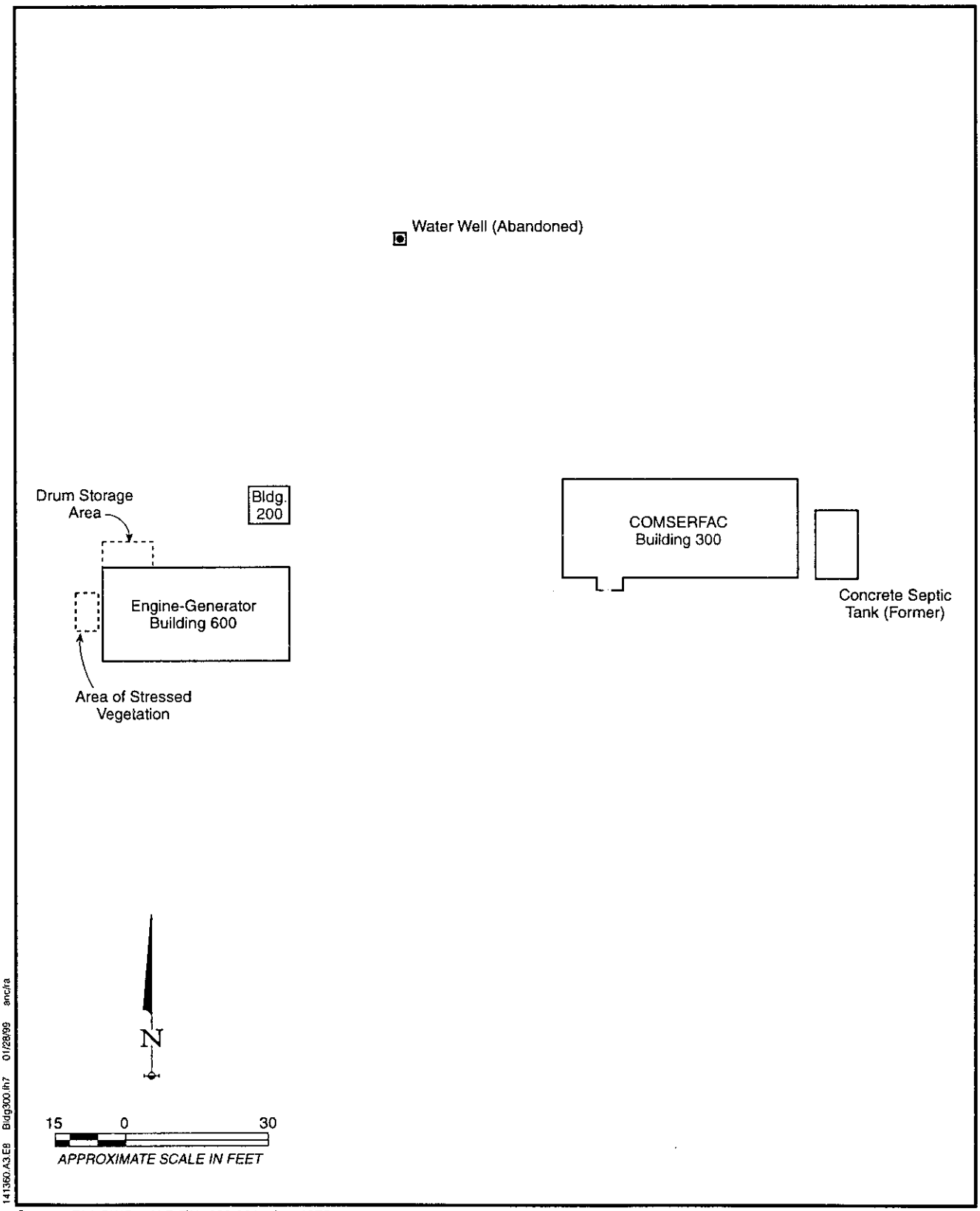

141360.A3.E8 Bldg300.ih7 01/28/99 anc/ra

Source: FAA DWG # ALD-TAL-800.001, Jan. 1975.

Figure 5

Buildings 300 and 600 Site Plan
Site Cleanup and Investigation Report

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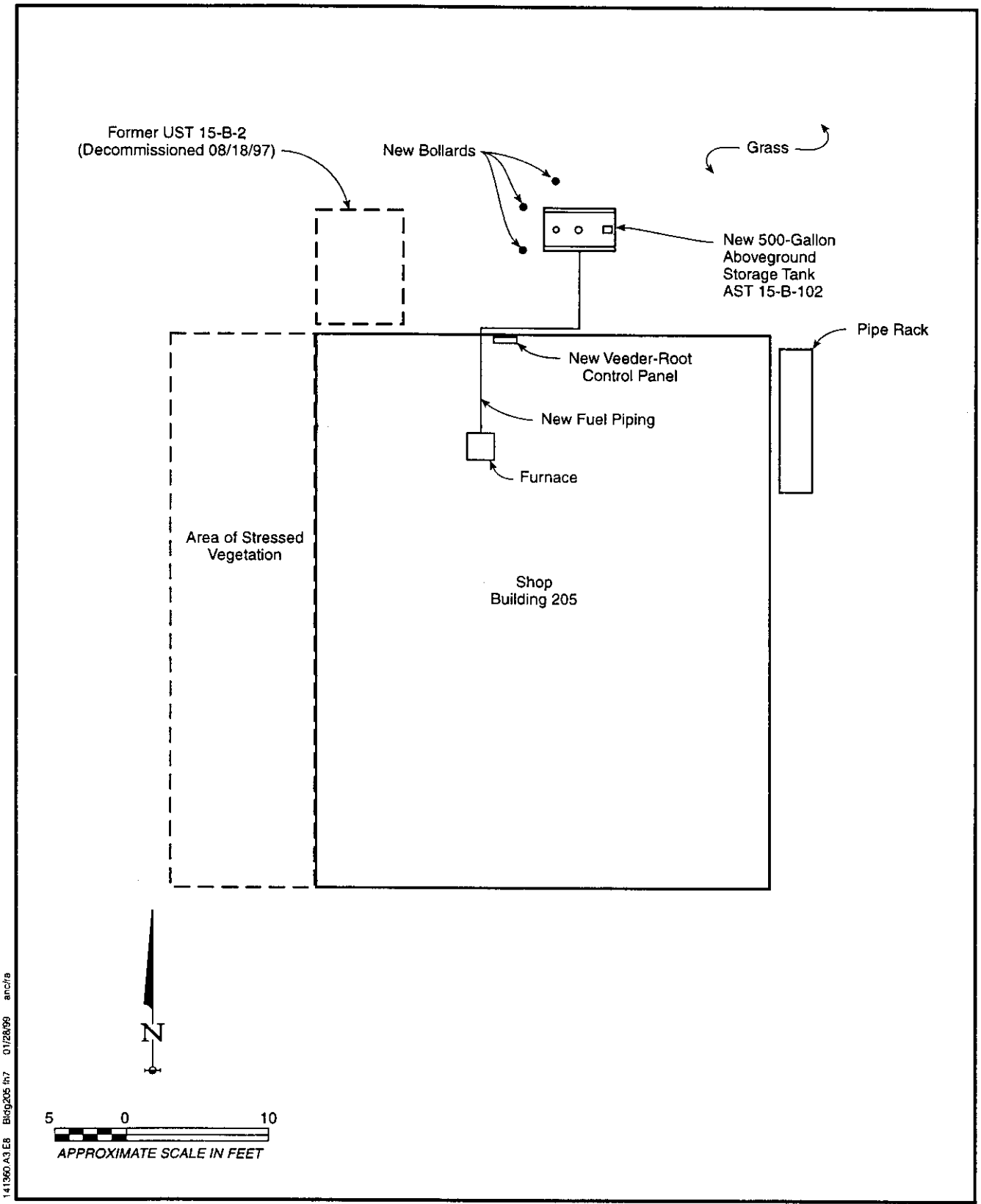

Source: FAA DWG # ALD-TAL-800.001, Jan. 1975.

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Figure 6

Building 205 Site Plan
Site Cleanup and Investigation Report

Tanana, Alaska

- Demolish and remove Building 30, Recreation Storage Building
- Decommission inactive water well north of Building 600, Engine Generator Building
- Decommission and remove concrete septic tank east of Building 300, Community Service Facility (COMSERFAC)

The field team for the IC activities consisted of the following personnel:

Individual	Organization	Responsibility
John Lovett	FAA	FAA Project Manager/CO Representative
Bryan Carey	Advancia (formerly LB&M)	Onsite Technical Monitor
David Corbett	CH2-OH	Field Team Leader/Qualified Person
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In addition to the above personnel, CH2-OH subcontracted with the following firms for analytical, lead abatement, waste handling, and solid waste disposal activities:

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Asbestos Removal Specialists of Alaska, Inc.	Lead abatement and disposal
Construction Machinery, Inc.	Heavy equipment

Site conditions varied significantly during IC field activities. Copies of site field notebooks are included in Appendix D. Photographs of work activities are included in Appendix A.

2.2.2 Interim Cleanup Activities

Interim cleanup activities at the Tanana FAA Station included locating and removing inactive water wells, septic tanks, dry wells and lift stations; demolishing and removing two abandoned facilities (Building 30 and 602); and excavating and stockpiling DRO-contaminated soil adjacent to Building 205 and 600.

Solid waste generated during removal and demolition activities was transported and disposed of at the City of Tanana solid waste disposal facility. Hazardous waste generated during lead abatement activities at Building 30 was transported to Burlington Environmental, Kent, Washington (WAD991281767) for disposal. Petroleum-contaminated soil excavated during IC activities was temporarily stored adjacent to Buildings 205 and 600. Before the site was demobilized, the temporary stockpiles were relocated to the two

long-term soil stockpiles east of Building 600 and north of Building 204. Waste manifests and certificates of disposal are included in Appendix C.

The approximate locations of proposed IC activities are shown in Figures 3 through 9. Details of the IC and analytical results from samples collected are provided in Sections 3 through 9.

2.2.3 Deviations from the Work Plan

IC activities proposed for the small storage shed west of Building 602 were not accomplished. The small storage shed was removed by others on August 13, 1997, with the approval of the FAA CO.

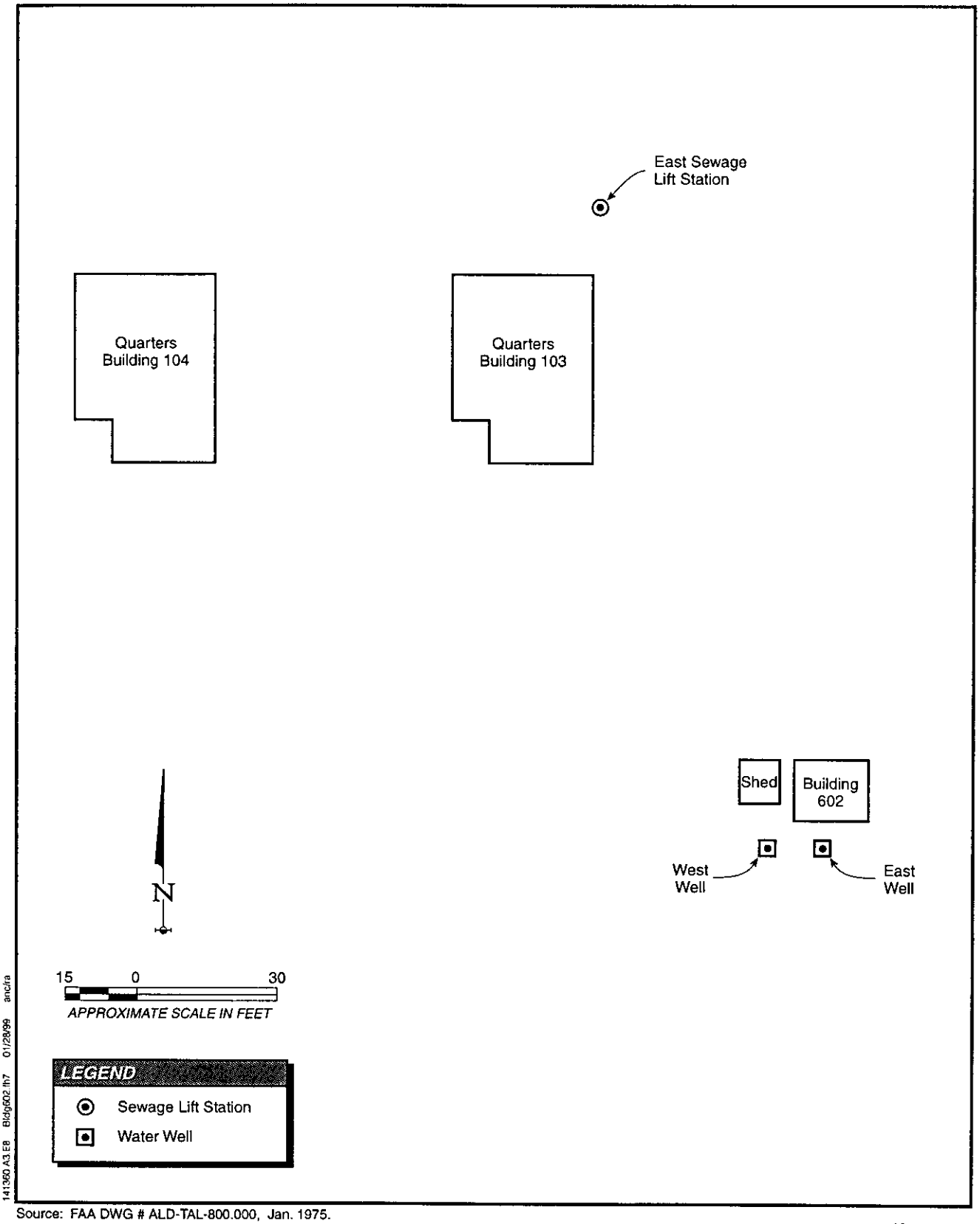
On the basis of field screening data, approximately 30 cubic yards of DRO-contaminated soil was removed from an area of stressed vegetation west of Building 205. Because of the proximity of the building foundation and the quantity of contamination requiring removal, excavation activities were discontinued at the direction of the FAA CO.

Approximately 10 cubic yards of DRO-contaminated soil was removed from an area of stressed vegetation west of Building 600. Additional soil excavation activities were discontinued at the direction of the FAA CO because of the proximity of the building foundation, utilities, and equipment access issues.

Red paint chips potentially contaminated with lead were identified surrounding Building 205. At the direction of the FAA CO, CH2-OH personnel collected a waste characterization sample of the material (TAL97PC107S) on August 22, 1997. CH2-OH personnel removed the paint chips from the perimeter of Building 205 on August 24, 1997. Waste material collected on this date was transported to Building 30 for temporary storage before transport and disposal offsite under hazardous waste manifest number TAL03.

A second sewage lift station was identified between Buildings 100, 104, and 105. The lift station was pumped and abandoned following the guidelines outlined in the CH2-OH work plan (CH2-OH, 1997a). Before abandonment, CH2-OH requested and received FAA CO approval for the additional scope of work.

CH2-OH personnel removed a power pole adjacent to Building 602. The removal of the power pole was considered incidental to building and well abandonment activities at this site.



141360 A3.EB Bldg602.lh7 01/28/99 anc/ra

Source: FAA DWG # ALD-TAL-800.000, Jan. 1975.

Figure 7
Water Treatment Building 602 Site Plan
Site Cleanup and Investigation Report
Tanana, Alaska

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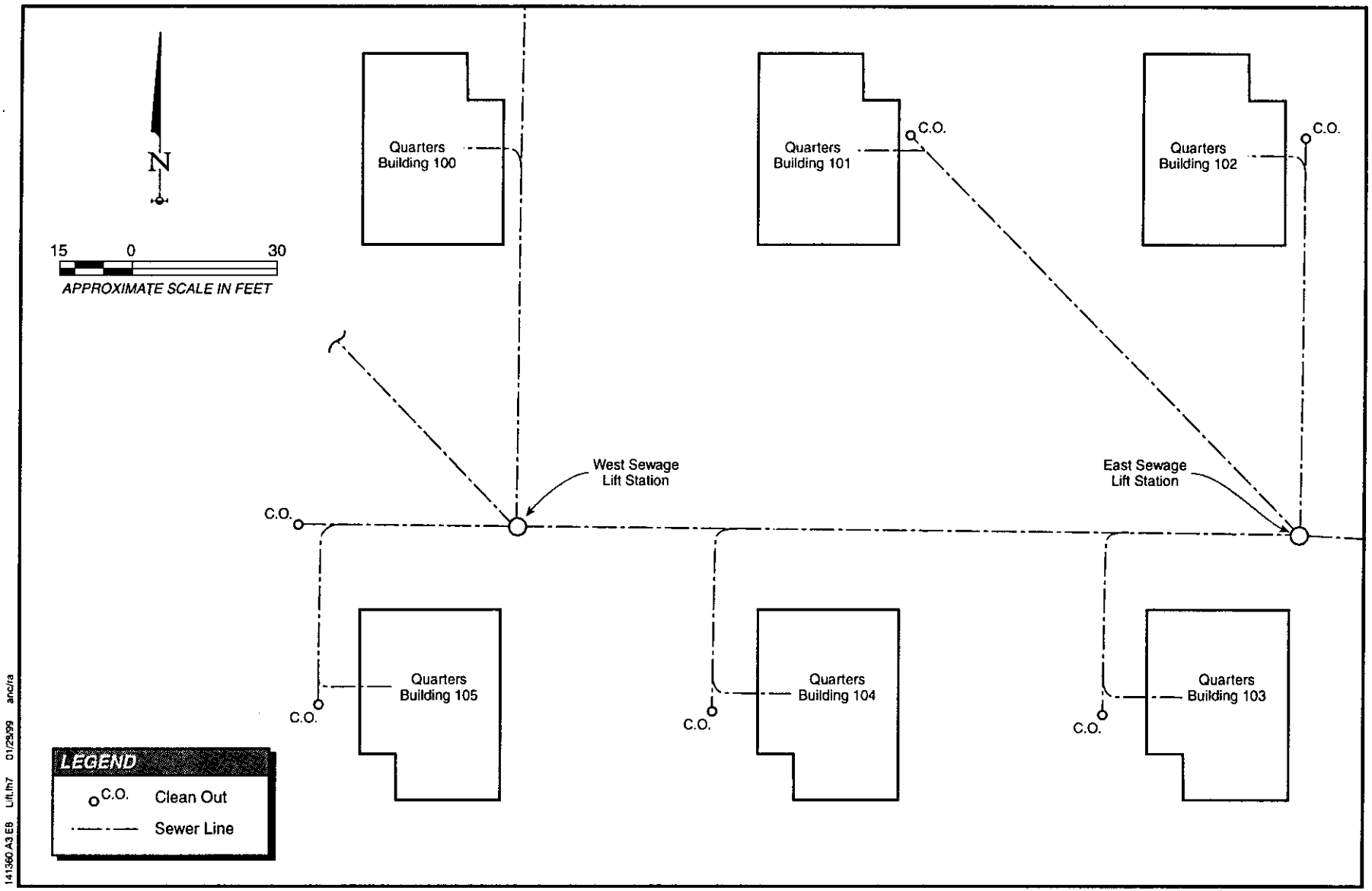

Source: FAA DWG # ALD-TAL-800.000, Jan. 1975.

Figure 8

Quarters Area Lift Station Location Site Plan
Site Cleanup and Investigation Report

Tanana, Alaska

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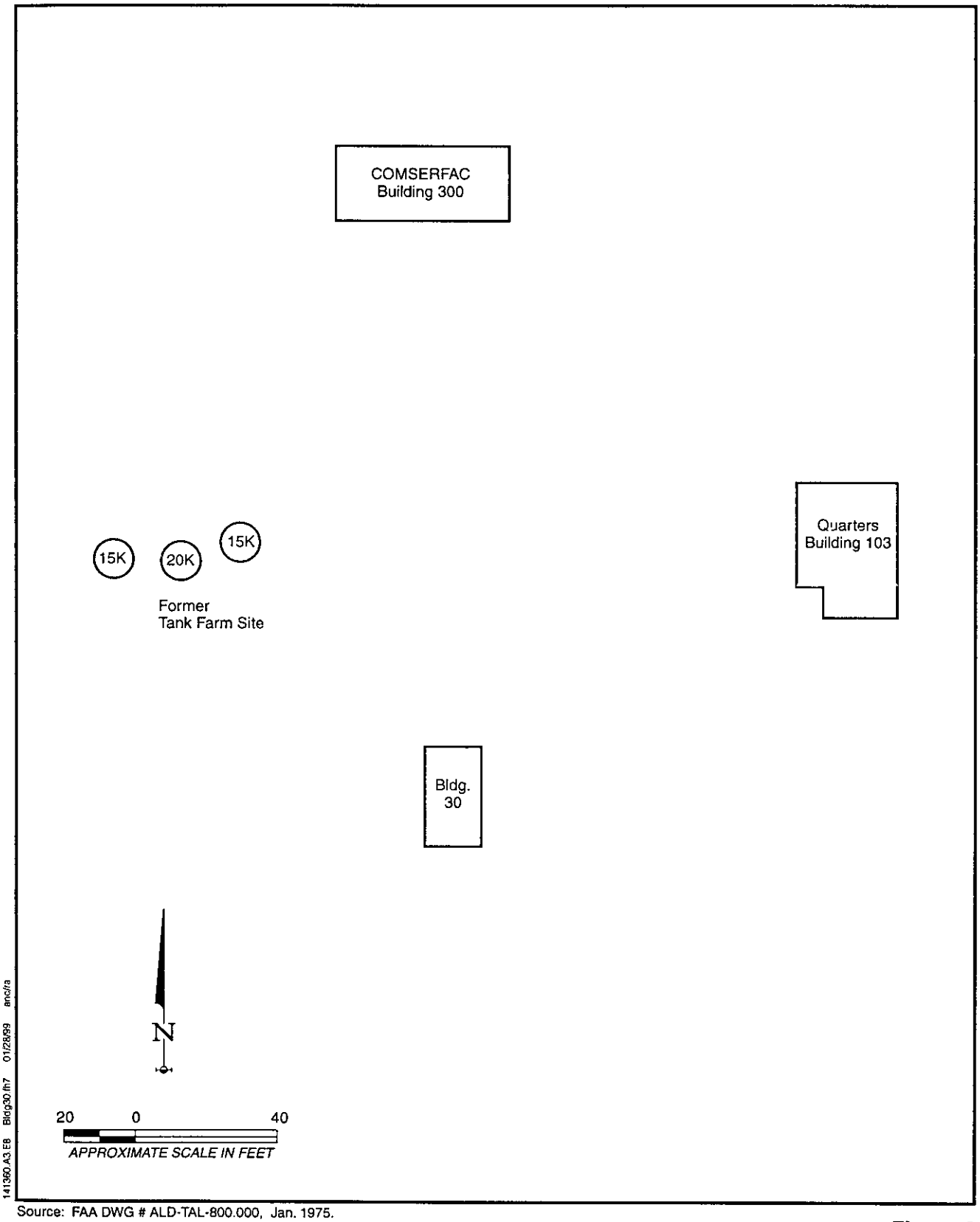

141360.A3.EB Bldg30.fh7 01/28/99 anc/ra

Source: FAA DWG # ALD-TAL-800.000, Jan. 1975.

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Figure 9

Recreation Building 30 Site Plan
Site Cleanup and Investigation Report

Tanana, Alaska

3.0 Building 400, Flight Service Station

This section discusses ESI and IC field activities at the FAA Flight Service Station (Building 400) facility. The location and a brief description of the sites investigated at this facility are discussed in Section 3.1. The ESI, which is discussed in Section 3.2, includes details on field investigation activities, investigation results, and conclusions and recommendations. Section 3.3 includes a discussion of IC activities, which consisted of abandoning a water well located approximately 30 feet east of the southeast corner of the building.

3.1 Location and Description

The FSS facility is south of the runway within Township 4 North, Range 22 West, Section 18, Fairbanks Meridian (Figure 2). FAA has operated the FSS site since its construction in the early 1950s (E&E, 1992).

The following ESI and IC activities were planned for this site:

- Attempt to locate an abandoned dry well/wooden crib approximately 90 feet west of Building 400. If located, the dry well would be sampled, cleaned, and abandoned in place (Figure 4).
- Decommission an inactive water well approximately 30 feet east of Building 400 (Figure 4).

3.2 Expanded Site Investigation

3.2.1 Field Activities and Results

To determine the approximate location of the former dry well/wooden crib site, CH2-OH representatives reviewed historical drawings, talked with station personnel, and accomplished a site reconnaissance survey. On the basis of available information, two test pits were excavated west of Building 400 on August 30, 1997. The first test pit was located near a rectangular bare spot in the general vicinity of the former dry well/wooden crib as shown on station as-built drawings. A second test pit was later excavated south of the original test pit. Neither excavation showed any signs of the former dry well/wooden crib or associated piping (Figure 4). A third attempt at locating the dry well site was made on September 1, 1997. The third test pit was approximately 90 feet west of Building 400 near the septic tank/lift station sites (Figure 4). No signs of the former dry well/wooden crib were observed.

3.2.2 Deviations from the Work Plan

All work planned at the FSS site was accomplished as specified in the work plan. Since the former dry well/wooden crib could not be located, no sampling was necessary.

3.2.3 Expanded Site Investigation Conclusions and Recommendations

Three attempts were made to locate the former dry well/wooden crib site west of Building 400. All three attempts were unsuccessful. From available information, CH2-OH concludes that the former dry well/wooden crib is no longer present and recommends no further action at this location.

3.3 Interim Cleanup

IC activities accomplished at the FSS site included the abandonment of an inactive water well approximately 30 feet east of Building 400. Figure 4 shows the location of the inactive well east of Building 400 and other visible site features.

3.3.1 Field Activities and Results

On August 30, 1997, CH2-OH personnel attempted to pull the casing for the inactive water well east of Building 400. Removal of the casing by pulling was unsuccessful. In accordance with the CH2-OH work plan, the water well was abandoned in the following manner:

- Well casing was exposed to a depth of 5 feet bgs and cut off
- Remaining casing was filled with bentonite
- Excavation was backfilled with clean material, compacted, and leveled

Solid waste generated during well abandonment activities was transported and disposed off at the Tanana landfill. Photographs of IC activities are included in Appendix A.

3.3.2 Deviation from the Work Plan

All work planned at the FSS site was accomplished as specified in the work plan.

3.3.3 Interim Cleanup Conclusions and Recommendations

IC activities planned for the FSS site are complete. No additional work is recommended for this site.

4.0 Building 205, Maintenance Shop

This section discusses ESI and IC field activities at the FAA Maintenance Shop (Building 205) facility. The location and brief descriptions of the sites investigated at this facility are discussed in Section 4.1. The ESI, which is discussed in Section 4.2, includes details on field investigation activities, investigation results, and conclusions and recommendations. Section 4.3 includes a discussion of IC activities, which consisted of excavating and stockpiling DRO-contaminated soil and collecting confirmation soil samples to document site cleanup efforts.

4.1 Location and Description

The Maintenance Shop facility is at the northeast corner of the Living Quarters Area (Figure 3). The building is used both as a shop building and for storage of maintenance supplies and equipment. An area of stressed vegetation was identified on the west side of the building by HLA (HLA, 1994a).

The following ESI and IC activities were planned for this site:

- Establish a sampling grid and field screen soil samples for potential contamination.
- Excavate, transport, and stockpile approximately 20 cubic yards of DRO-contaminated soil.
- Collect confirmation soil samples to verify attainment of site cleanup levels.

4.2 Expanded Site Investigation

ESI activities accomplished at the Maintenance Shop site included establishing a sampling grid along the west side of Building 205 and field screening soil samples for potential DRO contamination.

4.2.1 Sampling Activities and Results

To determine the extent of petroleum and solvent contamination around the maintenance shop, field screening samples were collected west of the building from an area of stressed vegetation (Figure 6). A 10- by 40-foot sampling grid was established and soil samples were collected from each of the grid points for field screening with a PID. Initial field screening locations and results are shown in Figure 10. On the basis of field screening data, CH2-OH representatives initiated IC activities at the site on August 25, 1997. Those activities included excavation and stockpiling of contaminated soil.

Following the removal of approximately 30 cubic yards of contaminated soil, confirmation soil samples were collected from the side walls and floor of the excavation. Soil samples were collected and shipped in accordance with the procedures outlined in the CH2-OH work plan (CH2-OH, 1997a). Six confirmation and one duplicate sample were collected on

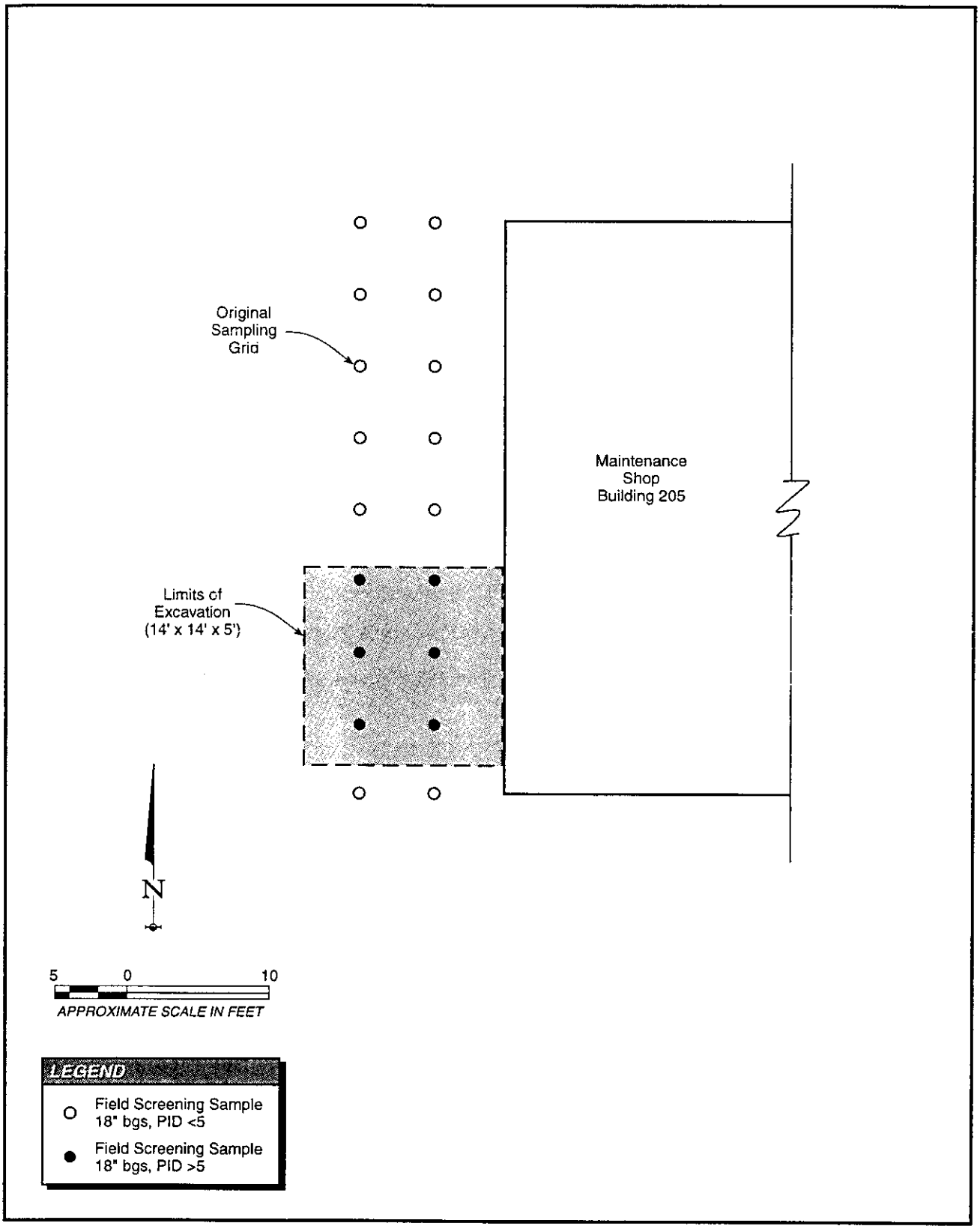


Figure 10

Maintenance Shop Building 205 Sampling Grid
Site Cleanup and Investigation Report

Tanana, Alaska

August 26, 1997, at the limits of the excavation (TAL97SS129S through TAL97SS135S). A summary of the analytical data for the Building 205 site is presented in Tables 1 and 2 and Figure 11. Chain-of-custody forms and complete data packages are included in Appendix B. The samples were shipped to Quality Analytical Laboratories, Inc., in Redding, California, for analysis of DRO; benzene, toluene, ethylbenzene, and xylenes (BTEX); and volatile organic compounds (VOCs).

DRO concentrations in all seven soil samples exceed the Alaska Department of Environmental Conservation (ADEC) Category B cleanup level of 200 milligrams per kilogram (mg/kg). DRO concentrations at the limits of excavation ranged from 210 mg/kg at the south wall (4 ft bgs) to 29,000 mg/kg at the north wall (4 ft bgs).

Total BTEX concentrations in all seven soil samples were below the ADEC Category B cleanup level of 15 mg/kg. Benzene concentrations were below laboratory method detection limits in all seven samples.

Four volatile organic compounds (o-xylene; 1,3,5 trimethylbenzene [TMB]; 1,2,4 TMB; and naphthalene) were identified in both soil samples analyzed by Method 8260. No chlorinated compounds were detected above method detection limits.

Photographs of ESI actions are included in Appendix A.

4.2.2 Deviations from the Work Plan

All work planned at the Building 205 site was accomplished as specified in the work plan.

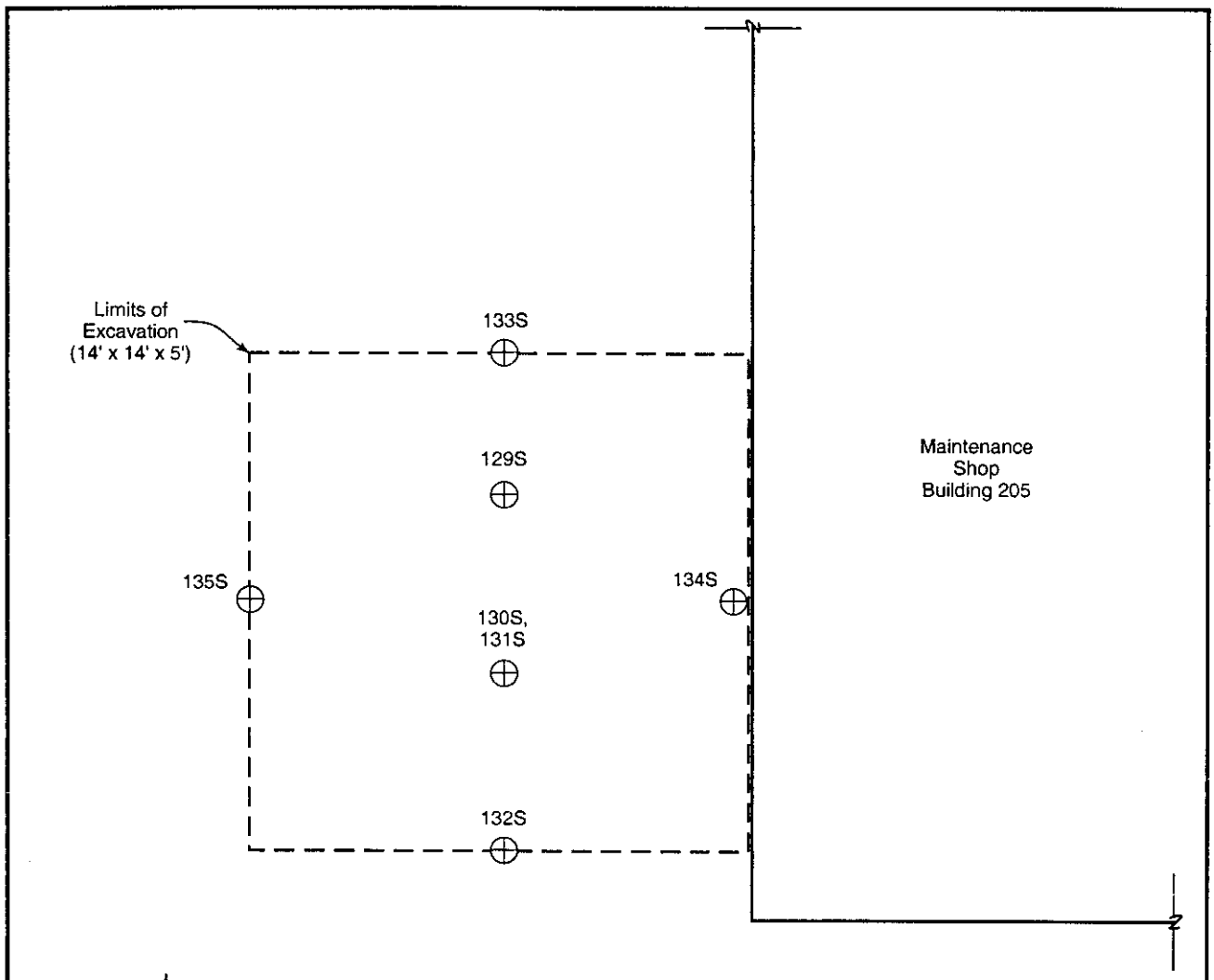
4.2.3 Expanded Site Investigation Conclusions and Recommendations

Approximately 30 cubic yards of petroleum-contaminated soil was excavated from an area of stressed vegetation west of Building 205. Additional soil removal actions were discontinued because of the proximity of the existing facility and the uncertainty on the lateral and horizontal extent of contamination at the site. Analytical soil samples collected from the limits of the excavation identified DRO concentrations above the proposed site cleanup level of 200 mg/kg in the walls and floor of the excavation.

CH2-OH recommends additional sampling at the site to establish the vertical and horizontal extent of contamination. On the basis of available information, FAA included this site in the August 1998 release investigation work plan (CH2-OH, 1998). Release investigation activities at the Tanana FAA Station were completed during September 1998 under a modification to Delivery Order C0025. Results from the release investigation are scheduled to be available for review in February 1999.

4.3 Interim Cleanup

IC activities accomplished at the Building 205 site included the excavation, transport, and stockpiling of approximately 30 cubic yards of petroleum-contaminated soil, and the sampling, collection, transport, and disposal of red paint chips adjacent to the facility.



Sample Number	Depth (ft bgs)	DRO (mg/kg)	BTEX (mg/kg)	1,3,5TMB (mg/kg)	1,2,4TMB (mg/kg)	Naphthalene
TAL97SS129S	5'	21,000	12.9	7.4	28.0	60.0
TAL97SS130S	5'	22,000	11.5	7.7	17.0	43.0
TAL97SS131S	5'	21,000	12.1	–	–	–
TAL97SS132S	4'	210	<0.03	–	–	–
TAL97SS133S	4'	29,000	9.2	–	–	–
TAL97SS134S	4'	17,000	4.3	–	–	–
TAL97SS135S	4'	9,700	5.2	–	–	–

ft bgs = Feet below ground surface
BTEX = Benzene, toluene, ethybenzene, xylenes
DRO = Diesel-range organics
TMB = Trimethylbenzene
mg/kg = Milligram/kilogram

141360.A3.E8 205Samp.fh7 02/01/99 amc/jb

Figure 11
Building 205 Sample Results
Site Cleanup and Investigation Report
Tanana, Alaska

TABLE 1
PID Field Screening Summary of Subsurface Soil, FAA Maintenance Shop (Building 205)
Tanana, Alaska

Sample Location	Depth (ft)	Field Screening Results (ppm)
South Floor	2.5	311
	5.0	280
North Floor	2.5	356
	5.0	359
Mid Floor	2.5	690
	5.0	450
South Wall	2.5	371
	4.0	204
North Wall	2.5	499
	4.0	397
East Wall	2.5	14
	4.0	NA
West Wall	2.5	408
	4.0	310

Notes: All samples were collected, on August 25, 1997.
ft = feet
ppm = Parts per million
NA = Not analyzed

TABLE 2
DRO, BTEX and VOC Analysis in Subsurface Soils, FAA Maintenance Shop (Building 205)
Tanana, Alaska

Sample Number	Depth (ft)	Location	DRO	Benzene	Toluene	Ethyl-benzene	Xylenes	VOCs	
TAL97SS129S	5	North Floor	21,000	<0.08	1.1	0.81	11	o-Xylene	5.5
								1,3,5 TMB	7.4
								1,2,4 TMB	28
								Naphthalene	60
TAL97SS130S	5	South Floor	22,000	<0.03	0.89	0.56	10	o-Xylene	5.1
								1,3,5 TMB	7.7
								1,2,4 TMB	17.0
								Naphthalene	43.0
TAL97SS131S	5	Dup 130S	21,000	<0.04	0.55	0.55	11	NA	
TAL97SS132S	4	South Wall	210	<0.03	<0.03	<0.03	<0.03	NA	
TAL97SS133S	4	North Wall	29,000	<0.04	0.79	0.63	7.8	NA	
TAL97SS134S	4	East Wall	17,000	<0.04	0.42	0.49	3.4	NA	
TAL97SS135S	4	West Wall	9,700	<0.03	0.36	0.64	4.2	NA	

Notes: Samples were collected on August 26, 1997.
All values in mg/kg-dry.
NA = Not analyzed
TMB = Trimethylbenzene

4.3.1 Field Activities and Results

At the request of the CO, CH2-OH representatives collected one sample of red paint chips from surface soil adjacent to Building 205 on August 22, 1997. The sample (TAL97PC107S) was shipped to Columbia Analytical Services, Inc. (CAS), in Anchorage, Alaska, for total lead analysis by U.S. Environmental Protection Agency (EPA) Method 7421. Total lead concentrations in the sample were reported as 233,000 mg/kg. On the basis of total lead concentrations, CH2-OH requested on September 5, 1997, that CAS reanalyze the sample by EPA Method 1311, toxicity characteristic leaching procedure (TCLP). Results from the TCLP analysis, 21.0 milligrams per liter (mg/L), identified the requirement to handle the paint chips as a hazardous waste in accordance with Title 40, Part 261, of the *Code of Federal Regulations* (CFR). Paint chips adjacent to Building 205 were collected and temporarily stored adjacent to Building 30 on August 24, 1997. The paint chips were removed from the site on September 6, 1997, under hazardous waste manifest number TAL03 for offsite disposal at the Burlington Environmental treatment, storage, and disposal site in Kent, Washington (WAD991281767).

Chain-of-custody forms and complete data packages are included in Appendix B. A completed hazardous waste manifest for the transport and disposal of the waste paint chips is included in Appendix C. Photographs of IC actions are included in Appendix A.

Guided by field screening data, CH2-OH representatives removed approximately 30 cubic yards of petroleum contaminated soil from an area west of Building 205 (Figures 10 and 11) on August 25, 1997. The soil was temporarily stored adjacent to Building 205 until August 31, 1997, when it was relocated to the long-term stockpile site. Clean fill material was used to backfill the excavation, which measured approximately 14 feet by 14 feet by 5 feet in depth.

4.3.2 Deviations from Work Plan

The CO added sampling, collection, transport, and disposal of lead-contaminated paint chips to the original scope of work. After coordination with the CO, an additional 10 cubic yards of contaminated soil were removed from the site in an attempt to achieve clean closure.

4.3.3 Interim Cleanup Conclusions and Recommendations

IC activities planned for the Building 205 site are complete. Additional cleanup requirements may be necessary based on the results of the September 1998 release investigation. Pending receipt of this information, no additional IC work is recommended at this time.

5.0 Building 300, COMSERFAC

This section discusses ESI and IC field activities at Building 300, the FAA, COMSERFAC facility. The location and a brief description of the sites investigated at this facility are discussed in Section 5.1. The ESI, which is discussed in Section 5.2, includes details on field investigation activities, investigation results, and conclusions and recommendations. Section 5.3 includes a discussion of IC activities, which consisted of abandoning a concrete septic tank east of Building 300.

5.1 Locations and Description

The COMSERFAC building is west of the living quarters area, within Township 4 North, Range 22 West, Section 18, Fairbanks Meridian (Figure 2). The building is currently used to store miscellaneous housing materials (E&E, 1992).

ESI and IC activities planned for this site included an attempt to locate an abandoned concrete septic tank east of Building 300 (Figure 5). If found, the septic tank would be cleaned, sampled, and abandoned in place.

5.2 Expanded Site Investigation

5.2.1 Field Activities and Results

To determine the location of the former concrete septic tank site, CH2-OH representatives reviewed historical drawings, talked with station personnel, and accomplished a site reconnaissance survey. Available information resulted in excavation of a test pit east of Building 300 on August 28, 1997. During excavation activities, an old concrete siphon well wall was located and removed. No other signs of the former concrete septic were observed. Photographs of ESI actions are included in Appendix A.

5.2.2 Deviations from Work Plan

All work proposed at the COMSERFAC site was accomplished as specified in the work plan. Because the former concrete septic tank could not be found, no sampling was required.

5.2.3 Expanded Site Investigation Conclusions and Recommendations

Attempts to locate the former concrete septic tank were unsuccessful. Based on available information, CH2-OH concludes that the former septic tank is no longer present and recommends no further action at this site.

5.3 Interim Cleanup

IC activities at the COMSERFAC site were limited to the removal and disposal of an old concrete siphon well wall. The concrete siphon well wall was removed on August 28, 1997, and later disposed of at the City of Tanana landfill as construction debris.

6.0 Building 600, Engine Generator Facility

This section discusses ESI and IC field activities at the FAA Engine Generator Facility (Building 600) site. The location and a brief description of the areas investigated at this site are discussed in Section 6.1. The ESI, which is discussed in Section 6.2, includes details on field investigation activities, investigation results, and conclusions and recommendations. Section 6.3 includes a discussion of IC activities, which consisted of excavating and stockpiling DRO-contaminated soil and abandoning a water well approximately 95 feet north of the Engine Generator Facility.

6.1 Location and Description

The Engine Generator Facility is on the west side of the living quarters area within Township 4 North, Range 22 West, Section 18, Fairbanks Meridian (Figures 2 and 3). The facility was formerly used to supply standby power to all facilities connected to the FAA utility system (E&E, 1992).

The following ESI and IC activities were planned for this site:

- Establish a sampling grid and field screen soil samples for potential contamination (Figures 5 and 12).
- Excavate, transport, and stockpile approximately 20 cubic yards of DRO-contaminated soil (Figures 5 and 12).
- Collect confirmation soil samples to verify attainment of site cleanup levels (Figure 12).
- Attempt to locate an abandoned water well approximately 95 feet north of Building 600. If found, the water well will be decommissioned or abandoned in place (Figure 5).
- Establish a sampling grid and collect soil samples from a former drum storage area north of Building 600 (Figures 5 and 12).

6.2 Expanded Site Investigation

ESI activities accomplished at the Engine Generator Facility site included establishing sampling grids along the west and north sides of Building 600 to determine areas of potential DRO and lead contamination, and researching available records to determine the location of an abandoned water well north of the facility.

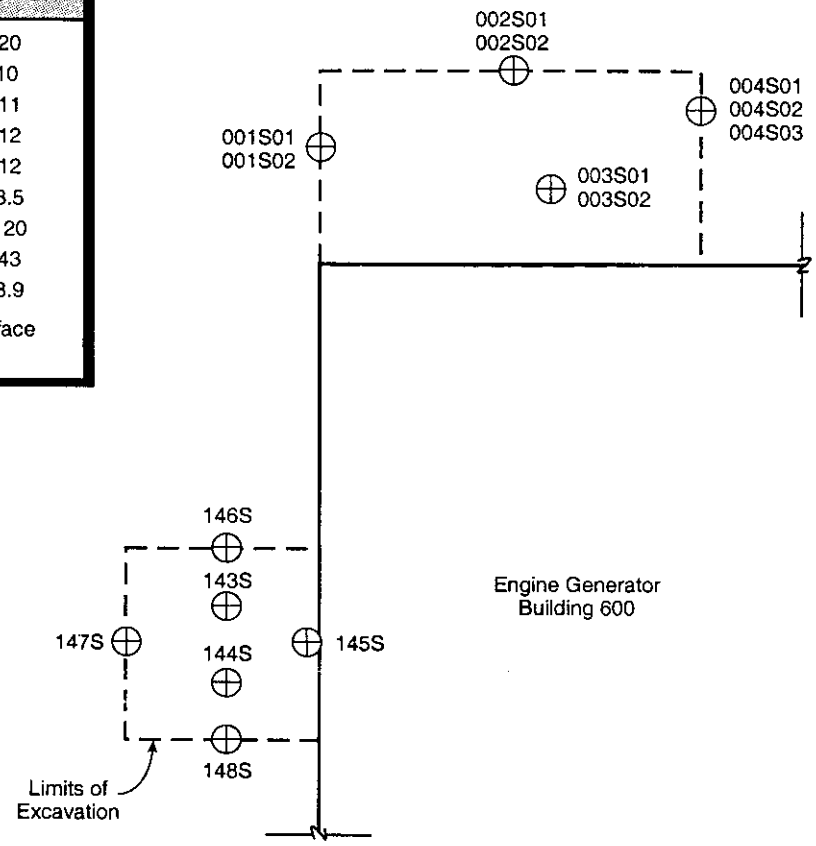
6.2.1 Field Activities and Results

To assess the extent of DRO contamination west of the Engine Generator Facility, field screening samples were collected from an area of stressed vegetation (Figure 5). Soil samples were collected at various depths (2 to 7 ft bgs) and tested with a PID. On the basis of field screening results, CH2-OH representatives initiated interim cleanup activities at the

DRUM STORAGE AREA

Sample Number	Depth (ft bgs)	Lead (mg/kg)
TAL98SL001S01	0.5'	20
TAL98SL001S02	1.5'	10
TAL98SL002S01	0.5'	11
TAL98SL002S02	1.5'	12
TAL98SL003S01	0.5'	12
TAL98SL003S02	1.5'	8.5
TAL98SL004S01	0.5'	120
TAL98SL004S02	1.5'	43
TAL98SL004S03	1.5'	8.9

ft bgs = Feet below ground surface
mg/kg = Milligram/kilogram



SPILL AREA

Sample Number	Depth (ft bgs)	DRO (mg/kg)	BTEX (mg/kg)
TAL97SS143S	7'	2,200	0.32
TAL97SS144S	7'	10	<0.04
TAL97SS145S	6'	34,000	17.1
TAL97SS146S	6'	8.7	<0.05
TAL97SS147S	6'	27	12.7
TAL97SS148S	6'	230	0.31

ft bgs = Feet below ground surface
BTEX = Benzene, toluene, ethybenzene, xylenes
DRO = Diesel-range organics
mg/kg = Milligram/kilogram

2.5 0 5
APPROXIMATE SCALE IN FEET

LEGEND

⊕ 144S Sample Location Number

141360.A3.E8 Engine.ln7 02/01/99 anc/jb

CH2-OH
FAA FST Mgmt. Program

Figure 12
Engine Generator Building 600 Sample Results
Site Cleanup and Investigation Report
Tanana, Alaska

site on August 26, 1997. Interim cleanup actions included excavation and stockpiling of contaminated soil.

After the removal of approximately 10 cubic yards of contaminated soil, confirmation soil samples were collected from the limits of the excavation. Soil samples were collected following the procedures outlined in the CH2-OH site-specific work plan (CH2-OH, 1997a). A total of six confirmation samples were collected from the limits of the excavation on August 27, 1997 (TAL97SS143S through TAL97SS148S). A summary of analytical data for the Building 600 spill site is presented in Table 3 and Figure 12. Chain-of-custody forms and complete data packages are included in Appendix B. Samples were shipped by a commercial carrier to Quality Analytical Laboratory, Inc., in Redding, California, for DRO and BTEX analysis.

TABLE 3
DRO and BTEX Analysis in Subsurface Soils
Building 600, Engine Generator Facility
Tanana, Alaska

Sample Number	Depth (ft)	Location	DRO	Benzene	Toluene	Ethylbenzene	Xylenes
TAL97SS143S	7	North floor	2,200	<0.03	<0.03	0.077	0.24
TAL97SS144S	7	South floor	10	<0.04	<0.04	<0.04	<0.04
TAL97SS145S	6	East wall	34,000	<0.06	<0.06	2.1	15
TAL97SS146S	6	North wall	8.7	<0.05	<0.05	<0.05	<0.05
TAL97SS147S	6	West wall	27	<0.05	<0.05	2.7	10
TAL97SS148S	6	South wall	230	<0.05	<0.05	0.078	0.23

Samples collected on August 26, 1997.
Values in mg/kg-dry

DRO concentrations in three of the six samples exceed the ADEC Category B cleanup level of 200 mg/kg. DRO concentrations at the limits of the excavation ranged from 8.7 mg/kg (north wall) to 34,000 mg/kg (east wall). DRO concentrations above proposed site cleanup levels were identified at the north floor, east wall, and south wall of the excavation.

Total BTEX concentrations in one of the six samples (17.1 mg/kg) exceeded the proposed site cleanup level of 15 mg/kg. This sample location corresponds to the location of the highest observed DRO concentration (TAL97SS145S). Benzene concentrations were below laboratory method detection limits in all six samples.

To establish the location of the former water well north of Building 600, CH2-OH representatives reviewed historical drawings, talked with station personnel, and accomplished a site reconnaissance survey. The abandoned water well was located in the field by CH2-OH representatives on August 28, 1997. The water well was found approximately 73 feet north and east of Building 600 (Figure 5). Several attempts to pull the casing were made on August 29, 1997, with no success. The well was decommissioned on

August 29, 1997, as outlined in the CH2-OH work plan (CH2-OH, 1997a). Decommissioning activities included the following:

- Removing the top 5 feet of casing
- Filling the remainder of the annulus with sand and bentonite
- Capping with 1 foot of concrete

To access the extent of lead contamination north of Building 600, CH2-OH representatives established a 5- by 10-foot sampling grid and collected soil samples at 6 and 18 inches bgs. Samples were collected following the procedures outlined in the release investigation plan (CH2-OH, 1998) on September 24, 1998. The samples were shipped by commercial carrier to Analytica Alaska, Inc., in Broomfield, Colorado, for total lead analysis by EPA Method 7421.

Eight investigation and one duplicate sample were collected from the sampling grid north of Building 600 (Figure 12). A summary of the analytical results is presented in Table 4 and Figure 12. Chain-of-custody forms and complete data packages are included in Appendix B.

TABLE 4
Lead Analysis in Near Surface Soils
Building 600, Engine Generator Facility
Tanana, Alaska

Sample Number	Depth (ft)	Lead Concentration (mg/kg-dry)	Location
TAL98SL001S01	0.5	20	West side
TAL98SL001S02	1.5	10	West side
TAL98SL002S01	0.5	11	North side
TAL98SL002S02	1.5	12	North side
TAL98SL003S01	0.5	12	Center
TAL98SL003S02	1.5	8.5	Center
TAL98SL004S01	0.5	120	East side
TAL98SL004S02	1.5	43	East side
TAL98SL004S03	1.5	8.9	Duplicate 004502

Samples collected on September 29, 1998.

Total lead concentrations ranged from 8.5 mg/kg to 120 mg/kg.

6.2.2 Deviations from the Work Plan

All work planned at Building 600 was accomplished as specified in the work plan.

6.2.3 Expanded Site Investigation Conclusions and Recommendations

Approximately 10 cubic yards of DRO-contaminated soil were excavated from an area of stressed vegetation west of Building 600, Engine Generator Facility. Additional soil removal actions were discontinued because of the proximity of the existing facility and utilities and the uncertainty about the lateral and horizontal extent of contamination. Analytical soil

samples collected from the limits of the excavation identified DRO and BTEX concentrations above proposed site cleanup levels. CH2-OH recommends additional sampling be accomplished at this site to establish the horizontal and vertical extent of contamination.

FAA included Building 600 in the August 1998 release investigation work plan (CH2-OH, 1998). Release investigation activities at the Tanana FAA Station were completed in September 1998 under a modification to Delivery Order C0025. Results from the release investigation are scheduled to be available for review in January/February 1999.

CH2-OH representatives completed well abandonment in accordance with the work plan. No additional actions are recommended for this site.

Analytical samples collected from the former drum storage area north of Building 600 identified total lead concentrations ranging from 8.5 mg/kg to 120 mg/kg. The EPA has issued interim guidance on the cleanup of lead-contaminated soil suggesting cleanup goals ranging from 500 to 1,000 mg/kg (EPA, 1989 and 1990). For soils at FAA stations, a lead level of 500 mg/kg is typically used as a threshold for determining if further investigation is required (E&E, 1992). On the basis of available information, CH2-OH recommends no further action at this site.

6.3 Interim Cleanup

IC activities accomplished at the Building 600 site included the excavation, transport, and stockpiling of approximately 10 cubic yards of DRO-contaminated soil.

6.3.1 Field Activities and Results

Guided by field screening data, CH2-OH representatives removed approximately 8 cubic yards of DRO-contaminated soil from an area west of Building 600 (Figure 12) on August 26, 1997. The soil was temporarily stored adjacent to Building 600 until September 2, 1997, when it was relocated to the long-term stockpile site. Clean fill material was used to backfill the excavation, which measured approximately 5 feet by 5 feet by 7 feet in depth.

6.3.2 Deviations from Work Plan

Because of the proximity of existing facilities, overhead utilities, and vegetation, only 10 cubic yards of DRO-contaminated soil were removed instead of 20 cubic yards as outlined in the work plan.

6.3.3 Interim Cleanup Conclusions and Recommendations

IC actions proposed for the Building 600 location are complete. Additional cleanup requirements may be necessary based on the results of the September 1998 release investigation. Pending receipt of this information, no additional IC work is recommended at this time.

7.0 Building 30, Recreation Storage

This section discusses IC field activities at Building 30, Recreation Storage facility. The location and a brief discussion of the work planned for this facility are outlined in Section 7.1. Section 7.2 includes a discussion of IC activities, which consisted of removal, transport, and disposal of lead-painted siding, and building demolition.

7.1 Location and Description

The Recreation Storage facility is in the southwest corner of the living quarters area within Township 4 North, Range 22 West, Section 18, Fairbanks Meridian (Figures 3 through 9). The facility was formerly used by FAA residents for personal storage (E&E, 1992).

The following IC activities were planned for this site:

- Remove, containerize, transport, and dispose of exterior lead-painted siding.
- Demolish building and transport debris to the City of Tanana solid waste facility.

7.2 Interim Cleanup

7.2.1 Field Activities and Results

Lead abatement activities at the Building 30 site began on August 25, 1997, and continued through August 28, 1997. Asbestos Removal Specialists of Alaska was subcontracted by CH2-OH to remove, containerize, transport, and dispose of lead-painted exterior siding. Approximately 1,170 square feet of lead-painted fiberboard was removed from Building 30 and containerized into seven containment boxes covered with Visqueen. Each containment box was labeled and temporarily stored adjacent to Building 30 pending final transport and disposal. The seven containment boxes were removed from the site on September 6, 1997, under hazardous waste manifest number TAL03 for offsite disposal at the Burlington Environmental treatment, storage, and disposal site in Kent, Washington (WAD991281767). A copy of the completed hazardous waste manifest is included in Appendix C. Photographs of lead abatement activities are included in Appendix A.

Demolition activities for Building 30 began on September 4, 1997, and were completed the following day. Construction debris generated during demolition activities was hauled to the City of Tanana solid waste landfill for disposal on September 5, 1997. A copy of the certificate of acceptance is included in Appendix C.

7.2.2 Deviations from the Work Plan

All work planned at Building 30 was accomplished as outlined in the work plan.

7.2.3 Interim Cleanup Conclusions and Recommendations

Lead abatement and building demolition actions were accomplished in accordance with applicable regulations and standard industry practices. No additional work is proposed at this location.

8.0 Building 602, Water Treatment Facility

This section discusses IC field activities at the FAA Water Treatment Facility, Building 602. The location and a brief discussion of the work planned for this facility are outlined in Section 8.1. Section 8.2 includes a discussion of IC activities, which consisted of abandoning two water wells and building demolition.

8.1 Location and Description

The water treatment facility is situated in the southeast corner of the living quarters area within Township 4 North, Range 22 West, Section 18, Fairbanks Meridian (Figures 3 and 7). Building 602 formerly housed water treatment and distribution systems to provide drinking water to the FAA living quarters area (Figure 8).

The following IC activities were planned for this site:

- Decommission two inactive water wells south of Building 602 (Figure 7)
- Demolish water treatment Building 602 (Figure 7)
- Demolish storage shed west of Building 602 (Figure 7)
- Transport and dispose of construction debris at the City of Tanana solid waste landfill

8.2 Interim Cleanup

8.2.1 Field Activities and Results

On August 14, 1997, CH2-OH representatives located the two inactive wells south of Building 602 and began well abandonment procedures. Pumps and drop piping (1-1/2-inch polyvinyl chloride) were removed from each casing and transported to the City of Tanana solid waste landfill on this date. Attempts to remove the casings by pulling were unsuccessful. In accordance with the CH2-OH work plan, the following procedures were used to abandon each well:

- Concrete well pit walls were broken and removed, exposing well casing to a depth of 5 ft bgs. The well casing was subsequently cut off.
- The remaining casing was filled with bentonite and grout to the top.
- The excavation was backfilled with clean material, compacted, and leveled.

Water well abandonment activities were completed on August 30, 1997. Concrete associated with well pit side walls was buried onsite at the direction of the CO. All other debris generated during well abandonment activities was transported to the City of Tanana solid waste landfill on September 5, 1997. A copy of the landfill acceptance letter is included in Appendix C. Photographs of well abandonment activities are included in Appendix A.

Demolition activities for Building 602 began on August 27, 1997, and were completed the same day. Construction-related debris, excluding concrete, was loaded and hauled to the City of Tanana solid waste landfill on August 27, 1997, and on September 5, 1997. Concrete debris was buried onsite with concrete debris from the water well abandonment. A copy of the landfill acceptance letter is included in Appendix C. Photographs of building demolition activities are included in Appendix A.

8.2.2 Deviations from the Work Plan

Demolition activities planned for the small storage shed adjacent to Building 602 were not accomplished. The building was moved offsite by a local resident on August 13, 1997, with the approval of the CO. All other planned activities were completed as outlined in the work plan.

8.2.3 Interim Cleanup Conclusions and Recommendations

Well abandonment and building demolition activities were accomplished according to the work plan and standard industry practices. No additional work is recommended at this location.

9.0 Living Quarters Area

This section discusses IC field activities at the FAA Living Quarters Area. The location and a brief discussion of the work planned for this site are outlined in Section 9.1. Section 9.2 includes a discussion of IC activities, which included abandoning a sewage lift station situated between Building 102 and Building 103.

9.1 Location and Description

The Living Quarters Area is within Township 4 North, Range 22 West, Section 18, Fairbanks Meridian (Figures 2 and 3).

The following IC activities were planned for this site:

- Decommission the sewage lift station between Building 102 and Building 103 (Figure 8).
- Transport and dispose of demolition debris at the City of Tanana solid waste landfill.

9.2 Interim Cleanup

9.2.1 Field Activities and Results

On August 29, 1997, CH2-OH personnel located the sewage lift station between Building 102 and Building 103 and began removing standing water from the 4-foot culvert. Approximately 185 gallons of liquid were removed and hauled to the City of Tanana sewage treatment lagoon for disposal. A second lift station was identified on this date between Building 100 and Building 105. At the direction of the CO, CH2-OH decommissioned both sewage lift stations on September 3, 1997. In accordance with the CH2-OH work plan, the following procedures were used to decommission the sewage lift station:

- Interior pumps and piping were removed and disposed of at the Tanana solid waste landfill.
- Lift station contents were removed and hauled to the Tanana sewage treatment lagoon for disposal.
- Culvert openings were plugged with "THORITE" concrete patching compound.
- Culvert side walls were exposed and crushed to a depth of 1-1/2 ft bgs.
- Clean fill material was used to fill each lift station and was compacted and leveled.

Photographs of lift station decommissioning actions are included in Appendix A.

9.2.2 Deviations from the Work Plan

A second sewage lift station was identified and decommissioned. All other planned activities were completed as outlined in the work plan.

9.2.3 Interim Cleanup Conclusions and Recommendations

Lift station decommissioning activities were accomplished according to the work plan. No additional work is recommended at this location.

10.0 Station Recommendation Summary

This section discusses recommendations for the entire Tanana FAA Station based on information and conclusions discussed in Sections 3 through 9. A concise summary of all recommendations is provided in Table 5.

TABLE 5
Station Recommendations
Tanana, Alaska

Area	ESI	IC
Building 205, Maintenance Shop	Additional sampling to determine extent of DRO contamination west of Building 205	Removal action based on September 1998 RI report
Building 600, Engine Generator Facility	Additional sampling to determine extent of DRO contamination west of Building 600	Removal action based on September 1998 RI report
Building 400, Flight Service Station	No further actions	No further actions
Building 300, COMSERFAC	No further actions	No further actions
Building 30, Recreation Building	NA	No further actions
Building 602, Water Treatment Facility	NA	No further actions
Living Quarters Area	NA	No further actions

RI = Remedial investigation
NA = Not applicable

10.1 Building 205, Maintenance Shop

10.1.1 Expanded Site Investigation Recommendations

DRO contamination above proposed site cleanup levels was identified in all seven soil samples collected from the limits of the IC excavation. Additional soil sampling is recommended to establish the lateral and horizontal extent of contamination west of Building 205.

Additional sampling at this site was accomplished by FAA during September 1998. Results from the release investigation are anticipated in February 1999.

10.1.2 Interim Cleanup Recommendations

Additional IC actions may be appropriate based on the results from the September 1998 FAA release investigation project. No additional IC actions are recommended at this time.

10.2 Building 600, Engine Generator Facility

10.2.1 Expanded Site Investigation Recommendations

DRO contamination above proposed site cleanup levels was identified in three of six soil samples collected from the limits of the interim cleanup excavation. Additional soil sampling is recommended to establish the lateral and horizontal extent of contamination west of Building 600.

Additional sampling at this site was accomplished by FAA during September 1998. Results from the release investigation are anticipated in February 1999.

10.2.2 Interim Cleanup Recommendations

Additional interim cleanup actions may be appropriate based on the results of the September 1998 FAA release investigation project. No additional IC actions are recommended at this time.

11.0 References

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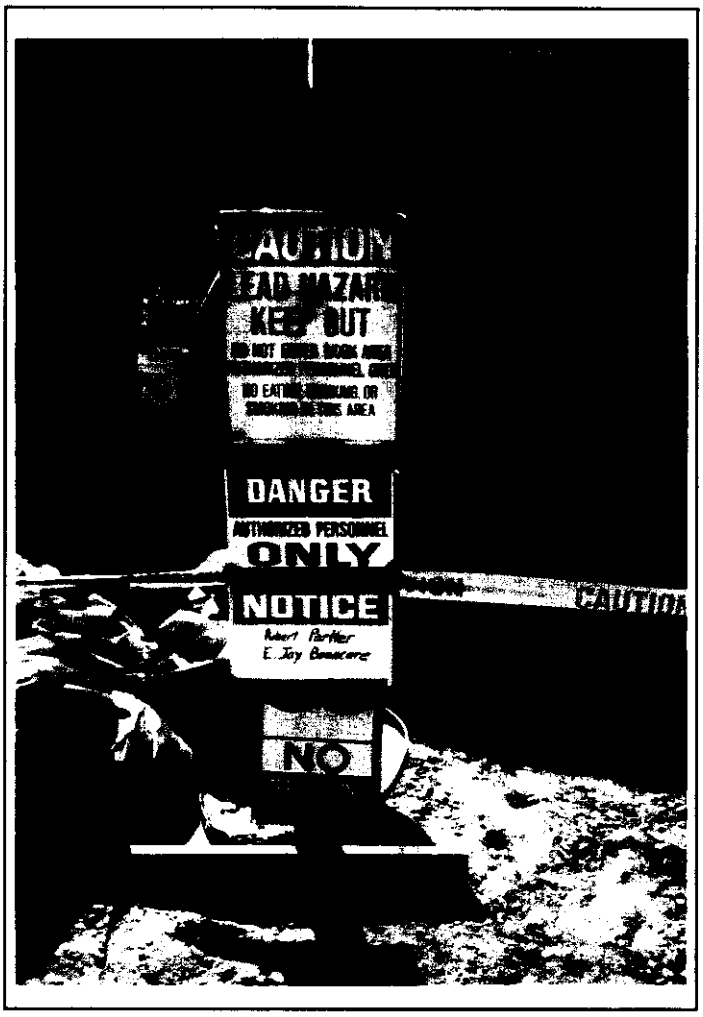
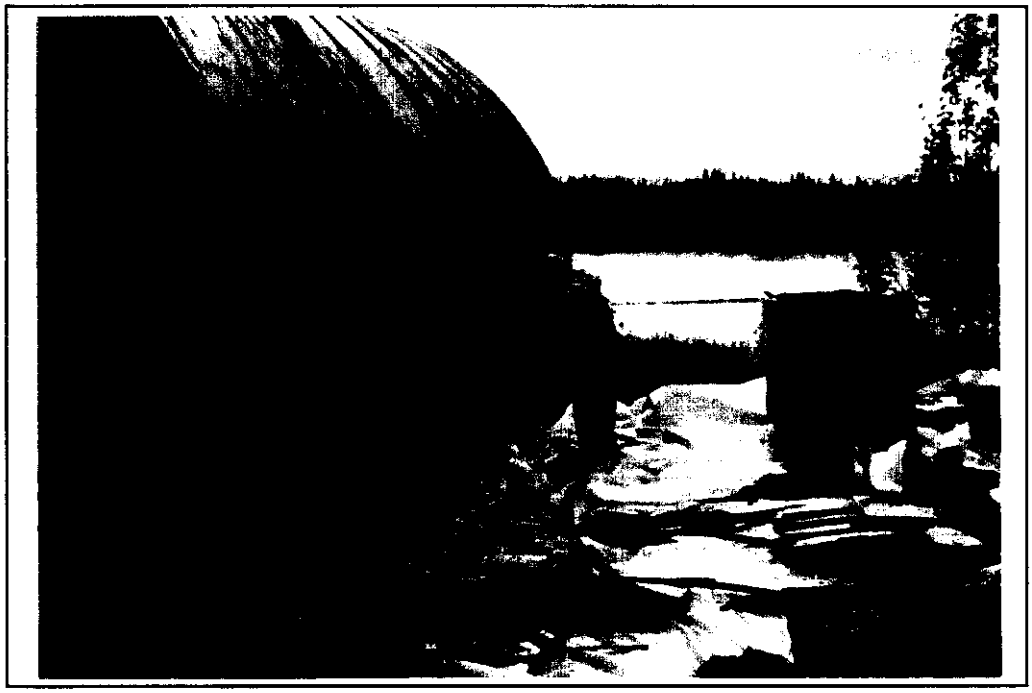
Appendix A
Photographs

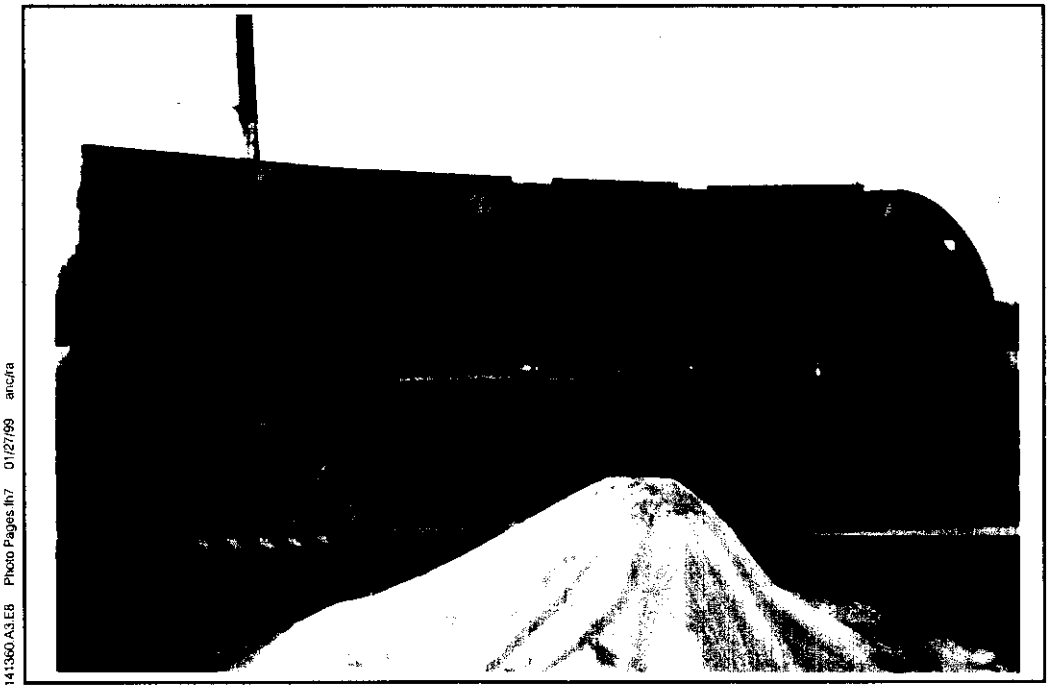


141360.A3.E8 Photo Pages th7 01/27/99 anc/ra

Photograph 9-14.
Lead hazard abatement warning sign, Building 30, facing south.



Photograph 8-23.
Lead siding removal, Building 30, facing south.



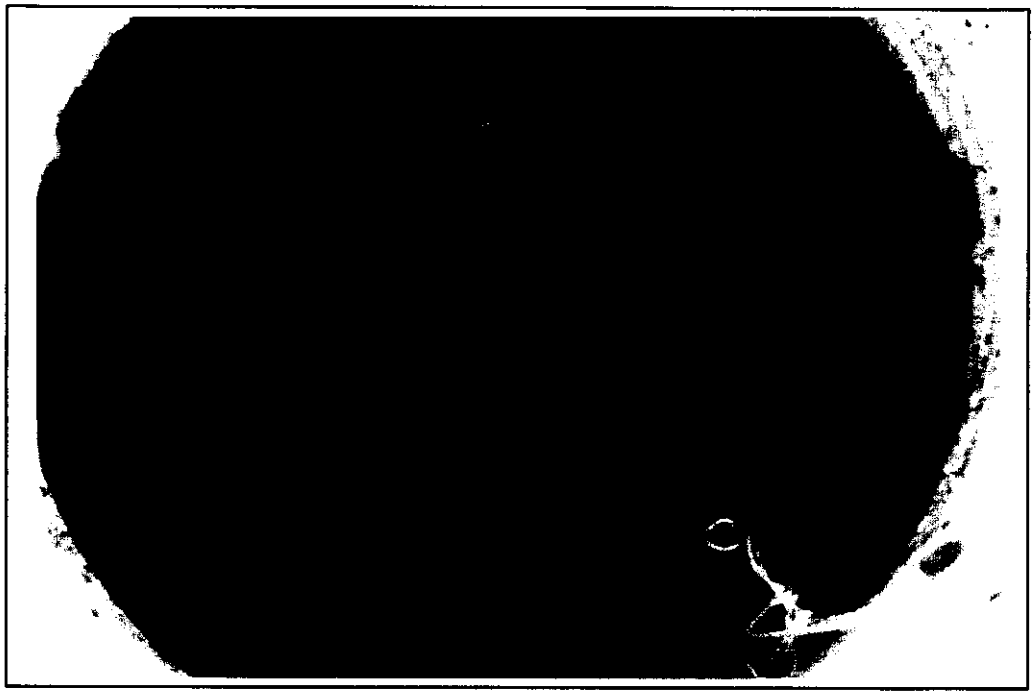
141360.A3.E8 Photo Pages.fh7 01/27/99 anc/ra

Photograph 10-23.
Lead siding shipping containers, Building 30, facing northwest.

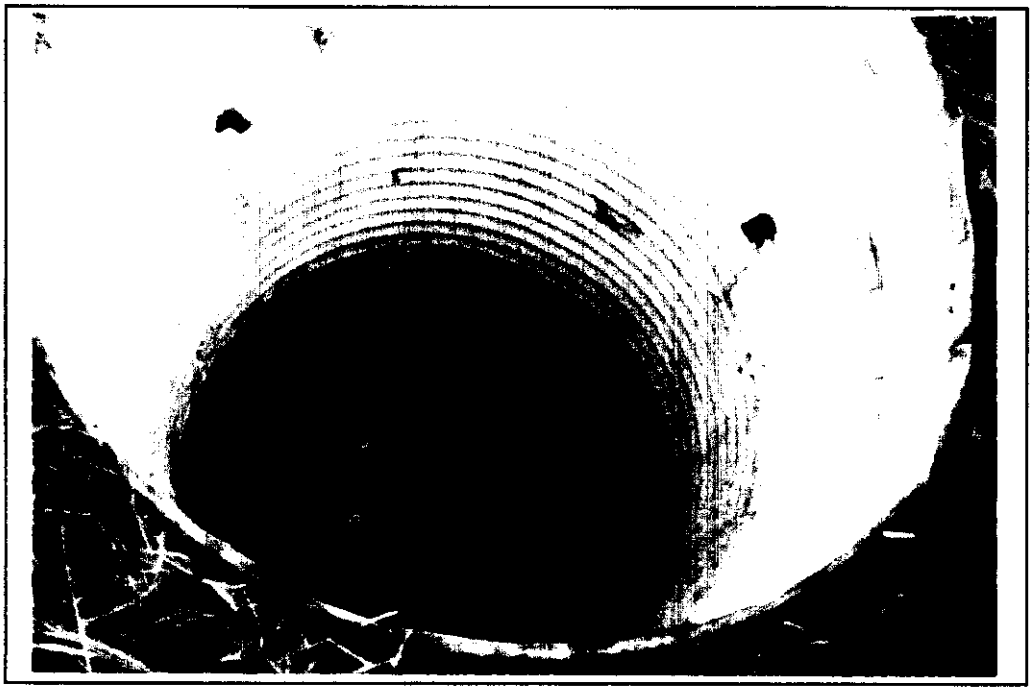
Photograph 8-19.
Soil sampling grid, west side of Building 205, facing north.

141360.A3.E8 Photo Pages.fh7 01/27/99 ancira

Photograph 10-14.
Contaminated soil stockpile, west side of Building 205, facing east.



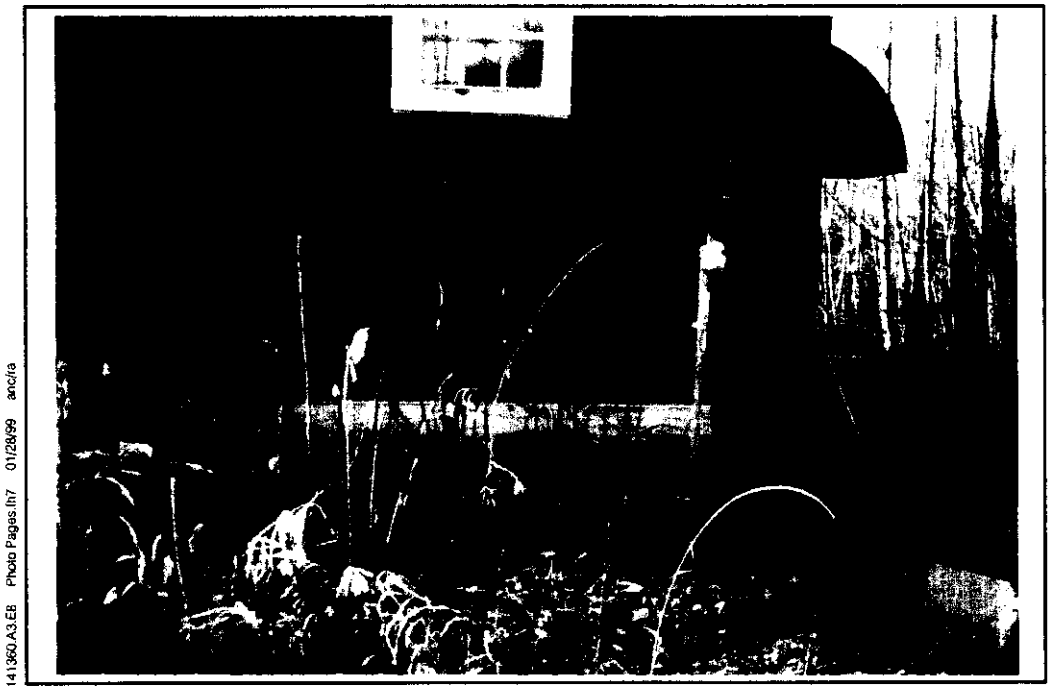
Photograph 11-6.
Sewage lift station, Building 103.



141360 A3 E8 Photo Pages.ln7 01/27/99 ancta

Photograph 11-26.
Sewage lift station, Building 105.

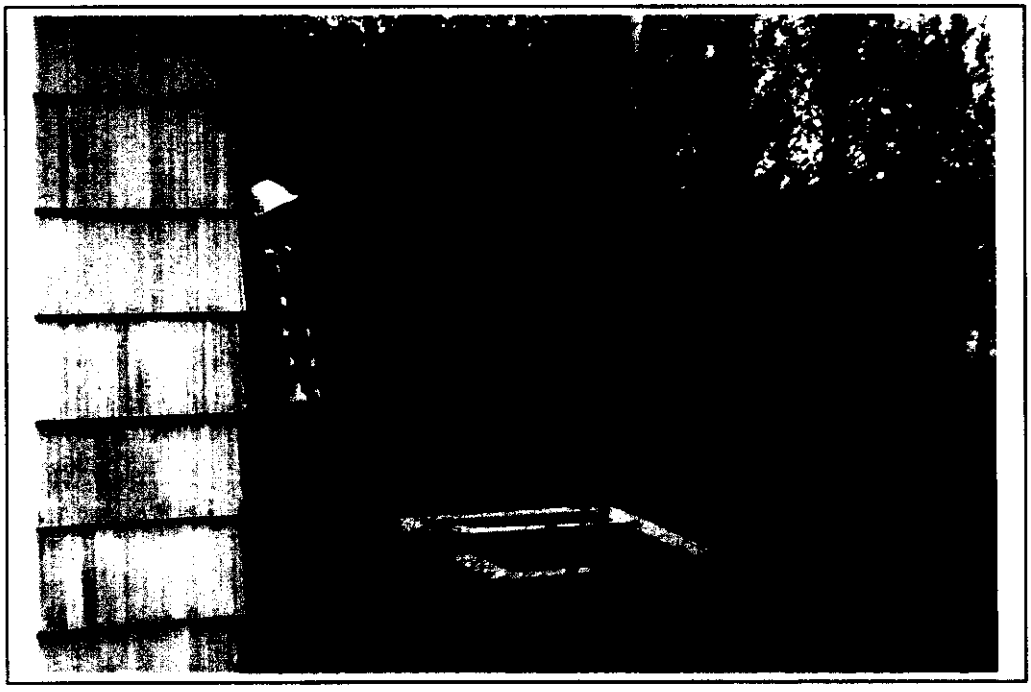
Photograph 11-4.
Septic tank excavation, east of Building 300, facing west.



141360.A3.EB Photo Pages.fh7 01/28/99 anc/ra

Photograph 24.
Soil sampling, north of Building 600, facing south.

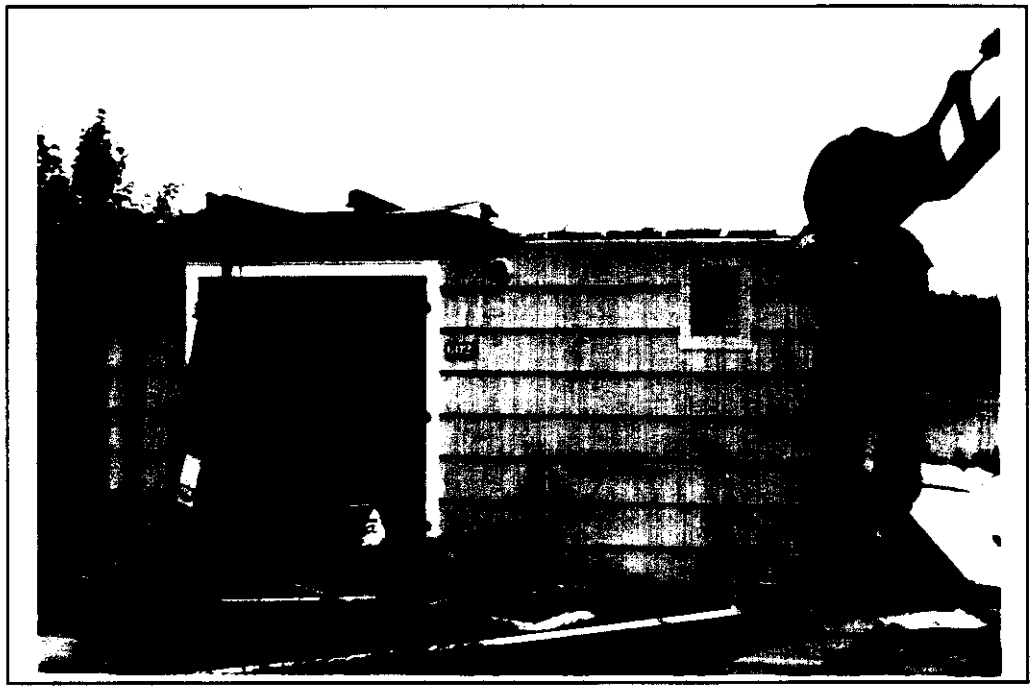
Photograph 11-9.
Setup for water well abandonment, Building 400, facing west.



141360.A3 EB Photo Pages.fh7 01/27/99 anc/fa

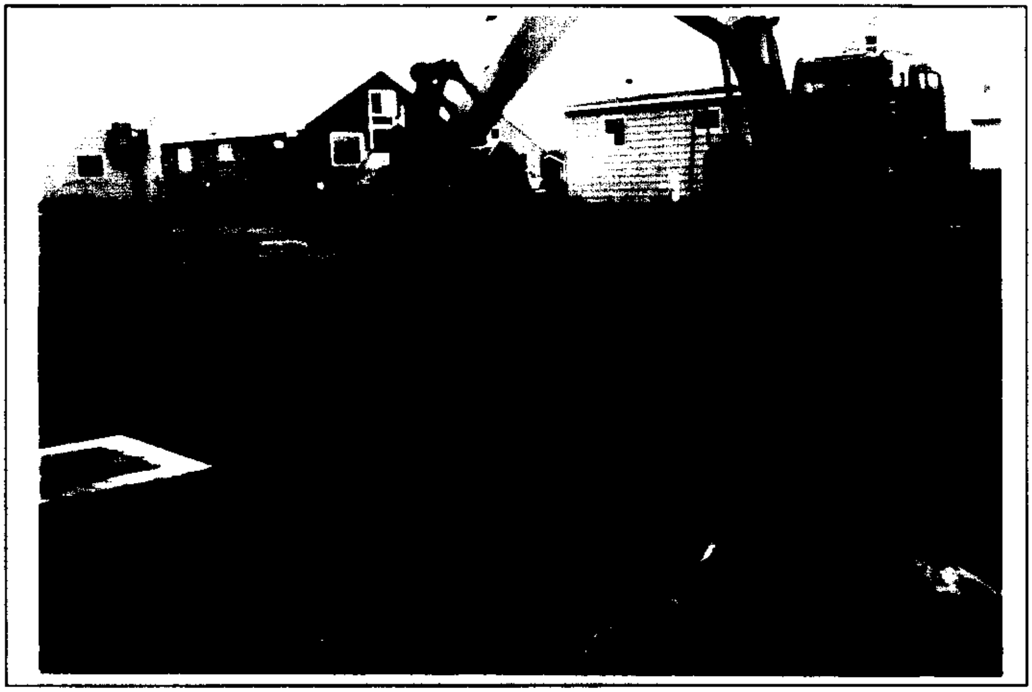
Photograph 1-23.
Water well removal, Building 602, facing east.

Photograph 9-6.
Building 602 demolition, facing south.



141360.A3.E8 Photo Pages.ln7 01/27/99 ancira

Photograph 9-7.
Building 602 demolition, facing south.



Photograph 11-15.
Excavation of concrete well box, Building 602, facing northwest.

Photograph 11-16.
Demolition of concrete well box, Building 602, facing northeast.

141360.A3.E8 Photo Pages II-7 01/28/99 arc/rd

Appendix B
Analytical Data Packages

Spill Site, Building 205

Chain of Custody Forms

Data Packages

QUALITY ANALYTICAL LABORATORIES, INC.

CHAIN OF CUSTODY RECORD AND AGREEMENT TO PERFORM SERVICES

Project #: 142314.A1.F9

Purchase Order #:

Project Name: ~~7AATANAT~~ A7SJ Management Pro.

Company Name: CH2M HILL / ANC

Project Manager or Contact & Phone #: TOM WOLF/ANC

Report Copy to: TOM WOLF/ANC

Requested Completion Date: NORMAL

Site ID:

Sample Disposal: [X] Dispose [ ] Return

☐ LGN — One Innovation Drive, Suite C, Alachua, FL 32615-9586, (904) 462-3050 FAX (904) 462-1670

☒ LRD — 5090 Caterpillar Road, Redding, CA 96003-1412, (916) 244-5227 FAX (916) 244-4109

☐ LMG — 2567 Fairlane Drive, Montgomery, AL 36116-1622, (334) 271-2440 FAX (334) 271-3428

☐ LKW — Canviro Analytical Laboratories, Inc., 50 Bathurst, Unit 12, Waterloo, Ontario, Canada N2V 2C5, (519) 747-2575 FAX (519) 747-3806

THIS AREA FOR LAB USE ONLY

Lab #	Page ___ of ___
Client Service	Price Source A P Q S
Acct Code	Test Group
Project Code	Ack. Gen.
LIMS Ver	Login / Mult.
COC Review	

Sampling: 97

Date	Time	COMP	GRAB	WATER	SOIL	CLIENT SAMPLE ID (9 CHARACTERS)	QC ID (3 CHAR)	# OF CONTAINERS	DRO	BTEX (MeOH)	GRO/BTEX (MeOH)	Lead	8260	SAMPLE REMARKS	LAB 1 ID	LAB 2 ID
8/24	1406		X		X	TAL97SS121	V	3	X		X	X		2oz WT 87.37		
8/25	1700		X		X	TAL97SS123	F	2	X	X				87.63		
8/25	1701		X		X	TAL97SS124	F	2	X	X				87.89		
8/25	1702		X		X	TAL97SS125	F	2	X	X				87.76		
8/25	1703		X		X	TAL97SS126	F	~~2~~ 1	X	~~X~~						
8/25	1704		X		X	TAL97SS127	F	1	X							
8/25	1705		X		X	TAL97SS128	F	1	X							
8/26	0830		X		X	TAL97SS129	S	3	X	X			X	2oz WT 87.61		
8/26	0831		X		X	TAL97SS130	S	3	X	X			X	87.43		
8/26	0832		X		X	TAL97SS131	S	2	X	X				87.47		
8/26	0833		X		X	TAL97SS132	S	2	X	X				87.68		

Sampled By & Title (Please sign and print name): [signature] — Date/Time: 8/24/97 1406

Relinquished By (Please sign and print name): [signature] — Date/Time: 8/[illegible]/97 0700

Received By (Please sign and print name): — Date/Time:

Relinquished By (Please sign and print name): — Date/Time:

Received By (Please sign and print name): — Date/Time:

Relinquished By (Please sign and print name): — Date/Time:

Received By (Please sign and print name): — Date/Time:

Shipped Via: UPS Fed-Ex Other ______

Shipping #: Charter > Fed-x > RDD #5519111430

HAZWRAP/NESSA: Y N

EDATA: Y N

QC LEVEL 1 2 3 OTHER ______

pH — Ice

Custody Seal — Temp

Batch Remarks: NOTE - 24 HR Turnaround on 8260 PRONTO CALL Mike Drevett/ANC ASAP

Instructions and Agreement Provisions on Reverse Side

DISTRIBUTION: Original - LAB, Yellow - LAB, Pink - Client

REV 5/95 LAB FORM 340

CH2M HILL
Analytical Services
5090 Caterpillar Road
Redding, CA
96003-1412
Tel 916.244.5227
Fax 916.244.4109

CH2MHILL

Mr. Tom Wolf
CH2M HILL/ANC
301 West Northern Lights Boulevard
Suite 601
Anchorage, AK 99503-2691

Analytical Report
FAA Tanana FST Management Program
RD920

October 8, 1997

Submitted by:

Brian Geers

Brian Geers
Project Manager/Client Services

Organic Data Qualifiers

A -- This qualifier indicates that a TIC is a suspected aldol-condensation product.

B-- This flag is used when the analyte is found in the associated blank as well as the sample. This notation indicates possible blank contamination and suggests that the data user evaluate these compounds and their amounts carefully.

C-- The "C" flag indicates the presence of this compound has been confirmed by the GC/MS analysis.

D-- This qualifier is used for all compounds identified in an analysis at a secondary dilution factor. "D" qualifiers are used only for the samples reported at more than one dilution factor.

E-- This flag indicates that the value reported exceeds the linear calibration range for that compound. Therefore, the sample should be reanalyzed at the appropriate dilution. The "E" qualified amount is an estimated concentration, and the results of the dilution will be reported on a separate Form I.

I-- This qualifier indicates that the reporting limit adjacent to the "I" qualifier has been raised. It is used when chromatographic interference prohibits detection of a compound at a level below the concentration expressed on the Form I.

J-- Indicates an estimated value. It is used when the data indicates the presence of a target compound below the reporting limit or the presence of a Tentatively Identified Compound (TIC)

N-- This qualifier indicates presumptive evidence of a compound. This flag is only used for Tentatively Identified Compounds (TIC), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the "N" qualifier is not used.

P-- This qualifier is used for pesticide/Aroclor target analytes when there is a greater than 25% difference for detected concentrations between the two columns. The lower of the two values is reported on Form I and flagged with a "P".

U-- Indicates the compound was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that compound. The reporting limit can vary from sample to sample depending on dilution factors or percent moisture adjustments when indicated.

Organic Sample ID Qualifiers

The qualifiers that may be appended to the Lab Sample ID and/or the Client Sample ID for organic analysis are defined below:

DL -- Diluted reanalysis . Indicates that the results were determined in an analysis of a secondary dilution of a sample or extract. The "DL" suffix may be followed by a digit to indicate multiple dilutions of the sample or extract. The results of more than one diluted reanalyses may be reported.

MS-- Matrix spike (may be followed by a digit to indicate multiple matrix spikes within a sample set).

MSD-- Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spikes within a sample set).

R-- Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalyses of the sample at the same dilution.

RE-- Re-extraction analysis. The sample was re-extracted and reanalyzed. May be followed by a digit to indicate multiple re-extracted analyses of the same sample at the same dilution.

Inorganic Data Qualifiers
Cations

C (concentration) Qualifier:

B -- The reported value obtained was less than the CRDL, but greater than or equal to the MDL/IDL.

U-- The value was less than the MDL/IDL or was not detected.

Q Qualifier:

E-- The reported value is estimate because of interference.

M-- Duplicate injection precision was not met.(two analyses of the sample did not agree)

N-- Spiked sample recovery not within control limits.

S-- The reported value was determined by the Method of Standard Additions (MSA)

J-- Post digestion spike for Graphite Furnace AA analyses is out of control limits (85% - 115%), while sample absorbance is less than 50% of spike absorbance.

***--** Duplicate analysis not within control limits

+-- Correlation coefficient for the MSA is less than 0.995.

M (method) Qualifier:

P-- ICP

A-- Flame AA

F-- Furnace AA

CV-- Cold Vapor

AV-- Automated Cold Vapor

NR-- Analyte was not required

C-- Manual spectrophotometric

RRL (Reliable Reporting Limit)

RRL-- The reliable reporting limit was established to qualify analytical results for which no CRDL was available, or did not apply. The RRL is a concentration approximately four times the Method Detection Limit (MDL).

Sample ID Cross-reference Table

CH2M Hill Lab Sample ID		Client Sample ID	Collect Date	Sample Matrix	Additional Description
FS = Field Sample; MSD = Matrix Spike Duplicate; MSO = Matrix Spike, Organic					
RD920001	FS	TAL97SS121V	08/24/97	Soil	
RD920002	FS	TAL97SS123F	08/25/97	Soil	
RD920003	FS	TAL97SS124F	08/25/97	Soil	
RD920004	FS	TAL97SS125F	08/25/97	Soil	
RD920005	FS	TAL97SS126F	08/25/97	Soil	
RD920006	FS	TAL97SS127F	08/25/97	Soil	
RD920007	FS	TAL97SS128F	08/25/97	Soil	
RD920008	FS	TAL97SS129S	08/26/97	Soil	
RD920009	FS	TAL97SS130S	08/26/97	Soil	
RD920010	FS	TAL97SS131S	08/26/97	Soil	
RD920011	FS	TAL97SS132S	08/26/97	Soil	

The above lab sample ID's and cross reference information apply to samples as received by the laboratory. Modifiers to the lab sample ID may be added for internal tracking purposes. Any modified sample ID will be reflected in the appropriate case narrative only.

GC/MS VOLATILE ORGANICS

CASE NARRATIVE
GC/MS VOLATILE ORGANICS

CH2M Hill Lab Reference No./SDG.: RD920

Project: FAA Tanana

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

II. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. METHOD

Preparation: SW-846 5030A
Cleanup: N/A
Analysis: SW-846 8260A

IV. PREPARATION

Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration : All acceptance criteria were met.

B. Blanks: All acceptance criteria were met.

C. Surrogates: All acceptance criteria were met.

D. Spikes: All acceptance criteria were met.

E. Samples: Due to the levels of target analytes, samples RD920008 and RD920009 were analyzed by medium level protocol. In order to report target analytes within calibration range, these samples were reanalyzed on a diluted basis. Please note the reporting limits have been adjusted accordingly.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and QAL, Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

SIGNED: Doug Barnett DATE: 9-12-97

Douglas Barnett
Resource Chemist, Organics

Sample data

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TAL97SS129S

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: RD920008

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3408

Level: (low/med) MED Date Received: 08/29/97

% Moisture: not dec. 19 Date Analyzed: 09/03/97

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	3900	U
74-87-3	Chloromethane	7700	U
75-01-4	Vinyl chloride	7700	U
74-83-9	Bromomethane	7700	U
75-00-3	Chloroethane	7700	U
75-69-4	Trichlorofluoromethane	3900	U
75-35-4	1,1-Dichloroethene	3900	U
75-09-2	Methylene chloride	3900	U
156-60-5	trans-1,2-Dichloroethene	3900	U
75-34-3	1,1-Dichloroethane	3900	U
594-20-7	2,2-Dichloropropane	3900	U
156-59-2	cis-1,2-Dichloroethene	3900	U
67-66-3	Chloroform	3900	U
74-97-5	Bromochloromethane	3900	U
71-55-6	1,1,1-Trichloroethane	3900	U
563-58-6	1,1-Dichloropropene	3900	U
56-23-5	Carbon tetrachloride	3900	U
71-43-2	Benzene	3900	U
107-06-2	1,2-Dichloroethane	3900	U
79-01-6	Trichloroethene	3900	U
78-87-5	1,2-Dichloropropane	3900	U
75-27-4	Bromodichloromethane	3900	U
74-95-3	Dibromomethane	3900	U
108-88-3	Toluene	3900	U
79-00-5	1,1,2-Trichloroethane	3900	U
142-28-9	1,3-Dichloropropane	3900	U
127-18-4	Tetrachloroethene	3900	U
124-48-1	Dibromochloromethane	3900	U
106-93-4	1,2-Dibromoethane	3900	U
108-90-7	Chlorobenzene	3900	U
630-20-6	1,1,1,2-Tetrachloroethane	3900	U
100-41-4	Ethylbenzene	3900	U
N/A	m-,p-Xylene	3900	U
95-47-6	o-Xylene	5500	
100-42-5	Styrene	3900	U
75-25-2	Bromoform	3900	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TAL97SS129S

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: RD920008

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3408

Level: (low/med) MED Date Received: 08/29/97

% Moisture: not dec. 19 Date Analyzed: 09/03/97

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
98-82-8	Isopropylbenzene	3900	U
79-34-5	1,1,2,2-Tetrachloroethane	3900	U
96-18-4	1,2,3-Trichloropropane	3900	U
103-65-1	n-Propylbenzene	3900	U
108-86-1	Bromobenzene	3900	U
108-67-8	1,3,5-Trimethylbenzene	7400	
95-49-8	2-Chlorotoluene	3900	U
106-43-4	4-Chlorotoluene	3900	U
98-06-6	tert-Butylbenzene	3900	U
95-63-6	1,2,4-Trimethylbenzene	18000	E
135-98-8	sec-Butylbenzene	3900	U
99-87-6	p-Isopropyltoluene	3900	U
541-73-1	1,3-Dichlorobenzene	3900	U
106-46-7	1,4-Dichlorobenzene	3900	U
104-51-8	n-Butylbenzene	3900	U
95-50-1	1,2-Dichlorobenzene	3900	U
96-12-8	1,2-Dibromo-3-chloropropane	3900	U
120-82-1	1,2,4-Trichlorobenzene	3900	U
87-68-3	Hexachlorobutadiene	3900	U
91-20-3	Naphthalene	31000	E
87-61-6	1,2,3-Trichlorobenzene	3900	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

97SS129SDL

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: RD920008DL

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3468

Level: (low/med) MED Date Received: 08/29/97

% Moisture: not dec. 19 Date Analyzed: 09/09/97

Column (pack/cap) CAP Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	15000	U
74-87-3	Chloromethane	31000	U
75-01-4	Vinyl chloride	31000	U
74-83-9	Bromomethane	31000	U
75-00-3	Chloroethane	31000	U
75-69-4	Trichlorofluoromethane	15000	U
75-35-4	1,1-Dichloroethene	15000	U
75-09-2	Methylene chloride	15000	U
156-60-5	trans-1,2-Dichloroethene	15000	U
75-34-3	1,1-Dichloroethane	15000	U
594-20-7	2,2-Dichloropropane	15000	U
156-59-2	cis-1,2-Dichloroethene	15000	U
67-66-3	Chloroform	15000	U
74-97-5	Bromochloromethane	15000	U
71-55-6	1,1,1-Trichloroethane	15000	U
563-58-6	1,1-Dichloropropene	15000	U
56-23-5	Carbon tetrachloride	15000	U
71-43-2	Benzene	15000	U
107-06-2	1,2-Dichloroethane	15000	U
79-01-6	Trichloroethene	15000	U
78-87-5	1,2-Dichloropropane	15000	U
75-27-4	Bromodichloromethane	15000	U
74-95-3	Dibromomethane	15000	U
108-88-3	Toluene	15000	U
79-00-5	1,1,2-Trichloroethane	15000	U
142-28-9	1,3-Dichloropropane	15000	U
127-18-4	Tetrachloroethene	15000	U
124-48-1	Dibromochloromethane	15000	U
106-93-4	1,2-Dibromoethane	15000	U
108-90-7	Chlorobenzene	15000	U
630-20-6	1,1,1,2-Tetrachloroethane	15000	U
100-41-4	Ethylbenzene	15000	U
N/A	m-,p-Xylene	15000	U
95-47-6	o-Xylene	15000	U
100-42-5	Styrene	15000	U
75-25-2	Bromoform	15000	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

97SS129SDL

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: RD920008DL

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3468

Level: (low/med) MED Date Received: 08/29/97

% Moisture: not dec. 19 Date Analyzed: 09/09/97

Column: (pack/cap) CAP Dilution Factor: 4.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
98-82-8	Isopropylbenzene	15000	U
79-34-5	1,1,2,2-Tetrachloroethane	15000	U
96-18-4	1,2,3-Trichloropropane	15000	U
103-65-1	n-Propylbenzene	15000	U
108-86-1	Bromobenzene	15000	U
108-67-8	1,3,5-Trimethylbenzene	15000	U
95-49-8	2-Chlorotoluene	15000	U
106-43-4	4-Chlorotoluene	15000	U
98-06-6	tert-Butylbenzene	15000	U
95-63-6	1,2,4-Trimethylbenzene	28000	D
135-98-8	sec-Butylbenzene	15000	U
99-87-6	p-Isopropyltoluene	15000	U
541-73-1	1,3-Dichlorobenzene	15000	U
106-46-7	1,4-Dichlorobenzene	15000	U
104-51-8	n-Butylbenzene	15000	U
95-50-1	1,2-Dichlorobenzene	15000	U
96-12-8	1,2-Dibromo-3-chloropropane	15000	U
120-82-1	1,2,4-Trichlorobenzene	15000	U
87-68-3	Hexachlorobutadiene	15000	U
91-20-3	Naphthalene	60000	D
87-61-6	1,2,3-Trichlorobenzene	15000	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TAL97SS130S

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: RD920009

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3409

Level: (low/med) MED Date Received: 08/29/97

% Moisture: not dec. 18 Date Analyzed: 09/03/97

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	3800	U
74-87-3	Chloromethane	7600	U
75-01-4	Vinyl chloride	7600	U
74-83-9	Bromomethane	7600	U
75-00-3	Chloroethane	7600	U
75-69-4	Trichlorofluoromethane	3800	U
75-35-4	1,1-Dichloroethene	3800	U
75-09-2	Methylene chloride	3800	U
156-60-5	trans-1,2-Dichloroethene	3800	U
75-34-3	1,1-Dichloroethane	3800	U
594-20-7	2,2-Dichloropropane	3800	U
156-59-2	cis-1,2-Dichloroethene	3800	U
67-66-3	Chloroform	3800	U
74-97-5	Bromochloromethane	3800	U
71-55-6	1,1,1-Trichloroethane	3800	U
563-58-6	1,1-Dichloropropene	3800	U
56-23-5	Carbon tetrachloride	3800	U
71-43-2	Benzene	3800	U
107-06-2	1,2-Dichloroethane	3800	U
79-01-6	Trichloroethene	3800	U
78-87-5	1,2-Dichloropropane	3800	U
75-27-4	Bromodichloromethane	3800	U
74-95-3	Dibromomethane	3800	U
108-88-3	Toluene	3800	U
79-00-5	1,1,2-Trichloroethane	3800	U
142-28-9	1,3-Dichloropropane	3800	U
127-18-4	Tetrachloroethene	3800	U
124-48-1	Dibromochloromethane	3800	U
106-93-4	1,2-Dibromoethane	3800	U
108-90-7	Chlorobenzene	3800	U
630-20-6	1,1,1,2-Tetrachloroethane	3800	U
100-41-4	Ethylbenzene	3800	U
N/A	m-,p-Xylene	3800	U
95-47-6	o-Xylene	5100	
100-42-5	Styrene	3800	U
75-25-2	Bromoform	3800	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

TAL97SS130S

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: RD920009

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3409

Level: (low/med) MED Date Received: 08/29/97

% Moisture: not dec. 18 Date Analyzed: 09/03/97

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
98-82-8	Isopropylbenzene	3800	U
79-34-5	1,1,2,2-Tetrachloroethane	3800	U
96-18-4	1,2,3-Trichloropropane	3800	U
103-65-1	n-Propylbenzene	3800	U
108-86-1	Bromobenzene	3800	U
108-67-8	1,3,5-Trimethylbenzene	7700	
95-49-8	2-Chlorotoluene	3800	U
106-43-4	4-Chlorotoluene	3800	U
98-06-6	tert-Butylbenzene	3800	U
95-63-6	1,2,4-Trimethylbenzene	17000	E
135-98-8	sec-Butylbenzene	3800	U
99-87-6	p-Isopropyltoluene	3800	U
541-73-1	1,3-Dichlorobenzene	3800	U
106-46-7	1,4-Dichlorobenzene	3800	U
104-51-8	n-Butylbenzene	3800	U
95-50-1	1,2-Dichlorobenzene	3800	U
96-12-8	1,2-Dibromo-3-chloropropane	3800	U
120-82-1	1,2,4-Trichlorobenzene	3800	U
87-68-3	Hexachlorobutadiene	3800	U
91-20-3	Naphthalene	29000	E
87-61-6	1,2,3-Trichlorobenzene	3800	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

97SS130SDL

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: RD920009DL

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3482

Level: (low/med) MED Date Received: 08/29/97

% Moisture: not dec. 18 Date Analyzed: 09/09/97

Column: (pack/cap) CAP Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	19000	U
74-87-3	Chloromethane	38000	U
75-01-4	Vinyl chloride	38000	U
74-83-9	Bromomethane	38000	U
75-00-3	Chloroethane	38000	U
75-69-4	Trichlorofluoromethane	19000	U
75-35-4	1,1-Dichloroethene	19000	U
75-09-2	Methylene chloride	19000	U
156-60-5	trans-1,2-Dichloroethene	19000	U
75-34-3	1,1-Dichloroethane	19000	U
594-20-7	2,2-Dichloropropane	19000	U
156-59-2	cis-1,2-Dichloroethene	19000	U
67-66-3	Chloroform	19000	U
74-97-5	Bromochloromethane	19000	U
71-55-6	1,1,1-Trichloroethane	19000	U
563-58-6	1,1-Dichloropropene	19000	U
56-23-5	Carbon tetrachloride	19000	U
71-43-2	Benzene	19000	U
107-06-2	1,2-Dichloroethane	19000	U
79-01-6	Trichloroethene	19000	U
78-87-5	1,2-Dichloropropane	19000	U
75-27-4	Bromodichloromethane	19000	U
74-95-3	Dibromomethane	19000	U
108-88-3	Toluene	19000	U
79-00-5	1,1,2-Trichloroethane	19000	U
142-28-9	1,3-Dichloropropane	19000	U
127-18-4	Tetrachloroethene	19000	U
124-48-1	Dibromochloromethane	19000	U
106-93-4	1,2-Dibromoethane	19000	U
108-90-7	Chlorobenzene	19000	U
630-20-6	1,1,1,2-Tetrachloroethane	19000	U
100-41-4	Ethylbenzene	19000	U
N/A	m-,p-Xylene	19000	U
95-47-6	o-Xylene	19000	U
100-42-5	Styrene	19000	U
75-25-2	Bromoform	19000	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

97SS130SDL

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: RD920009DL

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3482

Level: (low/med) MED Date Received: 08/29/97

% Moisture: not dec. 18 Date Analyzed: 09/09/97

Column: (pack/cap) CAP Dilution Factor: 5.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
98-82-8	Isopropylbenzene	19000	U
79-34-5	1,1,2,2-Tetrachloroethane	19000	U
96-18-4	1,2,3-Trichloropropane	19000	U
103-65-1	n-Propylbenzene	19000	U
108-86-1	Bromobenzene	19000	U
108-67-8	1,3,5-Trimethylbenzene	19000	U
95-49-8	2-Chlorotoluene	19000	U
106-43-4	4-Chlorotoluene	19000	U
98-06-6	tert-Butylbenzene	19000	U
95-63-6	1,2,4-Trimethylbenzene	17000	DJ
135-98-8	sec-Butylbenzene	19000	U
99-87-6	p-Isopropyltoluene	19000	U
541-73-1	1,3-Dichlorobenzene	19000	U
106-46-7	1,4-Dichlorobenzene	19000	U
104-51-8	n-Butylbenzene	19000	U
95-50-1	1,2-Dichlorobenzene	19000	U
96-12-8	1,2-Dibromo-3-chloropropane	19000	U
120-82-1	1,2,4-Trichlorobenzene	19000	U
87-68-3	Hexachlorobutadiene	19000	U
91-20-3	Naphthalene	43000	D
87-61-6	1,2,3-Trichlorobenzene	19000	U

QC Summary

2B
SOIL VOLATILE SURROGATE RECOVERY

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Level:(low/med) MED

	EPA SAMPLE NO.	S1 (TOL)#	S2 (BFB)#	S3 (DBF)#	S4 (DCA)#	TOT OUT
01	97SS129SDL	102	107	98	91	0
02	97SS130SDL	88	85	113	91	0
03	TAL97SS129S	102	116	97	100	0
04	TAL97SS130S	102	114	98	105	0
05	J0903M01-BLK	98	90	101	96	0
06	J0908M01-BLK	102	108	111	111	0
07	J0909M01-BLK	86	79	116	85	0

		QC LIMITS
S1 (TOL)	= Toluene-d8	(81-113)
S2 (BFB)	= Bromofluorobenzene	(80-117)
S3 (DBF)	= Dibromofluoromethane	(80-120)
S4 (DCA)	= 1,2-Dichloroethane-d4	(62-139)

Column to be used to flag recovery values

* Values outside of contract required QC limits

D Surrogates diluted out

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Lab File ID: 97M3VO3405 Lab Sample ID: J0903M01-BLK

Date Analyzed: 09/03/97 Time Analyzed: 2016

Matrix: (soil/water) SOIL Level: (low/med) MED

Instrument ID: INCOS-M3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	TAL97SS129S	RD920008	97M3VO3408	2226
02	TAL97SS130S	RD920009	97M3VO3409	2304

COMMENTS: CLP,RD887,,J0903M01-BLK,M,S,J0903M01-BLK,V,BLANK, CAP

4A
VOLATILE METHOD BLANK SUMMARY

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Lab File ID: 97M3VO3467 Lab Sample ID: J0908M01-BLK

Date Analyzed: 09/09/97 Time Analyzed: 0210

Matrix: (soil/water) SOIL Level:(low/med) MED

Instrument ID: INCOS-M3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	97SS129SDL	RD920008DL	97M3VO3468	0247

COMMENTS: CLP,RD920,,J0908M01-BLK,M,S,J0908M01-BLK,V,BLANK,
CAP

4A

VOLATILE METHOD BLANK SUMMARY

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Lab File ID: 97M3VO3480 Lab Sample ID: J0909M01-BLK

Date Analyzed: 09/09/97 Time Analyzed: 1655

Matrix: (soil/water) SOIL Level:(low/med) MED

Instrument ID: INCOS-M3

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES, MS AND MSD:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	TIME ANALYZED
01	97SS130SDL	RD920009DL	97M3VO3482	1804

COMMENTS: CLP,RD920,,J0909M01-BLK,L,W,J0909M01-BLK,V,BLK, CAP

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Lab File ID: 97M3VO3394 BFB Injection Date: 09/03/97

Instrument ID: INCOS-M3 BFB Injection Time: 0902

Matrix:(soil/water) Level:(low/med) Column:(pack/cap)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	24.4
75	30.0 - 60.0% of mass 95	47.7
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.3
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	85.2
175	5.0 - 9.0% of mass 174	5.3 (6.2)1
176	Greater than 95.0%, but less than 101.0% of mass 174	84.4 (99.1)1
177	5.0 - 9.0% of mass 176	4.8 (5.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD010	VOA_010_STND	97M3VO3395	09/03/97	0924
02	VSTD001	VOA_001_STND	97M3VO3397	09/03/97	1050
03	VSTD005	VOA_005_STND	97M3VO3398	09/03/97	1128
04	VSTD020	VOA_020_STND	97M3VO3399	09/03/97	1205
05	VSTD0.3	VOA_0.3_STND	97M3VO3400	09/03/97	1549

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Lab File ID: 97M3VO3402 BFB Injection Date: 09/03/97

Instrument ID: INCOS-M3 BFB Injection Time: 1713

Matrix:(soil/water) Level:(low/med) Column:(pack/cap)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	24.6
75	30.0 - 60.0% of mass 95	44.6
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	7.0
173	Less than 2.0% of mass 174	0.0 (0.0)1
174	Greater than 50.0% of mass 95	86.6
175	5.0 - 9.0% of mass 174	5.8 (6.7)1
176	Greater than 95.0%, but less than 101.0% of mass 174	83.0 (95.9)1
177	5.0 - 9.0% of mass 176	5.1 (6.2)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD010	VOA_010_STND	97M3VO3403	09/03/97	1739
02	J0903M01-BLK	J0903M01-BLK	97M3VO3405	09/03/97	2016
03	TAL97SS129S	RD920008	97M3VO3408	09/03/97	2226
04	TAL97SS130S	RD920009	97M3VO3409	09/03/97	2304

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Lab File ID: 97M3VO3452 BFB Injection Date: 09/08/97

Instrument ID: INCOS-M3 BFB Injection Time: 1639

Matrix:(soil/water) Level:(low/med) Column:(pack/cap)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	22.4
75	30.0 - 60.0% of mass 95	44.1
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.7
173	Less than 2.0% of mass 174	0.2 (0.2)1
174	Greater than 50.0% of mass 95	81.1
175	5.0 - 9.0% of mass 174	6.1 (7.5)1
176	Greater than 95.0%, but less than 101.0% of mass 174	78.3 (96.5)1
177	5.0 - 9.0% of mass 176	5.2 (6.7)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.3	VOA_0.3_STND	97M3VO3453	09/08/97	1711
02	VSTD001	VOA_001_STND	97M3VO3454	09/08/97	1752
03	VSTD005	VOA_005_STND	97M3VO3455	09/08/97	1829
04	VSTD010	VOA_010_STND	97M3VO3456	09/08/97	1904
05	VSTD020	VOA_020_STND	97M3VO3457	09/08/97	1942
06	J0908M01-BLK	J0908M01-BLK	97M3VO3467	09/09/97	0210
07	97SS129SDL	RD920008DL	97M3VO3468	09/09/97	0247

5A

VOLATILE ORGANIC GC/MS TUNING AND MASS CALIBRATION - BROMOFLUOROBENZENE (BFB)

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Lab File ID: 97M3VO3470 BFB Injection Date: 09/09/97

Instrument ID: INCOS-M3 BFB Injection Time: 0813

Matrix:(soil/water) Level:(low/med) Column:(pack/cap)

m/e	ION ABUNDANCE CRITERIA	% RELATIVE ABUNDANCE
50	15.0 - 40.0% of mass 95	27.7
75	30.0 - 60.0% of mass 95	50.8
95	Base peak, 100% relative abundance	100.0
96	5.0 - 9.0% of mass 95	6.8
173	Less than 2.0% of mass 174	0.1 (0.1)1
174	Greater than 50.0% of mass 95	72.4
175	5.0 - 9.0% of mass 174	5.2 (7.2)1
176	Greater than 95.0%, but less than 101.0% of mass 174	70.4 (97.3)1
177	5.0 - 9.0% of mass 176	4.6 (6.6)2

1-Value is % mass 174 2-Value is % mass 176

THIS TUNE APPLIES TO THE FOLLOWING SAMPLES, MS, MSD, BLANKS, AND STANDARDS:

	EPA SAMPLE NO.	LAB SAMPLE ID	LAB FILE ID	DATE ANALYZED	TIME ANALYZED
01	VSTD0.3	VOA_0.3_STND	97M3VO3474	09/09/97	1206
02	VSTD020	VOA_020_STND	97M3VO3476	09/09/97	1322
03	VSTD010	VOA_010_STND	97M3VO3477	09/09/97	1359
04	VSTD005	VOA_005_STND	97M3VO3478	09/09/97	1512
05	VSTD001	VOA_001_STND	97M3VO3479	09/09/97	1558
06	J0909M01-BLK	J0909M01-BLK	97M3VO3480	09/09/97	1655
07	97SS130SDL	RD920009DL	97M3VO3482	09/09/97	1804

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Lab File ID (Standard): 97M3VO3403 Date Analyzed: 09/03/97

Instrument ID: INCOS-M3 Time Analyzed: 1739

GC Column: CAP ID: 0.530(mm) Heated Purge: (Y/N) N

		IS1(FBZ) AREA	#	RT	#	IS2(DCB) AREA	#	RT	#	IS3(CBZ) AREA	#	RT	#
	12 HOUR STD	477000		11.00		145000		20.30		334000		16.07	
	UPPER LIMIT	954000		11.50		290000		20.80		668000		16.57	
	LOWER LIMIT	238500		10.50		72500		19.80		167000		15.57	
	EPA SAMPLE NO.												
01	TAL97SS129S	598000		11.00		182000		20.30		409000		16.07	
02	TAL97SS130S	626000		10.99		196000		20.29		422000		16.05	
03	J0903M01-BLK	557000		10.99		210000		20.29		403000		16.05	

IS1 (FBZ) = Fluorobenzene
IS2 (DCB) = 1,4-Dichlorobenzene-d4
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Lab File ID (Standard): 97M3VO3456 Date Analyzed: 09/08/97

Instrument ID: INCOS-M3 Time Analyzed: 1904

GC Column: CAP ID: 0.530(mm) Heated Purge: (Y/N) N

		IS1(FBZ) AREA	#	RT	#	IS2(DCB) AREA	#	RT	#	IS3(CBZ) AREA	#	RT	#
	12 HOUR STD	726000		11.05		235000		20.34		544000		16.10	
	UPPER LIMIT	1452000		11.55		470000		20.84		1088000		16.60	
	LOWER LIMIT	363000		10.55		117500		19.84		272000		15.60	
	EPA SAMPLE NO.												
01	97SS129SDL	491000		11.02		157000		20.32		340000		16.09	
02	J0908M01-BLK	411000		11.04		120000		20.32		282000		16.09	

IS1 (FBZ) = Fluorobenzene
IS2 (DCB) = 1,4-Dichlorobenzene-d4
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

8A

VOLATILE INTERNAL STANDARD AREA AND RT SUMMARY

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Lab File ID (Standard): 97M3VO3477 Date Analyzed: 09/09/97

Instrument ID: INCOS-M3 Time Analyzed: 1359

GC Column: CAP ID: 0.530(mm) Heated Purge: (Y/N) N

		IS1(FBZ) AREA	#	RT	#	IS2(DCB) AREA	#	RT	#	IS3(CBZ) AREA	#	RT	#
	12 HOUR STD	548000		11.04		167000		20.32		389000		16.09	
	UPPER LIMIT	1096000		11.54		334000		20.82		778000		16.59	
	LOWER LIMIT	274000		10.54		83500		19.82		194500		15.59	
	EPA SAMPLE NO.												
01	97SS130SDL	639000		11.04		214000		20.35		471000		16.10	
02	J0909M01-BLK	540000		11.02		184000		20.32		390000		16.09	

IS1 (FBZ) = Fluorobenzene
IS2 (DCB) = 1,4-Dichlorobenzene-d4
IS3 (CBZ) = Chlorobenzene-d5

AREA UPPER LIMIT = + 100% of internal standard area.
AREA LOWER LIMIT = - 50% of internal standard area.
RT UPPER LIMIT = +0.50 minutes of internal standard RT.
RT LOWER LIMIT = -0.50 minutes of internal standard RT.

Column used to flag values outside QC limits with an asterisk.
* Values outside of QC limits.

Standards data

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Instrument ID: INCOS-M3 Calibration Date(s): 09/03/97 09/03/97

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) CAP

Min $\overline{RRF}$ for SPCC(#) = 0.300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF0.3= 97M3VO3400 RRF1 = 97M3VO3397
RRF5 = 97M3VO3398 RRF10 = 97M3VO3395 RRF20 = 97M3VO3399

COMPOUND		RRF0.3	RRF1	RRF5	RRF10	RRF20	$\overline{RRF}$	% RSD	
Dichlorodifluoromethane		0.325	0.341	0.406	0.461	0.351	0.377	14.9	
Chloromethane	#	0.556	0.572	0.523	0.619	0.456	0.545	11.1	#
Vinyl chloride	*	0.486	0.517	0.487	0.537	0.399	0.485	10.9	*
Bromomethane		0.281	0.318	0.310	0.333	0.260	0.300	9.8	
Chloroethane		0.212	0.218	0.202	0.229	0.165	0.205	12.0	
Trichlorofluoromethane		0.552	0.557	0.508	0.570	0.428	0.523	11.1	
1,1-Dichloroethene	*	0.291	0.301	0.269	0.304	0.230	0.279	11.0	*
Methylene chloride		0.400	0.412	0.328	0.347	0.280	0.353	15.3	
trans-1,2-Dichloroethene		0.318	0.351	0.325	0.358	0.278	0.326	9.7	
1,1-Dichloroethane	#	0.672	0.743	0.696	0.780	0.601	0.698	9.8	#
2,2-Dichloropropane		0.355	0.380	0.381	0.486	0.379	0.396	13.0	
cis-1,2-Dichloroethene		0.328	0.389	0.359	0.395	0.304	0.355	11.0	
Chloroform	*	0.674	0.724	0.627	0.705	0.537	0.653	11.4	*
Bromochloromethane		0.137	0.165	0.143	0.163	0.131	0.148	10.4	
1,1,1-Trichloroethane		0.459	0.500	0.476	0.560	0.431	0.485	10.1	
1,1-Dichloropropene		0.138	0.165	0.153	0.170	0.133	0.152	10.7	
Carbon tetrachloride		0.409	0.437	0.430	0.485	0.364	0.425	10.4	
Benzene		1.238	1.356	1.228	1.326	0.985	1.227	11.9	
1,2-Dichloroethane		0.385	0.442	0.359	0.419	0.327	0.386	11.9	
Trichloroethene		0.351	0.404	0.385	0.430	0.331	0.380	10.5	
1,2-Dichloropropane	*	0.342	0.406	0.381	0.430	0.338	0.379	10.5	*
Bromodichloromethane		0.401	0.465	0.437	0.506	0.389	0.440	10.8	
Dibromomethane		0.144	0.180	0.157	0.185	0.147	0.163	11.6	
Toluene	*	0.764	0.838	0.717	0.813	0.615	0.749	11.8	*
1,1,2-Trichloroethane		0.202	0.273	0.250	0.274	0.231	0.246	12.4	
1,3-Dichloropropane		0.413	0.521	0.463	0.497	0.418	0.462	10.3	
Tetrachloroethene		0.595	0.621	0.576	0.608	0.481	0.576	9.7	
Dibromochloromethane		0.293	0.365	0.358	0.396	0.332	0.349	11.1	
1,2-Dibromoethane		0.220	0.278	0.259	0.286	0.248	0.258	10.1	
Chlorobenzene	#	1.191	1.234	1.138	1.194	0.954	1.142	9.7	#
1,1,1,2-Tetrachloroethane		0.372	0.422	0.405	0.432	0.358	0.398	8.0	
Ethylbenzene	*	1.996	2.163	2.032	2.097	1.631	1.984	10.4	*
m-,p-Xylene		0.789	0.814	0.760	0.785	0.616	0.753	10.5	
o-Xylene		0.662	0.785	0.742	0.772	0.619	0.716	10.1	
Styrene		1.056	1.246	1.168	1.212	0.962	1.129	10.4	
Bromoform	#	0.170	0.202	0.193	0.221	0.185	0.194	9.8	#
Isopropylbenzene		1.722	1.903	1.844	1.923	1.490	1.776	10.0	
1,1,2,2-Tetrachloroethane	#	0.542	0.660	0.571	0.640	0.567	0.596	8.6	#
1,2,3-Trichloropropane		0.363	0.462	0.379	0.415	0.392	0.402	9.6	

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VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Instrument ID: INCOS-M3 Calibration Date(s): 09/03/97 09/03/97

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) CAP

Min $\overline{RRF}$ for SPCC(#) = 0.300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF0.3= 97M3VO3400 RRF1 = 97M3VO3397
RRF5 = 97M3VO3398 RRF10 = 97M3VO3395 RRF20 = 97M3VO3399

COMPOUND	RRF0.3	RRF1	RRF5	RRF10	RRF20	$\overline{RRF}$	% RSD
n-Propylbenzene	1.085	1.184	1.145	1.187	0.989	1.118	7.4
Bromobenzene	0.482	0.502	0.461	0.494	0.398	0.467	8.9
1,3,5-Trimethylbenzene	3.423	3.538	3.361	3.382	2.776	3.296	9.1
2-Chlorotoluene	1.001	1.056	0.983	1.008	0.848	0.979	8.0
4-Chlorotoluene	1.022	1.034	0.973	0.995	0.834	0.972	8.3
tert-Butylbenzene	3.353	3.643	3.452	3.537	2.856	3.368	9.1
1,2,4-Trimethylbenzene	3.310	3.451	3.300	3.278	2.703	3.208	9.1
sec-Butylbenzene	4.706	4.931	4.715	4.783	3.731	4.573	10.5
p-Isopropyltoluene	3.905	3.828	3.712	3.764	2.967	3.635	10.5
1,3-Dichlorobenzene	1.865	2.062	1.842	1.894	1.557	1.844	9.9
1,4-Dichlorobenzene	2.039	2.011	1.813	1.882	1.557	1.860	10.4
n-Butylbenzene	4.181	4.147	3.991	3.929	3.102	3.870	11.4
1,2-Dichlorobenzene	1.642	1.755	1.563	1.624	1.347	1.586	9.5
1,2-Dibromo-3-chloropropane	0.043	0.084	0.077	0.097	0.092	0.079	27.0
1,2,4-Trichlorobenzene	1.151	1.181	1.075	1.066	0.911	1.077	9.7
Hexachlorobutadiene *	1.086	1.000	0.887	0.918	0.721	0.922	14.8*
Naphthalene	0.816	0.786	0.775	0.715	0.720	0.762	5.7
1,2,3-Trichlorobenzene	0.908	0.966	0.797	0.779	0.696	0.829	13.0
Toluene-d8 - SS	1.405	1.435	1.391	1.222	1.069	1.304	11.9
4-Bromofluorobenzene - SS	1.319	1.190	1.169	1.083	0.968	1.146	11.4
1,2-Dichloroethane-d4 - SS	0.031	0.047	0.048	0.045	0.040	0.042	16.6
Dibromofluoromethane - SS	0.273	0.326	0.308	0.287	0.243	0.287	11.2

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Instrument ID: INCOS-M3 Calibration Date(s): 09/08/97 09/08/97

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) CAP

Min $\overline{RRF}$ for SPCC(#) = 0.300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF0.3= 97M3VO3453 RRF1 = 97M3VO3454
RRF5 = 97M3VO3455 RRF10 = 97M3VO3456 RRF20 = 97M3VO3457

COMPOUND	RRF0.3	RRF1	RRF5	RRF10	RRF20	$\overline{RRF}$	% RSD
Dichlorodifluoromethane	0.292	0.354	0.324	0.337	0.327	0.327	6.9
# Chloromethane	0.470	0.476	0.437	0.437	0.449	0.454	4.0#
* Vinyl chloride	0.394	0.428	0.397	0.374	0.384	0.395	5.2*
Bromomethane	0.248	0.259	0.248	0.238	0.230	0.245	4.5
Chloroethane	0.176	0.193	0.163	0.152	0.146	0.166	11.4
Trichlorofluoromethane	0.442	0.423	0.410	0.348	0.340	0.393	11.7
* 1,1-Dichloroethene	0.257	0.246	0.225	0.222	0.221	0.234	7.0*
Methylene chloride	0.305	0.301	0.270	0.260	0.243	0.276	9.7
trans-1,2-Dichloroethene	0.307	0.285	0.293	0.286	0.275	0.289	4.1
# 1,1-Dichloroethane	0.626	0.613	0.550	0.582	0.562	0.587	5.5#
2,2-Dichloropropane	0.417	0.422	0.407	0.417	0.412	0.415	1.4
cis-1,2-Dichloroethene	0.338	0.343	0.312	0.307	0.287	0.317	7.3
* Chloroform	0.647	0.579	0.528	0.522	0.487	0.553	11.2*
Bromochloromethane	0.127	0.134	0.123	0.121	0.112	0.123	6.6
1,1,1-Trichloroethane	0.482	0.450	0.428	0.435	0.417	0.442	5.7
1,1-Dichloropropene	0.140	0.126	0.129	0.133	0.127	0.131	4.4
Carbon tetrachloride	0.395	0.360	0.356	0.364	0.344	0.364	5.2
Benzene	1.172	1.146	1.037	1.034	0.911	1.060	9.8
1,2-Dichloroethane	0.337	0.320	0.274	0.276	0.261	0.294	11.2
Trichloroethene	0.354	0.356	0.337	0.343	0.327	0.343	3.5
* 1,2-Dichloropropane	0.338	0.355	0.324	0.334	0.315	0.333	4.5*
Bromodichloromethane	0.375	0.383	0.361	0.367	0.343	0.366	4.2
Dibromomethane	0.142	0.144	0.128	0.131	0.123	0.134	6.8
* Toluene	0.791	0.766	0.648	0.656	0.594	0.691	12.1*
1,1,2-Trichloroethane	0.211	0.226	0.190	0.205	0.202	0.207	6.4
1,3-Dichloropropane	0.405	0.424	0.353	0.368	0.358	0.382	8.2
Tetrachloroethene	0.539	0.565	0.470	0.486	0.474	0.507	8.4
Dibromochloromethane	0.261	0.296	0.260	0.283	0.282	0.276	5.6
1,2-Dibromoethane	0.213	0.233	0.203	0.215	0.214	0.216	5.0
# Chlorobenzene	1.072	1.070	0.936	0.975	0.935	0.998	6.9#
1,1,1,2-Tetrachloroethane	0.328	0.361	0.309	0.330	0.323	0.330	5.8
* Ethylbenzene	1.828	1.975	1.670	1.664	1.561	1.740	9.3*
m-,p-Xylene	0.721	0.778	0.633	0.646	0.591	0.674	11.1
o-Xylene	0.662	0.734	0.600	0.626	0.616	0.648	8.2
Styrene	1.047	1.157	0.921	0.958	0.922	1.001	10.1
# Bromoform	0.117	0.151	0.129	0.145	0.147	0.138	10.4#
Isopropylbenzene	1.579	1.800	1.495	1.527	1.461	1.572	8.6
# 1,1,2,2-Tetrachloroethane	0.532	0.524	0.470	0.516	0.506	0.510	4.7#
1,2,3-Trichloropropane	0.392	0.341	0.303	0.336	0.339	0.342	9.3

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Instrument ID: INCOS-M3 Calibration Date(s): 09/08/97 09/08/97

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) CAP

Min $\overline{RRF}$ for SPCC(#) = 0.300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF0.3= 97M3VO3453 RRF1 = 97M3VO3454
RRF5 = 97M3VO3455 RRF10 = 97M3VO3456 RRF20 = 97M3VO3457

COMPOUND	RRF0.3	RRF1	RRF5	RRF10	RRF20	$\overline{RRF}$	% RSD
n-Propylbenzene	1.095	1.111	1.038	1.095	1.126	1.093	3.0
Bromobenzene	0.408	0.439	0.354	0.376	0.373	0.390	8.6
1,3,5-Trimethylbenzene	3.195	3.228	2.890	2.978	2.895	3.037	5.4
2-Chlorotoluene	0.972	0.941	0.874	0.905	0.922	0.923	4.0
4-Chlorotoluene	0.952	0.958	0.844	0.886	0.888	0.906	5.3
tert-Butylbenzene	3.271	3.342	3.049	3.079	3.064	3.161	4.3
1,2,4-Trimethylbenzene	2.995	3.006	2.800	2.791	2.736	2.866	4.4
sec-Butylbenzene	4.415	4.625	4.199	4.015	4.094	4.270	5.8
p-Isopropyltoluene	3.358	3.522	3.128	3.247	3.141	3.279	5.0
1,3-Dichlorobenzene	1.751	1.736	1.549	1.625	1.613	1.655	5.2
1,4-Dichlorobenzene	1.650	1.672	1.445	1.524	1.511	1.560	6.2
n-Butylbenzene	3.550	3.693	3.444	3.446	3.354	3.497	3.7
1,2-Dichlorobenzene	1.484	1.404	1.341	1.358	1.339	1.385	4.4
1,2-Dibromo-3-chloropropane	0.051	0.053	0.061	0.070	0.074	0.062	16.4
1,2,4-Trichlorobenzene	0.903	0.855	0.888	0.893	0.906	0.889	2.3
Hexachlorobutadiene *	0.871	0.821	0.776	0.756	0.790	0.803	5.6*
Naphthalene	0.493	0.523	0.585	0.647	0.685	0.587	13.8
1,2,3-Trichlorobenzene	0.666	0.639	0.661	0.656	0.649	0.654	1.6
Toluene-d8 - SS	1.312	1.367	1.221	1.211	1.183	1.259	6.2
4-Bromofluorobenzene - SS	1.153	1.067	1.075	1.096	1.119	1.102	3.2
1,2-Dichloroethane-d4 - SS	0.041	0.043	0.042	0.042	0.039	0.041	3.7
Dibromofluoromethane - SS	0.296	0.283	0.272	0.264	0.249	0.273	6.6

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Instrument ID: INCOS-M3 Calibration Date(s): 09/09/97 09/09/97

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) CAP

Min $\overline{RRF}$ for SPCC(#) = 0.300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF0.3= 97M3VO3474 RRF1 = 97M3VO3479
RRF5 = 97M3VO3478 RRF10 = 97M3VO3477 RRF20 = 97M3VO3476

COMPOUND		RRF0.3	RRF1	RRF5	RRF10	RRF20	$\overline{RRF}$	% RSD	
Dichlorodifluoromethane		0.256	0.271	0.393	0.376	0.362	0.332	19.1	
Chloromethane	#	0.511	0.493	0.587	0.533	0.514	0.528	6.8	#
Vinyl chloride	*	0.428	0.439	0.486	0.453	0.438	0.449	5.0	*
Bromomethane		0.231	0.250	0.252	0.243	0.252	0.246	3.6	
Chloroethane		0.191	0.183	0.200	0.189	0.179	0.188	4.3	
Trichlorofluoromethane		0.486	0.436	0.443	0.452	0.396	0.443	7.3	
1,1-Dichloroethene	*	0.259	0.261	0.271	0.260	0.247	0.260	3.3	*
Methylene chloride		0.480	0.361	0.313	0.313	0.288	0.351	21.9	
trans-1,2-Dichloroethene		0.306	0.316	0.327	0.324	0.299	0.314	3.8	
1,1-Dichloroethane	#	0.703	0.707	0.723	0.718	0.641	0.698	4.7	#
2,2-Dichloropropane		0.417	0.427	0.499	0.517	0.452	0.462	9.5	
cis-1,2-Dichloroethene		0.350	0.348	0.348	0.347	0.320	0.343	3.7	
Chloroform	*	0.704	0.610	0.629	0.617	0.566	0.625	8.0	*
Bromochloromethane		0.140	0.127	0.133	0.136	0.128	0.133	4.1	
1,1,1-Trichloroethane		0.485	0.461	0.514	0.513	0.469	0.488	5.0	
1,1-Dichloropropene		0.140	0.147	0.153	0.152	0.145	0.147	3.6	
Carbon tetrachloride		0.402	0.398	0.417	0.423	0.384	0.405	3.8	
Benzene		1.249	1.250	1.214	1.180	1.068	1.192	6.3	
1,2-Dichloroethane		0.400	0.368	0.374	0.368	0.339	0.370	5.9	
Trichloroethene		0.352	0.363	0.367	0.375	0.352	0.362	2.7	
1,2-Dichloropropane	*	0.400	0.382	0.386	0.394	0.363	0.385	3.7	*
Bromodichloromethane		0.419	0.395	0.432	0.436	0.395	0.415	4.7	
Dibromomethane		0.159	0.150	0.155	0.157	0.145	0.153	3.7	
Toluene	*	0.683	0.705	0.716	0.710	0.643	0.691	4.3	*
1,1,2-Trichloroethane		0.255	0.261	0.257	0.253	0.251	0.255	1.5	
1,3-Dichloropropane		0.518	0.494	0.485	0.463	0.457	0.483	5.1	
Tetrachloroethene		0.498	0.536	0.515	0.508	0.481	0.508	4.0	
Dibromochloromethane		0.310	0.320	0.341	0.334	0.336	0.328	3.9	
1,2-Dibromoethane		0.231	0.258	0.268	0.257	0.255	0.254	5.4	
Chlorobenzene	#	1.072	1.088	1.108	1.061	1.009	1.068	3.5	#
1,1,1,2-Tetrachloroethane		0.365	0.381	0.390	0.372	0.375	0.377	2.5	
Ethylbenzene	*	1.745	1.985	1.985	1.895	1.747	1.871	6.4	*
m-,p-Xylene		0.637	0.737	0.726	0.706	0.652	0.692	6.5	
o-Xylene		0.590	0.706	0.710	0.704	0.660	0.674	7.6	
Styrene		0.921	1.092	1.059	1.088	1.020	1.036	6.8	
Bromoform	#	0.144	0.154	0.174	0.173	0.188	0.167	10.5	#
Isopropylbenzene		1.392	1.734	1.734	1.718	1.563	1.628	9.2	
1,1,2,2-Tetrachloroethane	#	0.734	0.649	0.732	0.634	0.673	0.684	6.8	#
1,2,3-Trichloropropane		0.501	0.458	0.495	0.440	0.461	0.471	5.5	

6A

VOLATILE ORGANICS INITIAL CALIBRATION DATA

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Instrument ID: INCOS-M3 Calibration Date(s): 09/09/97 09/09/97

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) CAP

Min $\overline{RRF}$ for SPCC(#) = 0.300 (0.250 for Bromoform) Max %RSD for CCC(*) = 30.0%

LAB FILE ID: RRF0.3= 97M3VO3474 RRF1 = 97M3VO3479
RRF5 = 97M3VO3478 RRF10 = 97M3VO3477 RRF20 = 97M3VO3476

COMPOUND	RRF0.3	RRF1	RRF5	RRF10	RRF20	$\overline{RRF}$	% RSD
n-Propylbenzene	0.997	1.175	1.237	1.117	1.109	1.127	7.9
Bromobenzene	0.373	0.410	0.424	0.403	0.420	0.406	5.0
1,3,5-Trimethylbenzene	3.081	3.454	3.460	3.325	2.982	3.260	6.7
2-Chlorotoluene	0.918	1.036	1.046	0.977	0.950	0.985	5.6
4-Chlorotoluene	0.880	0.988	1.007	0.966	0.929	0.954	5.3
tert-Butylbenzene	3.176	3.633	3.654	3.482	3.065	3.402	7.9
1,2,4-Trimethylbenzene	2.782	3.205	3.186	3.190	2.798	3.032	7.3
sec-Butylbenzene	4.324	5.090	4.942	4.738	4.029	4.625	9.5
p-Isopropyltoluene	3.457	3.696	3.645	3.635	3.140	3.515	6.5
1,3-Dichlorobenzene	1.728	1.872	1.879	1.797	1.732	1.802	4.0
1,4-Dichlorobenzene	1.750	1.815	1.712	1.696	1.644	1.723	3.7
n-Butylbenzene	2.784	3.671	3.681	3.661	3.056	3.371	12.5
1,2-Dichlorobenzene	1.394	1.533	1.553	1.520	1.475	1.495	4.2
1,2-Dibromo-3-chloropropane	0.044	0.071	0.099	0.094	0.101	0.082	29.6
1,2,4-Trichlorobenzene	0.570	0.778	0.743	0.853	0.750	0.739	14.1
Hexachlorobutadiene *	0.683	0.806	0.790	0.821	0.663	0.753	9.8*
Naphthalene	0.358	0.396	0.327	0.540	0.528	0.430	22.9
1,2,3-Trichlorobenzene	0.426	0.579	0.545	0.643	0.560	0.551	14.3
Toluene-d8 - SS	1.626	1.452	1.427	1.390	1.114	1.402	13.2
4-Bromofluorobenzene - SS	1.544	1.303	1.316	1.270	1.121	1.311	11.6
1,2-Dichloroethane-d4 - SS	0.056	0.047	0.048	0.049	0.042	0.048	10.5
Dibromofluoromethane - SS	0.246	0.231	0.160	0.176	0.140	0.191	24.0

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Instrument ID: FINN Calibration date: 09/03/97 Time: 1739

Lab File ID: 97M3VO3403 Init. Calib. Date(s): 09/03/97 09/03/97

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) CAP

Min RRF50 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND		$\overline{RRF}$	RRF50	%D	
Dichlorodifluoromethane		0.377	0.418	-10.9	
Chloromethane	#	0.545	0.554	-1.7	#
Vinyl chloride	*	0.485	0.486	-0.2	*
Bromomethane		0.300	0.290	3.3	
Chloroethane		0.205	0.206	-0.5	
Trichlorofluoromethane		0.523	0.512	2.1	
1,1-Dichloroethene	*	0.279	0.279	0.0	*
Methylene chloride		0.353	0.337	4.5	
trans-1,2-Dichloroethene		0.326	0.346	-6.1	
1,1-Dichloroethane	#	0.698	0.737	-5.6	#
2,2-Dichloropropane		0.396	0.420	-6.1	
cis-1,2-Dichloroethene		0.355	0.379	-6.8	
Chloroform	*	0.653	0.660	-1.1	*
Bromochloromethane		0.148	0.159	-7.4	
1,1,1-Trichloroethane		0.485	0.504	-3.9	
1,1-Dichloropropene		0.152	0.160	-5.3	
Carbon tetrachloride		0.425	0.450	-5.9	
Benzene		1.227	1.260	-2.7	
1,2-Dichloroethane		0.386	0.380	1.6	
Trichloroethene		0.380	0.403	-6.1	
1,2-Dichloropropane	*	0.379	0.406	-7.1	*
Bromodichloromethane		0.440	0.466	-5.9	
Dibromomethane		0.163	0.174	-6.7	
Toluene	*	0.749	0.775	-3.5	*
1,1,2-Trichloroethane		0.246	0.262	-6.5	
1,3-Dichloropropane		0.462	0.460	0.4	
Tetrachloroethene		0.576	0.587	-1.9	
Dibromochloromethane		0.349	0.387	-10.9	
1,2-Dibromoethane		0.258	0.283	-9.7	
Chlorobenzene	#	1.142	1.188	-4.0	#
1,1,1,2-Tetrachloroethane		0.398	0.424	-6.5	
Ethylbenzene	*	1.984	2.056	-3.6	*
m-,p-Xylene		0.753	0.777	-3.2	
o-Xylene		0.716	0.751	-4.9	
Styrene		1.129	1.158	-2.6	
Bromoform	#	0.194	0.203	-4.6	#
Isopropylbenzene		1.776	1.854	-4.4	
1,1,2,2-Tetrachloroethane	#	0.596	0.697	-17.0	#
1,2,3-Trichloropropane		0.402	0.459	-14.2	
n-Propylbenzene		1.118	1.287	-15.1	

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Instrument ID: INCOS-M3 Calibration date: 09/03/97 Time: 1739

Lab File ID: 97M3VO3403 Init. Calib. Date(s): 09/03/97 09/03/97

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) CAP

Min RRF10 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND		$\overline{RRF}$	RRF10	%D	
Bromobenzene		0.467	0.472	-1.1	
1,3,5-Trimethylbenzene		3.296	3.633	-10.2	
2-Chlorotoluene		0.979	1.101	-12.5	
4-Chlorotoluene		0.972	1.067	-9.8	
tert-Butylbenzene		3.368	3.774	-12.0	
1,2,4-Trimethylbenzene		3.208	3.497	-9.0	
sec-Butylbenzene		4.573	5.116	-11.9	
p-Isopropyltoluene		3.635	3.826	-5.3	
1,3-Dichlorobenzene		1.844	1.963	-6.5	
1,4-Dichlorobenzene		1.860	1.837	1.2	
n-Butylbenzene		3.870	4.050	-4.7	
1,2-Dichlorobenzene		1.586	1.674	-5.5	
1,2-Dibromo-3-chloropropane		0.079	0.094	-19.0	
1,2,4-Trichlorobenzene		1.077	0.973	9.7	
Hexachlorobutadiene	*	0.922	0.887	3.8	*
Naphthalene		0.762	0.629	17.4	
1,2,3-Trichlorobenzene		0.829	0.715	13.8	
Toluene-d8 - SS		1.304	1.265	3.0	
4-Bromofluorobenzene - SS		1.146	1.146	0.0	
1,2-Dichloroethane-d4 - SS		0.042	0.044	-4.8	
Dibromofluoromethane - SS		0.287	0.279	2.8	

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Instrument ID: INCOS-M3 Calibration date: 09/08/97 Time: 1904

Lab File ID: 97M3VO3456 Init. Calib. Date(s): 09/08/97 09/08/97

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) CAP

Min RRF10 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND		$\overline{RRF}$	RRF10	%D	
Dichlorodifluoromethane		0.327	0.337	-3.1	
Chloromethane	#	0.454	0.437	3.7	#
Vinyl chloride	*	0.395	0.374	5.3	*
Bromomethane		0.245	0.238	2.9	
Chloroethane		0.166	0.152	8.4	
Trichlorofluoromethane		0.393	0.348	11.4	
1,1-Dichloroethene	*	0.234	0.222	5.1	*
Methylene chloride		0.276	0.260	5.8	
trans-1,2-Dichloroethene		0.289	0.286	1.0	
1,1-Dichloroethane	#	0.587	0.582	0.9	#
2,2-Dichloropropane		0.415	0.417	-0.5	
cis-1,2-Dichloroethene		0.317	0.307	3.2	
Chloroform	*	0.553	0.522	5.6	*
Bromochloromethane		0.123	0.121	1.6	
1,1,1-Trichloroethane		0.442	0.435	1.6	
1,1-Dichloropropene		0.131	0.133	-1.5	
Carbon tetrachloride		0.364	0.364	0.0	
Benzene		1.060	1.034	2.5	
1,2-Dichloroethane		0.294	0.276	6.1	
Trichloroethene		0.343	0.343	0.0	
1,2-Dichloropropane	*	0.333	0.334	-0.3	*
Bromodichloromethane		0.366	0.367	-0.3	
Dibromomethane		0.134	0.131	2.2	
Toluene	*	0.691	0.656	5.1	*
1,1,2-Trichloroethane		0.207	0.205	1.0	
1,3-Dichloropropane		0.382	0.368	3.7	
Tetrachloroethene		0.507	0.486	4.1	
Dibromochloromethane		0.276	0.283	-2.5	
1,2-Dibromoethane		0.216	0.215	0.5	
Chlorobenzene	#	0.998	0.975	2.3	#
1,1,1,2-Tetrachloroethane		0.330	0.330	0.0	
Ethylbenzene	*	1.740	1.664	4.4	*
m-,p-Xylene		0.674	0.646	4.2	
o-Xylene		0.648	0.626	3.4	
Styrene		1.001	0.958	4.3	
Bromoform	#	0.138	0.145	-5.1	#
Isopropylbenzene		1.572	1.527	2.9	
1,1,2,2-Tetrachloroethane	#	0.510	0.516	-1.2	#
1,2,3-Trichloropropane		0.342	0.336	1.8	
n-Propylbenzene		1.093	1.095	-0.2	

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Instrument ID: INCOS-M3 Calibration date: 09/08/97 Time: 1904

Lab File ID: 97M3VO3456 Init. Calib. Date(s): 09/08/97 09/08/97

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) CAP

Min RRF10 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND	$\overline{RRF}$	RRF10	%D
Bromobenzene	0.390	0.376	3.6
1,3,5-Trimethylbenzene	3.037	2.978	1.9
2-Chlorotoluene	0.923	0.905	2.0
4-Chlorotoluene	0.906	0.886	2.2
tert-Butylbenzene	3.161	3.079	2.6
1,2,4-Trimethylbenzene	2.866	2.791	2.6
sec-Butylbenzene	4.270	4.015	6.0
p-Isopropyltoluene	3.279	3.247	1.0
1,3-Dichlorobenzene	1.655	1.625	1.8
1,4-Dichlorobenzene	1.560	1.524	2.3
n-Butylbenzene	3.497	3.446	1.5
1,2-Dichlorobenzene	1.385	1.358	1.9
1,2-Dibromo-3-chloropropane	0.062	0.070	-12.9
1,2,4-Trichlorobenzene	0.889	0.893	-0.4
Hexachlorobutadiene *	0.803	0.756	5.9 *
Naphthalene	0.587	0.647	-10.2
1,2,3-Trichlorobenzene	0.654	0.656	-0.3
Toluene-d8 - SS	1.259	1.211	3.8
4-Bromofluorobenzene - SS	1.102	1.096	0.5
1,2-Dichloroethane-d4 - SS	0.041	0.042	-2.4
Dibromofluoromethane - SS	0.273	0.264	3.3

7A
VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Instrument ID: INCOS-M3 Calibration date: 09/09/97 Time: 1359

Lab File ID: 97M3VO3477 Init. Calib. Date(s): 09/09/97 09/09/97

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) CAP

Min RRF10 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

	COMPOUND		$\overline{RRF}$	RRF10	%D	
	Dichlorodifluoromethane		0.332	0.376	-13.2	
#	Chloromethane	#	0.528	0.533	-0.9	#
*	Vinyl chloride	*	0.449	0.453	-0.9	*
	Bromomethane		0.246	0.243	1.2	
	Chloroethane		0.188	0.189	-0.5	
	Trichlorofluoromethane		0.443	0.452	-2.0	
*	1,1-Dichloroethene	*	0.260	0.260	0.0	*
	Methylene chloride		0.351	0.313	10.8	
	trans-1,2-Dichloroethene		0.314	0.324	-3.2	
#	1,1-Dichloroethane	#	0.698	0.718	-2.9	#
	2,2-Dichloropropane		0.462	0.517	-11.9	
	cis-1,2-Dichloroethene		0.343	0.347	-1.2	
*	Chloroform	*	0.625	0.617	1.3	*
	Bromochloromethane		0.133	0.136	-2.3	
	1,1,1-Trichloroethane		0.488	0.513	-5.1	
	1,1-Dichloropropene		0.147	0.152	-3.4	
	Carbon tetrachloride		0.405	0.423	-4.4	
	Benzene		1.192	1.180	1.0	
	1,2-Dichloroethane		0.370	0.368	0.5	
	Trichloroethene		0.362	0.375	-3.6	
*	1,2-Dichloropropane	*	0.385	0.394	-2.3	*
	Bromodichloromethane		0.415	0.436	-5.1	
	Dibromomethane		0.153	0.157	-2.6	
*	Toluene	*	0.691	0.710	-2.8	*
	1,1,2-Trichloroethane		0.255	0.253	0.8	
	1,3-Dichloropropane		0.483	0.463	4.1	
	Tetrachloroethene		0.508	0.508	0.0	
	Dibromochloromethane		0.328	0.334	-1.8	
	1,2-Dibromoethane		0.254	0.257	-1.2	
#	Chlorobenzene	#	1.068	1.061	0.7	#
	1,1,1,2-Tetrachloroethane		0.377	0.372	1.3	
*	Ethylbenzene	*	1.871	1.895	-1.3	*
	m-,p-Xylene		0.692	0.706	-2.0	
	o-Xylene		0.674	0.704	-4.5	
	Styrene		1.036	1.088	-5.0	
#	Bromoform	#	0.167	0.173	-3.6	#
	Isopropylbenzene		1.628	1.718	-5.5	
#	1,1,2,2-Tetrachloroethane	#	0.684	0.634	7.3	#
	1,2,3-Trichloropropane		0.471	0.440	6.6	
	n-Propylbenzene		1.127	1.117	0.9	

7A

VOLATILE CONTINUING CALIBRATION CHECK

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Instrument ID: INCOS-M3 Calibration date: 09/09/97 Time: 1359

Lab File ID: 97M3VO3477 Init. Calib. Date(s): 09/09/97 09/09/97

Matrix:(soil/water) WATER Level:(low/med) LOW Column:(pack/cap) CAP

Min RRF10 for SPCC(#) = 0.300 (0.250 for Bromoform) Max %D for CCC(*) = 25.0%

COMPOUND		RRF	RRF10	%D	
Bromobenzene		0.406	0.403	0.7	
1,3,5-Trimethylbenzene		3.260	3.325	-2.0	
2-Chlorotoluene		0.985	0.977	0.8	
4-Chlorotoluene		0.954	0.966	-1.3	
tert-Butylbenzene		3.402	3.482	-2.4	
1,2,4-Trimethylbenzene		3.032	3.190	-5.2	
sec-Butylbenzene		4.625	4.738	-2.4	
p-Isopropyltoluene		3.515	3.635	-3.4	
1,3-Dichlorobenzene		1.802	1.797	0.3	
1,4-Dichlorobenzene		1.723	1.696	1.6	
n-Butylbenzene		3.371	3.661	-8.6	
1,2-Dichlorobenzene		1.495	1.520	-1.7	
1,2-Dibromo-3-chloropropane		0.082	0.094	-14.6	
1,2,4-Trichlorobenzene		0.739	0.853	-15.4	
Hexachlorobutadiene	*	0.753	0.821	-9.0	*
Naphthalene		0.430	0.540	-25.6	
1,2,3-Trichlorobenzene		0.551	0.643	-16.7	
Toluene-d8 - SS		1.402	1.390	0.9	
4-Bromofluorobenzene - SS		1.311	1.270	3.1	
1,2-Dichloroethane-d4 - SS		0.048	0.049	-2.1	
Dibromofluoromethane - SS		0.191	0.176	7.9	

QC data

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J0903M01-BLK

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: J0903M01-BLK

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3405

Level: (low/med) MED Date Received:

% Moisture: not dec. Date Analyzed: 09/03/97

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	3100	U
74-87-3	Chloromethane	6200	U
75-01-4	Vinyl chloride	6200	U
74-83-9	Bromomethane	6200	U
75-00-3	Chloroethane	6200	U
75-69-4	Trichlorofluoromethane	3100	U
75-35-4	1,1-Dichloroethene	3100	U
75-09-2	Methylene chloride	3100	U
156-60-5	trans-1,2-Dichloroethene	3100	U
75-34-3	1,1-Dichloroethane	3100	U
594-20-7	2,2-Dichloropropane	3100	U
156-59-2	cis-1,2-Dichloroethene	3100	U
67-66-3	Chloroform	3100	U
74-97-5	Bromochloromethane	3100	U
71-55-6	1,1,1-Trichloroethane	3100	U
563-58-6	1,1-Dichloropropene	3100	U
56-23-5	Carbon tetrachloride	3100	U
71-43-2	Benzene	3100	U
107-06-2	1,2-Dichloroethane	3100	U
79-01-6	Trichloroethene	3100	U
78-87-5	1,2-Dichloropropane	3100	U
75-27-4	Bromodichloromethane	3100	U
74-95-3	Dibromomethane	3100	U
108-88-3	Toluene	3100	U
79-00-5	1,1,2-Trichloroethane	3100	U
142-28-9	1,3-Dichloropropane	3100	U
127-18-4	Tetrachloroethene	3100	U
124-48-1	Dibromochloromethane	3100	U
106-93-4	1,2-Dibromoethane	3100	U
108-90-7	Chlorobenzene	3100	U
630-20-6	1,1,1,2-Tetrachloroethane	3100	U
100-41-4	Ethylbenzene	3100	U
N/A	m-,p-Xylene	3100	U
95-47-6	o-Xylene	3100	U
100-42-5	Styrene	3100	U
75-25-2	Bromoform	3100	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J0903M01-BLK

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: J0903M01-BLK

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3405

Level: (low/med) MED Date Received:

% Moisture: not dec. Date Analyzed: 09/03/97

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
98-82-8	Isopropylbenzene	3100	U
79-34-5	1,1,2,2-Tetrachloroethane	3100	U
96-18-4	1,2,3-Trichloropropane	3100	U
103-65-1	n-Propylbenzene	3100	U
108-86-1	Bromobenzene	3100	U
108-67-8	1,3,5-Trimethylbenzene	3100	U
95-49-8	2-Chlorotoluene	3100	U
106-43-4	4-Chlorotoluene	3100	U
98-06-6	tert-Butylbenzene	3100	U
95-63-6	1,2,4-Trimethylbenzene	3100	U
135-98-8	sec-Butylbenzene	3100	U
99-87-6	p-Isopropyltoluene	3100	U
541-73-1	1,3-Dichlorobenzene	3100	U
106-46-7	1,4-Dichlorobenzene	3100	U
104-51-8	n-Butylbenzene	3100	U
95-50-1	1,2-Dichlorobenzene	3100	U
96-12-8	1,2-Dibromo-3-chloropropane	3100	U
120-82-1	1,2,4-Trichlorobenzene	3100	U
87-68-3	Hexachlorobutadiene	3100	U
91-20-3	Naphthalene	3100	U
87-61-6	1,2,3-Trichlorobenzene	3100	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J0908M01-BLK

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: J0908M01-BLK

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3467

Level: (low/med) MED Date Received:

% Moisture: not dec. Date Analyzed: 09/09/97

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	3100	U
74-87-3	Chloromethane	6200	U
75-01-4	Vinyl chloride	6200	U
74-83-9	Bromomethane	6200	U
75-00-3	Chloroethane	6200	U
75-69-4	Trichlorofluoromethane	3100	U
75-35-4	1,1-Dichloroethene	3100	U
75-09-2	Methylene chloride	3100	U
156-60-5	trans-1,2-Dichloroethene	3100	U
75-34-3	1,1-Dichloroethane	3100	U
594-20-7	2,2-Dichloropropane	3100	U
156-59-2	cis-1,2-Dichloroethene	3100	U
67-66-3	Chloroform	3100	U
74-97-5	Bromochloromethane	3100	U
71-55-6	1,1,1-Trichloroethane	3100	U
563-58-6	1,1-Dichloropropene	3100	U
56-23-5	Carbon tetrachloride	3100	U
71-43-2	Benzene	3100	U
107-06-2	1,2-Dichloroethane	3100	U
79-01-6	Trichloroethene	3100	U
78-87-5	1,2-Dichloropropane	3100	U
75-27-4	Bromodichloromethane	3100	U
74-95-3	Dibromomethane	3100	U
108-88-3	Toluene	3100	U
79-00-5	1,1,2-Trichloroethane	3100	U
142-28-9	1,3-Dichloropropane	3100	U
127-18-4	Tetrachloroethene	3100	U
124-48-1	Dibromochloromethane	3100	U
106-93-4	1,2-Dibromoethane	3100	U
108-90-7	Chlorobenzene	3100	U
630-20-6	1,1,1,2-Tetrachloroethane	3100	U
100-41-4	Ethylbenzene	3100	U
N/A	m-,p-Xylene	3100	U
95-47-6	o-Xylene	3100	U
100-42-5	Styrene	3100	U
75-25-2	Bromoform	3100	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J0908M01-BLK

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: J0908M01-BLK

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3467

Level: (low/med) MED Date Received:

% Moisture: not dec. Date Analyzed: 09/09/97

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
98-82-8	Isopropylbenzene	3100	U
79-34-5	1,1,2,2-Tetrachloroethane	3100	U
96-18-4	1,2,3-Trichloropropane	3100	U
103-65-1	n-Propylbenzene	3100	U
108-86-1	Bromobenzene	3100	U
108-67-8	1,3,5-Trimethylbenzene	3100	U
95-49-8	2-Chlorotoluene	3100	U
106-43-4	4-Chlorotoluene	3100	U
98-06-6	tert-Butylbenzene	3100	U
95-63-6	1,2,4-Trimethylbenzene	3100	U
135-98-8	sec-Butylbenzene	3100	U
99-87-6	p-Isopropyltoluene	3100	U
541-73-1	1,3-Dichlorobenzene	3100	U
106-46-7	1,4-Dichlorobenzene	3100	U
104-51-8	n-Butylbenzene	3100	U
95-50-1	1,2-Dichlorobenzene	3100	U
96-12-8	1,2-Dibromo-3-chloropropane	3100	U
120-82-1	1,2,4-Trichlorobenzene	3100	U
87-68-3	Hexachlorobutadiene	3100	U
91-20-3	Naphthalene	3100	U
87-61-6	1,2,3-Trichlorobenzene	3100	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J0909M01-BLK

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: J0909M01-BLK

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3480

Level: (low/med) MED Date Received:

% Moisture: not dec. Date Analyzed: 09/09/97

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
75-71-8	Dichlorodifluoromethane	3100	U
74-87-3	Chloromethane	6200	U
75-01-4	Vinyl chloride	6200	U
74-83-9	Bromomethane	6200	U
75-00-3	Chloroethane	6200	U
75-69-4	Trichlorofluoromethane	3100	U
75-35-4	1,1-Dichloroethene	3100	U
75-09-2	Methylene chloride	3100	U
156-60-5	trans-1,2-Dichloroethene	3100	U
75-34-3	1,1-Dichloroethane	3100	U
594-20-7	2,2-Dichloropropane	3100	U
156-59-2	cis-1,2-Dichloroethene	3100	U
67-66-3	Chloroform	3100	U
74-97-5	Bromochloromethane	3100	U
71-55-6	1,1,1-Trichloroethane	3100	U
563-58-6	1,1-Dichloropropene	3100	U
56-23-5	Carbon tetrachloride	3100	U
71-43-2	Benzene	3100	U
107-06-2	1,2-Dichloroethane	3100	U
79-01-6	Trichloroethene	3100	U
78-87-5	1,2-Dichloropropane	3100	U
75-27-4	Bromodichloromethane	3100	U
74-95-3	Dibromomethane	3100	U
108-88-3	Toluene	3100	U
79-00-5	1,1,2-Trichloroethane	3100	U
142-28-9	1,3-Dichloropropane	3100	U
127-18-4	Tetrachloroethene	3100	U
124-48-1	Dibromochloromethane	3100	U
106-93-4	1,2-Dibromoethane	3100	U
108-90-7	Chlorobenzene	3100	U
630-20-6	1,1,1,2-Tetrachloroethane	3100	U
100-41-4	Ethylbenzene	3100	U
N/A	m-,p-Xylene	3100	U
95-47-6	o-Xylene	3100	U
100-42-5	Styrene	3100	U
75-25-2	Bromoform	3100	U

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

J0909M01-BLK

Lab Name: QAL/LRD Contract: RD920

Lab Code: Case No.: RD920 SAS No.: SDG No.: RD920

Matrix: (soil/water) SOIL Lab Sample ID: J0909M01-BLK

Sample wt/vol: 4.0 (g/mL) G Lab File ID: 97M3VO3480

Level: (low/med) MED Date Received:

% Moisture: not dec. Date Analyzed: 09/09/97

Column: (pack/cap) CAP Dilution Factor: 1.0

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
98-82-8	Isopropylbenzene	3100	U
79-34-5	1,1,2,2-Tetrachloroethane	3100	U
96-18-4	1,2,3-Trichloropropane	3100	U
103-65-1	n-Propylbenzene	3100	U
108-86-1	Bromobenzene	3100	U
108-67-8	1,3,5-Trimethylbenzene	3100	U
95-49-8	2-Chlorotoluene	3100	U
106-43-4	4-Chlorotoluene	3100	U
98-06-6	tert-Butylbenzene	3100	U
95-63-6	1,2,4-Trimethylbenzene	3100	U
135-98-8	sec-Butylbenzene	3100	U
99-87-6	p-Isopropyltoluene	3100	U
541-73-1	1,3-Dichlorobenzene	3100	U
106-46-7	1,4-Dichlorobenzene	3100	U
104-51-8	n-Butylbenzene	3100	U
95-50-1	1,2-Dichlorobenzene	3100	U
96-12-8	1,2-Dibromo-3-chloropropane	3100	U
120-82-1	1,2,4-Trichlorobenzene	3100	U
87-68-3	Hexachlorobutadiene	3100	U
91-20-3	Naphthalene	3100	U
87-61-6	1,2,3-Trichlorobenzene	3100	U

GASOLINE RANGE ORGANICS/PURGEABLE AROMATICS

CASE NARRATIVE
GC GASOLINE RANGE ORGANICS/PURGEABLE AROMATICS

CH2M Hill Lab Reference No./SDG.: RD920

Project: FAA Tanana FST Management Program

I. **RECEIPT**

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

II. **HOLDING TIMES**

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. **METHOD**

Preparation: ADEC PUBL-AK 101, 11/95
Cleanup: N/A
Analysis: SW-846 8020A(MOD) / ADEC PUBL-AK 101, 11/95

IV. **PREPARATION**

Sample preparation proceeded normally.

V. **ANALYSIS**

A. Calibration : The surrogate bromofluorobenzene was omitted from the continuing calibration (9715PDC0631) on 9/11/97. The standards bracketing this continuing calibration met all acceptance criteria. No corrective action is recommended.

B. Blanks: All acceptance criteria were met.

C. Surrogates: Due to matrix interference, the surrogate recovery for bromofluorobenzene in RD920004 exceeded laboratory QC limits. The laboratory QC samples met all acceptance criteria.

D. Spikes: All acceptance criteria were met.

E. Samples: Sample RD920008 was analyzed on a diluted basis due to the nature of the sample matrix. Reporting limits have been adjusted accordingly.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and QAL, Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

SIGNED: Douglas Burnett DATE: 9-24-97

Douglas Burnett
Resource Chemist, Organics

CH2M HILL
Analytical Services
5090 Caterpillar Road
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Phone: (916) 244-5227
Fax: (916) 244-4109

Sample data

Report of Analytical Results

Client Sample ID: TAL97SS129S
Sample Description: None
Sample Matrix: Soil
Dilution: 1.30

Date Collected: 08/26/97 08:30 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: None
Date Analyzed: 09/11/97 00:00 (Thu)

Reference No: RD920
Lab Sample ID: RD920008
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.08 U	mg/Kg	0.08
Ethylbenzene	100-41-4	0.81	mg/Kg	0.08
Toluene	108-88-3	1.1	mg/Kg	0.08
Xylenes (Total)	N/A	11	mg/Kg	0.08
a,a,a-Trifluorotoluene - SS	98-08-8	99	%rec	
Bromofluorobenzene - SS	460-00-4	56	%rec	

(9768)

Report of Analytical Results

Client Sample ID: TAL97SS130S
Sample Description: None
Sample Matrix: Soil
Dilution: 0.53

Date Collected: 08/26/97 08:31 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: None
Date Analyzed: 09/11/97 00:00 (Thu)

Reference No: RD920
Lab Sample ID: RD920009
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.03 U	mg/Kg	0.03
Ethylbenzene	100-41-4	0.56	mg/Kg	0.03
Toluene	108-88-3	0.89	mg/Kg	0.03
Xylenes (Total)	N/A	10	mg/Kg	0.03
a,a,a-Trifluorotoluene - SS	98-08-8	95	%rec	
Bromofluorobenzene - SS	460-00-4	108	%rec	

(9768)

Report of Analytical Results

Client Sample ID: TAL97SS131S
Sample Description: None
Sample Matrix: Soil
Dilution: 0.63

Date Collected: 08/26/97 08:32 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: None
Date Analyzed: 09/11/97 00:00 (Thu)

Reference No: RD920
Lab Sample ID: RD920010
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.04 U	mg/Kg	0.04
Ethylbenzene	100-41-4	0.55	mg/Kg	0.04
Toluene	108-88-3	0.55	mg/Kg	0.04
Xylenes (Total)	N/A	11	mg/Kg	0.04
a,a,a-Trifluorotoluene - SS	98-08-8	93	%rec	
Bromofluorobenzene - SS	460-00-4	101	%rec	

(9768)

Report of Analytical Results

Client Sample ID: TAL97SS132S
Sample Description: None
Sample Matrix: Soil
Dilution: 0.58

Date Collected: 08/26/97 08:33 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: None
Date Analyzed: 09/11/97 00:00 (Thu)

Reference No: RD920
Lab Sample ID: RD920011
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.03 U	mg/Kg	0.03
Ethylbenzene	100-41-4	0.03 U	mg/Kg	0.03
Toluene	108-88-3	0.03 U	mg/Kg	0.03
Xylenes (Total)	N/A	0.03 U	mg/Kg	0.03
a,a,a-Trifluorotoluene - SS	98-08-8	100	%rec	
Bromofluorobenzene - SS	460-00-4	80	%rec	

(9768)

QC Summary

SURROGATE RECOVERY SUMMARY
GASOLINE RANGE ORGANICS/PURGEABLE AROMATICS

Instrument ID: TRACOR 540, DB-624 Lab Ref. No.: RD920

Matrix: SOIL Method: 8020A(MOD) / ADEC PUBL-AK 101, 11/95

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	SURROGATE STANDARD A,A,A-TRIFLUOROTOLUENE	SURROGATE STANDARD BROMOFLUOROBENZENE
BSB10911	BSB10911	100	72
GSB10914TR	GSB10914TR	103	84
RD920001	TAL97SS121V	105	83
RD920002	TAL97SS123F	98	66
RD920003	TAL97SS124F	95	75
RD920004	TAL97SS125F	112	186 *
RD920008	TAL97SS129S	99	56
RD920009	TAL97SS130S	95	108
RD920010	TAL97SS131S	93	101
RD920011	TAL97SS132S	100	80

Surrogate standard reported as percent recovery.

Comments: * - Outside laboratory QC limits.

FORM II

METHOD BLANK SUMMARY
PURGEABLE AROMATICS

Matrix: SOIL
Method: 8020A(MOD)
Date Extracted: N/A
Date Analyzed: 09/11/97
Time Analyzed: 09:55
Instrument ID: TRACOR 540, DB-624
Lab File ID: 9715PDB0622

Lab Sample ID: BSB10911
Lab Ref. No.: RD920

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED
RD920002	TAL97SS123F	09/11/97
RD920003	TAL97SS124F	09/11/97
RD920004	TAL97SS125F	09/11/97
RD920008	TAL97SS129S	09/11/97
RD920009	TAL97SS130S	09/11/97
RD920010	TAL97SS131S	09/11/97
RD920011	TAL97SS132S	09/11/97

Comments:

FORM IV

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METHOD BLANK SUMMARY
GASOLINE RANGE ORGANICS/PURGEABLE AROMATICS

Matrix: SOIL
Method: 8020A(MOD) / ADEC PUBL-AK 101, 11/95
Date Extracted: N/A
Date Analyzed: 09/14/97
Time Analyzed: 11:09
Instrument ID: TRACOR 540, DB-624
Lab File ID: 9715PDB0694/9716FDB0694

Lab Sample ID: GSB10914TR
Lab Ref. No.: RD920

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLE:

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED
RD920001	TAL97SS121V	09/14/97

Comments:

FORM IV

Standards data

INITIAL CALIBRATION
PURGEABLE AROMATICS

Date Analyzed: 08/26/97
Instrument ID: TRACOR 540, DB-624

Method: 8020A(MOD)
Matrix: Water

Compound	5.0 PPB	10 PPB	20 PPB	50 PPB	100 PPB	200 PPB	$\overline{RF}$	% RSD
Benzene	2.7652	2.2361	2.0417	1.8940	1.9206	1.8895	2.1245	16.03
Ethylbenzene	2.3241	1.9349	1.7416	1.6279	1.6659	1.6391	1.8223	14.86
Toluene	2.7306	2.1695	1.9710	1.8361	1.8630	1.8263	2.0661	16.94
P/M Xylene	2.6515	2.2102	2.0032	1.9309	1.9719	1.8794	2.1079	13.73
O Xylene	2.2537	1.9162	1.7229	1.6175	1.6419	1.6144	1.7944	14.05
Surrogate								
a,a,a-Trifluorotoluene-SS	0.6456	0.6411	0.6414	0.6346	0.6312	0.6201	0.6357	1.45
Bromofluorobenzene-SS	0.7410	0.7491	0.7335	0.7544	0.7810	0.7621	0.7535	2.23

Comments:

FORM VI

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4109

INITIAL CALIBRATION
GASOLINE RANGE ORGANICS

Date Analyzed: 08/26/97
Instrument ID: TRACOR 540, DB-624

Method: ADEC PUBL-AK 101, 11/95
Matrix: Water

RESPONSE FACTOR
(1.00E+06)

Compound	RRF(0.025) PPM	RRF(0.25) PPM	RRF (0.50) PPM	RRF(1.0) PPM	RRF(2.0) PPM	$\overline{RF}$	% RSD
Gasoline Range Organics	1.067	1.379	1.334	1.272	1.450	1.300	11.2

Comments:

FORM VI

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Phone: (916) 244-5227
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CONTINUING CALIBRATION
PURGEABLE AROMATICS

Continuing Calibration Date: 09/11/97
Continuing Calibration Time: 07:55
Continuing Calibration File: 9715PDC0620

Method: 8020A(MOD)
Initial Calibration Date: 08/26/97
Matrix: Water

COMPOUND	REF. AMT.	CONT. CONT. CAL. CONC.	RANGE	RETENTION TIME	RETENTION TIME WINDOW
Benzene	20.00	19.90	15.4 - 24.6	5.848	5.808 - 5.888
Ethylbenzene	20.00	21.04	12.6 - 27.4	10.706	10.686 - 10.726
Toluene	20.00	21.08	15.4 - 24.6	8.579	8.559 - 8.599
M/P Xylene	40.00	45.52	29.8 - 61.4	10.889	10.869 - 10.909
O Xylene	20.00	20.80	14.0 - 27.0	11.438	11.418 - 11.458

SURROGATE	PREDICTED CONC	ACTUAL CONCENTRATION	% D
a,a,a-Trifluorotoluene-SS	100	100	0.0
Bromobluorobenzene-SS	100	103	3.0

Comments:

CH2M HILL
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CONTINUING CALIBRATION
PURGEABLE AROMATICS

Continuing Calibration Date: 09/11/97
Continuing Calibration Time: 16:36
Continuing Calibration File: 9715PDC0631

Method: 8020A(MOD)
Initial Calibration Date: 08/26/97
Matrix: Water

COMPOUND	REF. AMT.	CONT. CONT. CAL. CONC.	RANGE	RETENTION TIME	RETENTION TIME WINDOW
Benzene	20.00	19.45	15.4 - 24.6	5.848	5.808 - 5.888
Ethylbenzene	20.00	20.37	12.6 - 27.4	10.718	10.698 - 10.738
Toluene	20.00	19.54	15.4 - 24.6	8.589	8.569 - 8.609
M/P Xylene	40.00	43.71	29.8 - 61.4	10.899	10.879 - 10.919
O Xylene	20.00	20.61	14.0 - 27.0	11.449	11.429 - 11.469

SURROGATE	PREDICTED CONC	ACTUAL CONCENTRATION	% D
a,a,a-Trifluorotoluene-SS	100	102	2.0
Bromobluorobenzene-SS	100	*	

Comments: * - Not spiked.

FORM VII

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CONTINUING CALIBRATION
GASOLINE RANGE ORGANICS

Continuing Calibration Date: 09/14/97
Continuing Calibration Time: 08:36
Continuing Calibration File: 9716FDC0690

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 08/26/97
Matrix: Water

RESPONSE FACTOR
(1.00E+06)

COMPOUND	INITIAL MEAN RF	CONTINUING RF	% D
Gasoline Range Organics	1.300	1.440	10.2

Comments:

FORM VII

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CONTINUING CALIBRATION
PURGEABLE AROMATICS

Continuing Calibration Date: 09/14/97
Continuing Calibration Time: 09:14
Continuing Calibration File: 9715PDC0691

Method: 8020A(MOD)
Initial Calibration Date: 08/26/97
Matrix: Water

COMPOUND	REF. AMT.	CONT. CONT. CAL. CONC.	RANGE	RETENTION TIME	RETENTION TIME WINDOW
Benzene	20.00	19.02	15.4 - 24.6	5.843	5.803 - 5.883
Ethylbenzene	20.00	20.25	12.6 - 27.4	10.706	10.686 - 10.726
Toluene	20.00	21.00	15.4 - 24.6	8.579	8.559 - 8.599
M/P Xylene	40.00	45.30	29.8 - 61.4	10.885	10.865 - 10.905
O Xylene	20.00	20.14	14.0 - 27.0	11.437	11.417 - 11.457

SURROGATE	PREDICTED CONC	ACTUAL CONCENTRATION	% D
a,a,a-Trifluorotoluene-SS	100	102	2.0
Bromobluorobenzene-SS	100	97	3.0

Comments:

FORM VII

CH2M HILL
Analytical Services

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CONTINUING CALIBRATION
GASOLINE RANGE ORGANICS

Continuing Calibration Date: 09/14/97
Continuing Calibration Time: 17:35
Continuing Calibration File: 9716FDC0704

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 08/26/97
Matrix: Water

RESPONSE FACTOR
(1.00E+06)

COMPOUND	INITIAL MEAN RF	CONTINUING RF	% D
Gasoline Range Organics	1.300	1.321	1.59

Comments:

FORM VII

CH2M HILL
Analytical Services

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Redding, CA 96003-1412

Phone: (916) 244-5227
Fax: (916) 244-4109

CONTINUING CALIBRATION
PURGEABLE AROMATICS

Continuing Calibration Date: 09/14/97
Continuing Calibration Time: 18:13
Continuing Calibration File: 9715PDC0705

Method: 8020A(MOD)
Initial Calibration Date: 08/26/97
Matrix: Water

COMPOUND	REF. AMT.	CONT. CONT. CAL. CONC.	RANGE	RETENTION TIME	RETENTION TIME WINDOW
Benzene	20.00	19.51	15.4 - 24.6	5.846	5.806 - 5.886
Ethylbenzene	20.00	20.62	12.6 - 27.4	10.705	10.685 - 10.725
Toluene	20.00	21.22	15.4 - 24.6	8.580	8.560 - 8.600
M/P Xylene	40.00	46.04	29.8 - 61.4	10.886	10.866 - 10.906
O Xylene	20.00	20.07	14.0 - 27.0	11.438	11.418 - 11.458

SURROGATE	PREDICTED CONC	ACTUAL CONCENTRATION	% D
a,a,a-Trifluorotoluene-SS	100	101	1.0
Bromobluorobenzene-SS	100	104	4.0

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

Phone: (916) 244-5227
Fax: (916) 244-4109

ANALYTICAL SEQUENCE
GASOLINE RANGE ORGANICS/PURGEABLE AROMATICS

Instrument ID: TRACOR 540, DB-624 Lab Ref. No.: RD920

Method: 8020A(MOD) / ADEC PUBL-AK 101, 11/95

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	TIME ANALYZED
5.0 PPB	INITIAL	08/26/97	14:09
10 PPB	INITIAL	08/26/97	14:47
20 PPB	INITIAL	08/26/97	15:26
50 PPB	INITIAL	08/26/97	16:04
100 PPB	INITIAL	08/26/97	16:43
200 PPB	INITIAL	08/26/97	17:21
0.025 PPM	INITIAL	08/26/97	19:16
0.25 PPM	INITIAL	08/26/97	19:54
0.50 PPM	INITIAL	08/26/97	20:32
1.0 PPM	INITIAL	08/26/97	21:10
2.0 PPM	INITIAL	08/26/97	21:48
20 PPB	CONTINUING	09/11/97	07:55
BSB10911	BSB10911	09/11/97	09:55
RD920002	TAL97SS123F	09/11/97	11:28
RD920003	TAL97SS124F	09/11/97	12:06
RD920004	TAL97SS125F	09/11/97	12:45
RD920008	TAL97SS129S	09/11/97	13:23
RD920009	TAL97SS130S	09/11/97	14:02
RD920010	TAL97SS131S	09/11/97	14:40
RD920011	TAL97SS132S	09/11/97	15:19
20 PPB	CONTINUING	09/11/97	16:36
0.50 PPM	CONTINUING	09/14/97	08:36
20 PPB	CONTINUING	09/14/97	09:14
GSB10914TR	GSB10914TR	09/14/97	11:09
RD920001	TAL97SS121V	09/14/97	11:52
0.50 PPM	CONTINUING	09/14/97	17:35
20 PPB	CONTINUING	09/14/97	18:13

Comments:

FORM VIII

QC data

Report of Analytical Results

Client Sample ID: BSB10911
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: None
Date Received: None
Date Extracted: None
Date Analyzed: 09/11/97 00:00 (Thu)

Reference No: LABQC
Lab Sample ID: BSB10911
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.05 U	mg/Kg	0.05
Ethylbenzene	100-41-4	0.05 U	mg/Kg	0.05
Toluene	108-88-3	0.05 U	mg/Kg	0.05
Xylenes (Total)	N/A	0.05 U	mg/Kg	0.05
a,a,a-Trifluorotoluene - SS	98-08-8	100	%rec	
Bromofluorobenzene - SS	460-00-4	72	%rec	

(9768)

Report of Analytical Results

Client Sample ID: GSB10914TR
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: None
Date Received: None
Date Extracted: None
Date Analyzed: 09/14/97 00:00 (Sun)

Reference No: LABQC
Lab Sample ID: GSB10914TR
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.05 U	mg/Kg	0.05
Toluene	108-88-3	0.05 U	mg/Kg	0.05
Ethylbenzene	100-41-4	0.05 U	mg/Kg	0.05
Xylenes (Total)	N/A	0.05 U	mg/Kg	0.05
Gasoline Range Organics	GASCOMP	5.0 U	mg/Kg	5.0
aaa-Trifluorotoluene - SS	98-08-8	103	%rec	
Bromofluorobenzene - SS	460-00-4	84	%rec	

(9768)

GC DIESEL RANGE ORGANICS

CASE NARRATIVE
GC DIESEL RANGE ORGANICS

CH2M Hill Lab Reference No./SDG.: RD920

Project: FAA Tanana FST Management Program

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

II. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. METHOD

Preparation: N/A
Cleanup: N/A
Analysis: ADEC PUBL-AK 102, 11/95

IV. PREPARATION

Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration : All acceptance criteria were met.

B. Blanks: All acceptance criteria were met.

C. Surrogates: Due to the required dilution, surrogate recoveries could not be determined for RD920004, RD920008, RD920009, and RD920010.

D. Spikes: Due to the level of target analytes in the native sample and a non-homogenous sample matrix, the RPD in the MS/MSD performed on RD920011 was 41. The LCS met all acceptance criteria.

E. Samples: Due to the level of target analytes, RD920004, RD920008, RD920009, and RD920010 were analyzed on a diluted basis. Reporting limits have been adjusted accordingly.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and QAL, Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

SIGNED: Doug Burnett DATE: 10-6-97

Douglas Burnett
Resource Chemist, Organics

Sample data

Report of Analytical Results

Client Sample ID: TAL97SS129S
Sample Description: None
Sample Matrix: Soil
Dilution: 100.00

Date Collected: 08/26/97 08:30 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/05/97 08:00 (Fri)
Date Analyzed: 09/14/97 00:00 (Sun)

Reference No: RD920
Lab Sample ID: RD920008
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	21000	mg/Kg	490
o-Terphenyl - SS	84-15-1	0 D	%rec	

(9787)

Report of Analytical Results

Client Sample ID: TAL97SS130S
Sample Description: None
Sample Matrix: Soil
Dilution: 100.00

Date Collected: 08/26/97 08:31 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/05/97 08:00 (Fri)
Date Analyzed: 09/15/97 00:00 (Mon)

Reference No: RD920
Lab Sample ID: RD920009
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	22000	mg/Kg	490
o-Terphenyl - SS	84-15-1	0 D	%rec	

(9787)

Report of Analytical Results

Client Sample ID: TAL97SS131S
Sample Description: None
Sample Matrix: Soil
Dilution: 100.00

Date Collected: 08/26/97 08:32 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/05/97 08:00 (Fri)
Date Analyzed: 09/15/97 00:00 (Mon)

Reference No: RD920
Lab Sample ID: RD920010
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	21000	mg/Kg	490
o-Terphenyl - SS	84-15-1	0 D	%rec	

(9787)

Report of Analytical Results

Client Sample ID: TAL97SS132S
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: 08/26/97 08:33 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/05/97 08:00 (Fri)
Date Analyzed: 09/15/97 00:00 (Mon)

Reference No: RD920
Lab Sample ID: RD920011
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	210	mg/Kg	5
o-Terphenyl - SS	84-15-1	90	%rec	

(9787)

QC Summary

SURROGATE RECOVERY SUMMARY
DIESEL RANGE ORGANICS

Instrument ID: VARIAN 3700, RTX-5 Lab Ref. No.: RD920

Matrix: SOIL Method: ADEC PUBL-AK 102, 11/95

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	SURROGATE STANDARD O-TERPHENYL
ASB10905	ASB10905	91
RD920001	TAL97SS121V	95
RD920002	TAL97SS123F	94
RD920003	TAL97SS124F	90
RD920004	TAL97SS125F	0 D
RD920005	TAL97SS126F	90
RD920006	TAL97SS127F	90
RD920007	TAL97SS128F	91
RD920008	TAL97SS128S	0 D
RD920009	TAL97SS129S	0 D
RD920010	TAL97SS130S	0 D
RD920011	TAL97SS131S	90
RD920011MS	97SS131SMS	79
RD920011MSD	97SS131SMSD	81

Surrogate Standard	QC Limits	
	Method Blank	Samples
o-Terphenyl	60 - 120	50 - 150

Surrogate standard reported as percent recovery.

Comments: D - Surrogate recovery could not be determined due to the required dilution.

FORM II

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULTS

Lab Sample ID: RD920011
Client ID: TAL97SS132S
Date Analyzed: 09/15/97

Analysis: ADEC PUBL-AK 102, 11/95
Matrix: SOIL

Compound	Concentration Spiked (mg/Kg)	Sample Result (mg/Kg)	Spike Result (mg/Kg)	Spike Percent Recovery
Diesel Range Organics	240	210	440	96

Compound	Concentration Spiked (mg/Kg)	Sample Result (mg/Kg)	Duplicate Spike Result (mg/Kg)	Spike Percent Recovery	RPD
Diesel Range Organics	240	210	560	146	41.4

Accuracy:

$$\text{Percent Recovery} = \frac{\text{Spike Result - Sample Result}}{\text{Concentration Spiked}} \times 100$$

Precision:

$$\text{RPD} = \frac{\text{Spike \% Rec. - Duplicate Spike \% Rec.}}{\text{Spike \% Rec. + Duplicate Spike \% Rec.}} \times 200$$

Comments:

FORM III

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

Phone: (916) 244-5227
Fax: (916) 244-4109

METHOD BLANK SUMMARY
DIESEL RANGE ORGANICS

Matrix: SOIL
Method: ADEC PUBL-AK 102, 11/95
Date Extracted: 09/05/97
Date Analyzed: 09/14/97
Time Analyzed: 04:17
Instrument ID: VARIAN 3700, RTX-5
Lab File ID: 9704DEB1939

Lab Sample ID: ASB10905
Lab Ref. No.: RD920

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES AND MS/MSD:

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED
RD920001	TAL97SS121V	09/14/97
RD920002	TAL97SS123F	09/14/97
RD920003	TAL97SS124F	09/14/97
RD920004	TAL97SS125F	09/14/97
RD920005	TAL97SS126F	09/14/97
RD920006	TAL97SS127F	09/14/97
RD920007	TAL97SS128F	09/14/97
RD920008	TAL97SS128S	09/14/97
RD920009	TAL97SS129S	09/15/97
RD920010	TAL97SS130S	09/15/97
RD920011	TAL97SS131S	09/15/97
RD920011MS	97SS131SMS	09/15/97
RD920011MSD	97SS131SMSD	09/15/97

Comments:

FORM IV

Standards data

INITIAL CALIBRATION
DIESEL RANGE ORGANICS

Date Analyzed: 08/30/97
Instrument ID: VARIAN 3700, RTX-5

Method: ADEC PUBL-AK 101, 11/95
Matrix: Water

RESPONSE FACTOR
(1.00E+6)

Compound	0.2 mg/ml	0.5 mg/ml	1.0 mg/ml	3.0 mg/ml	5.0 mg/ml	10 mg/ml	$\overline{RF}$	% RSD
Diesel Range Organics	4.998	5.111	4.636	4.323	4.465	4.177	4.618	8.06

RESPONSE FACTOR
(1.00E+03)

Compound	0.2 mg/ml	0.5 mg/ml	1.0 mg/ml	3.0 mg/ml	5.0 mg/ml	10 mg/ml	$\overline{RF}$	% RSD
o-Terphenyl - SS	9.770	9.773	9.729	9.146	9.880	9.236	9.589	3.27

Comments:

FORM VI

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5207
Fax No. 916 244-4109

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 09/13/97
Continuing Calibration Time: 22:14
Continuing Calibration File: 9704DEC1931

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 08/30/97
Matrix: Water

COMPOUND	PREDICTED CONC.	ACTUAL CONC.	% D
Diesel Range Organics	3.00	3.10	3.3
o-Terphenyl - SS	100	97	3

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 243-1109

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 09/14/97
Continuing Calibration Time: 05:48
Continuing Calibration File: 9704DEC1941

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 08/30/97
Matrix: Water

COMPOUND	PREDICTED CONC.	ACTUAL CONC.	% D
Diesel Range Organics	3.00	3.21	7.0
o-Terphenyl - SS	100	103	3

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4099

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 09/14/97
Continuing Calibration Time: 13:06
Continuing Calibration File: 9704DEC1945

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 08/30/97
Matrix: Water

COMPOUND	PREDICTED CONC.	ACTUAL CONC.	% D
Diesel Range Organics	3.00	3.24	8.0
o-Terphenyl - SS	100	109	9

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4199

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 09/14/97
Continuing Calibration Time: 22:11
Continuing Calibration File: 9704DEC1957

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 08/30/97
Matrix: Water

COMPOUND	PREDICTED CONC.	ACTUAL CONC.	% D
Diesel Range Organics	3.00	3.14	4.7
o-Terphenyl - SS	100	106	6

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4109

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 09/15/97
Continuing Calibration Time: 04:14
Continuing Calibration File: 9704DEC1965

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 08/30/97
Matrix: Water

COMPOUND	PREDICTED CONC.	ACTUAL CONC.	% D
Diesel Range Organics	3.00	3.30	10.1
o-Terphenyl - SS	100	108	8

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4109

ANALYTICAL SEQUENCE
DIESEL RANGE ORGANICS

Instrument ID: VARIAN 3700, RTX-5 Lab Ref. No.: RD920

Method: ADEC PUBL-AK 102, 11/95

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	TIME ANALYZED
0.20 mg/mL	INITIAL	08/30/97	13:59
0.50 mg/mL	INITIAL	08/30/97	14:44
1.0 mg/mL	INITIAL	08/30/97	15:29
3.0 mg/mL	INITIAL	08/30/97	16:13
5.0 mg/mL	INITIAL	08/30/97	16:58
10 mg/mL	INITIAL	08/30/97	17:43
3.0 mg/mL	CONTINUING	09/13/97	22:14
ASB10905	ASB10905	09/14/97	04:17
3.0 mg/mL	CONTINUING	09/14/97	05:48
3.0 mg/mL	CONTINUING	09/14/97	13:06
RD920001	TAL97SS121V	09/14/97	16:53
RD920002	TAL97SS123F	09/14/97	17:38
RD920003	TAL97SS124F	09/14/97	18:24
RD920004	TAL97SS125F	09/14/97	19:09
RD920005	TAL97SS126F	09/14/97	19:55
RD920006	TAL97SS127F	09/14/97	20:40
3.0 mg/mL	CONTINUING	09/14/97	22:11
RD920007	TAL97SS128F	09/14/97	22:56
RD920008	TAL97SS128S	09/14/97	23:42
RD920009	TAL97SS129S	09/15/97	00:27
RD920010	TAL97SS130S	09/15/97	01:12
RD920011	TAL97SS131S	09/15/97	01:58
RD920011MS	97SS131SMS	09/15/97	02:43
RD920011MSD	97SS131SMSD	09/15/97	03:29
3.0 mg/mL	CONTINUING	09/15/97	04:14

Comments:

FORM VIII

QC data

Report of Analytical Results

Client Sample ID: ASB10905
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: None
Date Received: None
Date Extracted: 09/05/97 08:00 (Fri)
Date Analyzed: 09/14/97 00:00 (Sun)

Reference No: LABQC
Lab Sample ID: ASB10905
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	4 U	mg/Kg	4
o-Terphenyl - SS	84-15-1	91	%rec	

(9787)

Report of Analytical Results

Client Sample ID: TAL97SS132SM
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: 08/26/97 08:33 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/05/97 08:00 (Fri)
Date Analyzed: 09/15/97 00:00 (Mon)

Reference No: RD920
Lab Sample ID: RD920011MS
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	96	%rec	
o-Terphenyl - SS	84-15-1	79	%rec	

(9787)

Report of Analytical Results

Client Sample ID: TAL97SS132SM
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: 08/26/97 08:33 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/05/97 08:00 (Fri)
Date Analyzed: 09/15/97 00:00 (Mon)

Reference No: RD920
Lab Sample ID: RD920011MSD
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	146	%rec	
o-Terphenyl - SS	84-15-1	81	%rec	

(9787)

QUALITY ANALYTICAL LABORATORIES, INC.

CHAIN OF CUSTODY RECORD AND AGREEMENT TO PERFORM SERVICES

Field	Entry
Project #	142314.A1.F9
Purchase Order #	
Project Name	ZAA TANANA
Company Name	CH2M HILL / ANC
Project Manager or Contact & Phone #	TOM WOLF / ANC
Report Copy to:	TOM WOLF / ANC
Requested Completion Date:	Normal
Site ID	
Sample Disposal:	Dispose ☒ Return ☐

☐ LGN
One Innovation Drive, Suite C
Alachua, FL 32615-9586
(904) 462-3050 FAX (904) 462-1670

☒ LRD
5090 Caterpillar Road
Redding, CA 96003-1412
(916) 244-5227 FAX (916) 244-4109

☐ LMG
2567 Fairlane Drive
Montgomery, AL 36116-1622
(334) 271-2440 FAX (334) 271-3428

☐ LKW
Canviro Analytical Laboratories, Inc.
50 Bathurst, Unit 12
Waterloo, Ontario, Canada N2V 2C5
(519) 747-2575 FAX (519) 747-3806

THIS AREA FOR LAB USE ONLY

Lab #	Page	of
Client Service	Price Source A P Q S	
Acct Code	Test Group	
Project Code	Ack. Gen.	
LIMS Ver	Login	Mult.
COC Review		

97 Sampling

Date	Time	COMP	GRAB	WATER	SOIL	CLIENT SAMPLE ID (9 CHARACTERS)	QC ID (3 CHAR)	# OF CONTAINERS	DRO	BTEX (MeOH)	8260	Lead	Lead paint Pole	GRO	SAMPLE REMARKS	LAB 1 ID	LAB 2 ID
8/26	0834		X		X	TAL97SS13	3S	2	X	X					2oz WT 87.29		
8/26	0835		X		X	TAL97SS13	4S	2	X	X					87.79		
8/26	0836		X		X	TAL97SS13	5S	2	X	X					87.57		
8/26	1000		X			TAL97PS03	6P	1					X				
8/26	1530		X		X	TAL97SS13	7S	2	X	X					87.49		
8/26	1700		X	X		TAL97RB00	2	8	X	X	X	X		X			
8/26	1531		X		X	TAL97SS13	8S	1	X								
8/26	1532		X		X	TAL97SS13	9S	2	X	X					87.55		
8/26	1533		X		X	TAL97SS14	0S	1	X								
8/26	1534		X		X	TAL97SS14	1S	1	X								
8/26	1535		X		X	TAL97SS14	2S	1	X								

Sampled By & Title (Please sign and print name)	Date/Time	Relinquished By (Please sign and print name)	Date/Time
[signature]	8/26/97 0834	[signature]	8/27/97 0700
Received By (Please sign and print name)	Date/Time	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Shipped Via: UPS (Fed-Ex) Other ______	Shipping #: Charter → Fed-x → RDD

HAZWRAP/NESSA: Y N	
EDATA: Y N	
QC LEVEL 1 2 3 OTHER ______	
pH	Ice
Custody Seal	Temp

Batch Remarks: Fed-x # 551911430

Instructions and Agreement Provisions on Reverse Side

DISTRIBUTION: Original - LAB, Yellow - LAB, Pink - Client
REV 5/95 LAB FORM 340

CH2M HILL
Analytical Services
5090 Caterpillar Road
Redding, CA
96003-1412
Tel 916.244.5227
Fax 916.244.4109

CH2MHILL

Mr. Tom Wolf
CH2M HILL/ANC
301 West Northern Lights Boulevard
Suite 601
Anchorage, AK 99503-2691

Analytical Report
FAA Tanana FST Management Program
RD921

October 8, 1997

Submitted by:

Brian Geers
Project Manager/Client Services

Organic Data Qualifiers

A -- This qualifier indicates that a TIC is a suspected aldol-condensation product.

B-- This flag is used when the analyte is found in the associated blank as well as the sample. This notation indicates possible blank contamination and suggests that the data user evaluate these compounds and their amounts carefully.

C-- The "C" flag indicates the presence of this compound has been confirmed by the GC/MS analysis.

D-- This qualifier is used for all compounds identified in an analysis at a secondary dilution factor. "D" qualifiers are used only for the samples reported at more than one dilution factor.

E-- This flag indicates that the value reported exceeds the linear calibration range for that compound. Therefore, the sample should be reanalyzed at the appropriate dilution. The "E" qualified amount is an estimated concentration, and the results of the dilution will be reported on a separate Form I.

I-- This qualifier indicates that the reporting limit adjacent to the "I" qualifier has been raised. It is used when chromatographic interference prohibits detection of a compound at a level below the concentration expressed on the Form I.

J-- Indicates an estimated value. It is used when the data indicates the presence of a target compound below the reporting limit or the presence of a Tentatively Identified Compound (TIC)

N-- This qualifier indicates presumptive evidence of a compound. This flag is only used for Tentatively Identified Compounds (TIC), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the "N" qualifier is not used.

P-- This qualifier is used for pesticide/Aroclor target analytes when there is a greater than 25% difference for detected concentrations between the two columns. The lower of the two values is reported on Form I and flagged with a "P".

U-- Indicates the compound was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that compound. The reporting limit can vary from sample to sample depending on dilution factors or percent moisture adjustments when indicated.

Organic Sample ID Qualifiers

The qualifiers that may be appended to the Lab Sample ID and/or the Client Sample ID for organic analysis are defined below:

DL -- Diluted reanalysis . Indicates that the results were determined in an analysis of a secondary dilution of a sample or extract. The "DL" suffix may be followed by a digit to indicate multiple dilutions of the sample or extract. The results of more than one diluted reanalyses may be reported.

MS-- Matrix spike (may be followed by a digit to indicate multiple matrix spikes within a sample set).

MSD-- Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spikes within a sample set).

R-- Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalyses of the sample at the same dilution.

RE-- Re-extraction analysis. The sample was re-extracted and reanalyzed. May be followed by a digit to indicate multiple re-extracted analyses of the same sample at the same dilution.

Sample ID Cross-reference Table

CH2M Hill Lab Sample ID		Client Sample ID	Collect Date	Sample Matrix	Additional Description
FS = Field Sample; RB = Rinsate Blank					
RD921001	FS	TAL97SS133S	08/26/97	Soil	
RD921002	FS	TAL97SS134S	08/26/97	Soil	
RD921003	FS	TAL97SS135S	08/26/97	Soil	
RD921004	FS	TAL97PS136P	08/26/97	Lead Paint	
RD921005	FS	TAL97SS137S	08/26/97	Soil	
RD921006	RB	TAL97RB002	08/26/97	Water	
RD921007	FS	TAL97SS138S	08/26/97	Soil	
RD921008	FS	TAL97SS139S	08/26/97	Soil	
RD921009	FS	TAL97SS140S	08/26/97	Soil	
RD921010	FS	TAL97SS141S	08/26/97	Soil	
RD921011	FS	TAL97SS142S	08/26/97	Soil	

The above lab sample ID's and cross reference information apply to samples as received by the laboratory. Modifiers to the lab sample ID may be added for internal tracking purposes. Any modified sample ID will be reflected in the appropriate case narrative only.

GASOLINE RANGE ORGANICS/PURGEABLE AROMATICS

CASE NARRATIVE
GC GASOLINE RANGE ORGANICS/PURGEABLE AROMATICS

CH2M Hill Lab Reference No./SDG.: RD921

Project: FAA Tanana FST Management Program

I. **RECEIPT**

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

II. **HOLDING TIMES**

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. **METHOD**

Preparation: ADEC PUBL-AK 101, 11/95
Cleanup: N/A
Analysis: SW-846 8020A(MOD) / ADEC PUBL-AK 101, 11/95

IV. **PREPARATION**

Sample preparation proceeded normally.

V. **ANALYSIS**

A. Calibration : The surrogate bromofluorobenzene was omitted from the continuing calibration (9715PDC0631) on 9/11/97. The standards bracketing this continuing calibration met all acceptance criteria. No corrective action is recommended.

B. Blanks: All acceptance criteria were met.

C. Surrogates: All acceptance criteria were met.

D. Spikes: All acceptance criteria were met.

E. Samples: Sample analyses proceeded normally.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and QAL, Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

SIGNED: Doug Burnett DATE: 9-24-97
Douglas Burnett
Resource Chemist, Organics

Sample data

Report of Analytical Results

Client Sample ID: TAL97SS133S
Sample Description: None
Sample Matrix: Soil
Dilution: 0.67

Date Collected: 08/26/97 08:34 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: None
Date Analyzed: 09/11/97 00:00 (Thu)

Reference No: RD921
Lab Sample ID: RD921001
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.04 U	mg/Kg	0.04
Ethylbenzene	100-41-4	0.63	mg/Kg	0.04
Toluene	108-88-3	0.79	mg/Kg	0.04
Xylenes (Total)	N/A	7.8	mg/Kg	0.04
a,a,a-Trifluorotoluene - SS	98-08-8	91	%rec	
Bromofluorobenzene - SS	460-00-4	119	%rec	

(9767)

Report of Analytical Results

Client Sample ID: TAL97SS134S
Sample Description: None
Sample Matrix: Soil
Dilution: 0.64

Date Collected: 08/26/97 08:35 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: None
Date Analyzed: 09/11/97 00:00 (Thu)

Reference No: RD921
Lab Sample ID: RD921002
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.04 U	mg/Kg	0.04
Ethylbenzene	100-41-4	0.49	mg/Kg	0.04
Toluene	108-88-3	0.42	mg/Kg	0.04
Xylenes (Total)	N/A	3.4	mg/Kg	0.04
a,a,a-Trifluorotoluene - SS	98-08-8	106	%rec	
Bromofluorobenzene - SS	460-00-4	101	%rec	

(9767)

Report of Analytical Results

Client Sample ID: TAL97SS135S
Sample Description: None
Sample Matrix: Soil
Dilution: 0.47

Date Collected: 08/26/97 08:36 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: None
Date Analyzed: 09/11/97 00:00 (Thu)

Reference No: RD921
Lab Sample ID: RD921003
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.03 U	mg/Kg	0.03
Ethylbenzene	100-41-4	0.64	mg/Kg	0.03
Toluene	108-88-3	0.36	mg/Kg	0.03
Xylenes (Total)	N/A	4.2	mg/Kg	0.03
a,a,a-Trifluorotoluene - SS	98-08-8	89	%rec	
Bromofluorobenzene - SS	460-00-4	108	%rec	

(9767)

QC Summary

SURROGATE RECOVERY SUMMARY
GASOLINE RANGE ORGANICS/PURGEABLE AROMATICS

Instrument ID: TRACOR 540, DB-624 Lab Ref. No.: RD921

Matrix: WATER Method: 8020A(MOD) / ADEC PUBL-AK 101, 11/95

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	SURROGATE STANDARD A,A,A-TRIFLUOROTOLUENE	SURROGATE STANDARD BROMOFLUOROBENZENE
GWB10909	GWB10909	101	73
RD921006	TAL97RB138S	106	84

Surrogate standard reported as percent recovery.

Comments:

FORM II

0111

CH2M HILL
Analytical Services
5090 Caterpillar Road
Redding, CA 96003-1412
Phone: (916) 244-5227
Fax: (916) 244-4109

SURROGATE RECOVERY SUMMARY
PURGEABLE AROMATICS

Instrument ID: TRACOR 540, DB-624 Lab Ref. No.: RD921

Matrix: SOIL Method: 8020A(MOD)

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	SURROGATE STANDARD A,A,A-TRIFLUOROTOLUENE	SURROGATE STANDARD BROMOFLUOROBENZENE
BSB10911	BSB10911	100	72
RD921001	TAL97SS133S	91	119
RD921002	TAL97SS134S	106	101
RD921003	TAL97SS135S	89	108
RD921005	TAL97SS137S	86	146
RD921008	TAL97SS139S	108	150

Surrogate standard reported as percent recovery.

Comments:

FORM II a

CH2M HILL
Analytical Services
5090 Caterpillar Road
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Phone: (916) 244-5227
Fax: (916) 244-4109

METHOD BLANK SUMMARY
GASOLINE RANGE ORGANICS/PURGEABLE AROMATICS

Matrix: WATER
Method: 8020A(MOD)/ADEC PUBL-AK 101, 11/95
Date Extracted: N/A
Date Analyzed: 09/09/97
Time Analyzed: 11:39
Instrument ID: TRACOR 540, DB-624
Lab File ID: 9715PDB0606/9716FDB0606

Lab Sample ID: GWB10909
Lab Ref. No.: RD921

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLE:

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED
RD921006	TAL97RB138S	09/09/97

Comments:

FORM IV

CH2M HILL
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Phone: (916) 244-5227
Fax: (916) 244-4109

METHOD BLANK SUMMARY
PURGEABLE AROMATICS

Matrix: SOIL
Method: 8020A(MOD)
Date Extracted: N/A
Date Analyzed: 09/11/97
Time Analyzed: 09:55
Instrument ID: TRACOR 540, DB-624
Lab File ID: 9715PDB0622

Lab Sample ID: GSB10911
Lab Ref. No.: RD921

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED
RD921001	TAL97SS133S	09/11/97
RD921002	TAL97SS134S	09/11/97
RD921003	TAL97SS135S	09/11/97
RD921005	TAL97SS137S	09/11/97
RD921008	TAL97SS139S	09/11/97

Comments:

FORM IV

CH2M HILL
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Redding, CA 96003-1412
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Standards data

INITIAL CALIBRATION
PURGEABLE AROMATICS

Date Analyzed: 08/26/97
Instrument ID: TRACOR 540, DB-624

Method: 8020A(MOD)
Matrix: Water

Compound	5.0 PPB	10 PPB	20 PPB	50 PPB	100 PPB	200 PPB	$\overline{RF}$	% RSD
Benzene	2.7652	2.2361	2.0417	1.8940	1.9206	1.8895	2.1245	16.03
Ethylbenzene	2.3241	1.9349	1.7416	1.6279	1.6659	1.6391	1.8223	14.86
Toluene	2.7306	2.1695	1.9710	1.8361	1.8630	1.8263	2.0661	16.94
P/M Xylene	2.6515	2.2102	2.0032	1.9309	1.9719	1.8794	2.1079	13.73
O Xylene	2.2537	1.9162	1.7229	1.6175	1.6419	1.6144	1.7944	14.05
Surrogate								
a,a,a-Trifluorotoluene-SS	0.6456	0.6411	0.6414	0.6346	0.6312	0.6201	0.6357	1.45
Bromofluorobenzene-SS	0.7410	0.7491	0.7335	0.7544	0.7810	0.7621	0.7535	2.23

Comments:

FORM VI

0116

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4109

INITIAL CALIBRATION
GASOLINE RANGE ORGANICS

Date Analyzed: 08/26/97
Instrument ID: TRACOR 540, DB-624

Method: ADEC PUBL-AK 101, 11/95
Matrix: Water

RESPONSE FACTOR
(1.00E+06)

Compound	RRF(0.025) PPM	RRF(0.25) PPM	RRF (0.50) PPM	RRF(1.0) PPM	RRF(2.0) PPM	$\overline{RF}$	% RSD
Gasoline Range Organics	1.067	1.379	1.334	1.272	1.450	1.300	11.2

Comments:

FORM VI

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

Phone: (916) 244-5227
Fax: (916) 244-4109

CONTINUING CALIBRATION
GASOLINE RANGE ORGANICS

Continuing Calibration Date: 09/09/97
Continuing Calibration Time: 09:06
Continuing Calibration File: 9716FDC0602

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 08/26/97
Matrix: Water

RESPONSE FACTOR
(1.00E+06)

COMPOUND	INITIAL MEAN RF	CONTINUING RF	% D
Gasoline Range Organics	1.300	1.288	0.95

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

Phone: (916) 244-5227
Fax: (916) 244-4109

CONTINUING CALIBRATION
PURGEABLE AROMATICS

Continuing Calibration Date: 09/09/97
Continuing Calibration Time: 09:44
Continuing Calibration File: 9715PDC0603

Method: 8020A(MOD)
Initial Calibration Date: 08/26/97
Matrix: Water

COMPOUND	REF. AMT.	CONT. CONT. CAL. CONC.	RANGE	RETENTION TIME	RETENTION TIME WINDOW
Benzene	20.00	20.27	15.4 - 24.6	5.845	5.805 - 5.885
Ethylbenzene	20.00	20.65	12.6 - 27.4	10.709	10.689 - 10.729
Toluene	20.00	21.20	15.4 - 24.6	8.584	8.564 - 8.604
M/P Xylene	40.00	44.28	29.8 - 61.4	10.889	10.869 - 10.909
O Xylene	20.00	21.35	14.0 - 27.0	11.439	11.419 - 11.459

SURROGATE	PREDICTED CONC	ACTUAL CONCENTRATION	% D
a,a,a-Trifluorotoluene-SS	100	99	1.0
Bromobluorobenzene-SS	100	95	5.0

Comments:

FORM VII

CH2M HILL
Analytical Services

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CONTINUING CALIBRATION
GASOLINE RANGE ORGANICS

Continuing Calibration Date: 09/09/97
Continuing Calibration Time: 19:16
Continuing Calibration File: 9716FDC0618

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 08/26/97
Matrix: Water

RESPONSE FACTOR
(1.00E+06)

COMPOUND	INITIAL MEAN RF	CONTINUING RF	% D
Gasoline Range Organics	1.300	1.317	1.31

Comments:

FORM VII

CH2M HILL
Analytical Services

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Redding, CA 96003-1412

Phone: (916) 244-5227
Fax: (916) 244-4109

CONTINUING CALIBRATION
PURGEABLE AROMATICS

Continuing Calibration Date: 09/09/97
Continuing Calibration Time: 19:54
Continuing Calibration File: 9715PDC0619

Method: 8020A(MOD)
Initial Calibration Date: 08/26/97
Matrix: Water

COMPOUND	REF. AMT.	CONT. CONT. CAL. CONC.	RANGE	RETENTION TIME	RETENTION TIME WINDOW
Benzene	20.00	19.93	15.4 - 24.6	5.859	5.819 - 5.899
Ethylbenzene	20.00	20.40	12.6 - 27.4	10.720	10.700 - 10.740
Toluene	20.00	21.20	15.4 - 24.6	8.592	8.572 - 8.612
M/P Xylene	40.00	44.10	29.8 - 61.4	10.903	10.883 - 10.923
O Xylene	20.00	20.55	14.0 - 27.0	11.451	11.431 - 11.471

SURROGATE	PREDICTED CONC	ACTUAL CONCENTRATION	% D
a,a,a-Trifluorotoluene-SS	100	99	1.0
Bromobluorobenzene-SS	100	97	3.0

Comments:

FORM VII

CH2M HILL
Analytical Services

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Redding, CA 96003-1412

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Fax: (916) 244-4109

CONTINUING CALIBRATION
PURGEABLE AROMATICS

Continuing Calibration Date: 09/11/97
Continuing Calibration Time: 07:55
Continuing Calibration File: 9715PDC0620

Method: 8020A(MOD)
Initial Calibration Date: 08/26/97
Matrix: Water

COMPOUND	REF. AMT.	CONT. CONT. CAL. CONC.	RANGE	RETENTION TIME	RETENTION TIME WINDOW
Benzene	20.00	19.90	15.4 - 24.6	5.848	5.808 - 5.888
Ethylbenzene	20.00	21.04	12.6 - 27.4	10.706	10.686 - 10.726
Toluene	20.00	21.08	15.4 - 24.6	8.579	8.559 - 8.599
M/P Xylene	40.00	45.52	29.8 - 61.4	10.889	10.869 - 10.909
O Xylene	20.00	20.80	14.0 - 27.0	11.438	11.418 - 11.458

SURROGATE	PREDICTED CONC	ACTUAL CONCENTRATION	% D
a,a,a-Trifluorotoluene-SS	100	100	0.0
Bromobluorobenzene-SS	100	103	3.0

Comments:

FORM VII

CH2M HILL
Analytical Services

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Redding, CA 96003-1412

Phone: (916) 244-5227
Fax: (916) 244-4109

CONTINUING CALIBRATION
PURGEABLE AROMATICS

Continuing Calibration Date: 09/11/97
Continuing Calibration Time: 16:36
Continuing Calibration File: 9715PDC0631

Method: 8020A(MOD)
Initial Calibration Date: 08/26/97
Matrix: Water

COMPOUND	REF. AMT.	CONT. CONT. CAL. CONC.	RANGE	RETENTION TIME	RETENTION TIME WINDOW
Benzene	20.00	19.45	15.4 - 24.6	5.848	5.808 - 5.888
Ethylbenzene	20.00	20.37	12.6 - 27.4	10.718	10.698 - 10.738
Toluene	20.00	19.54	15.4 - 24.6	8.589	8.569 - 8.609
M/P Xylene	40.00	43.71	29.8 - 61.4	10.899	10.879 - 10.919
O Xylene	20.00	20.61	14.0 - 27.0	11.449	11.429 - 11.469

SURROGATE	PREDICTED CONC	ACTUAL CONCENTRATION	% D
a,a,a-Trifluorotoluene-SS	100	102	2.0
Bromobluorobenzene-SS	100	*	

Comments: * - Not spiked.

FORM VII

CH2M HILL
Analytical Services

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Redding, CA 96003-1412

Phone: (916) 244-5227
Fax: (916) 244-4109

CONTINUING CALIBRATION
PURGEABLE AROMATICS

Continuing Calibration Date: 09/12/97
Continuing Calibration Time: 00:15
Continuing Calibration File: 9715PDC0643

Method: 8020A(MOD)
Initial Calibration Date: 08/26/97
Matrix: Water

COMPOUND	REF. AMT.	CONT. CONT. CAL. CONC.	RANGE	RETENTION TIME	RETENTION TIME WINDOW
Benzene	20.00	19.60	15.4 - 24.6	5.846	5.806 - 5.886
Ethylbenzene	20.00	21.19	12.6 - 27.4	10.708	10.688 - 10.728
Toluene	20.00	20.16	15.4 - 24.6	8.584	8.564 - 8.604
M/P Xylene	40.00	47.86	29.8 - 61.4	10.885	10.865 - 10.905
O Xylene	20.00	21.26	14.0 - 27.0	11.432	11.412 - 11.452

SURROGATE	PREDICTED CONC	ACTUAL CONCENTRATION	% D
a,a,a-Trifluorotoluene-SS	100	100	0.0
Bromobluorobenzene-SS	100	101	1.0

Comments:

FORM VII

CH2M HILL
Analytical Services

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Redding, CA 96003-1412

Phone: (916) 244-5227
Fax: (916) 244-4109

ANALYTICAL SEQUENCE
GASOLINE RANGE ORGANICS/PURGEABLE AROMATICS

Instrument ID: TRACOR 540, DB-624 Lab Ref. No.: RD921

Method: 8020A(MOD) / ADEC PUBL-AK 101, 11/95

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	TIME ANALYZED
5.0 PPB	INITIAL	08/26/97	14:09
10 PPB	INITIAL	08/26/97	14:47
20 PPB	INITIAL	08/26/97	15:26
50 PPB	INITIAL	08/26/97	16:04
100 PPB	INITIAL	08/26/97	16:43
200 PPB	INITIAL	08/26/97	17:21
0.025 PPM	INITIAL	08/26/97	19:16
0.25 PPM	INITIAL	08/26/97	19:54
0.50 PPM	INITIAL	08/26/97	20:32
1.0 PPM	INITIAL	08/26/97	21:10
2.0 PPM	INITIAL	08/26/97	21:48
0.50 PPM	CONTINUING	09/09/97	09:06
20 PPB	CONTINUING	09/09/97	09:44
GWB10909	GWB10909	09/09/97	11:39
RD921006	TAL97RB138S	09/09/97	12:18
0.50 PPM	CONTINUING	09/09/97	19:16
20 PPB	CONTINUING	09/09/97	19:54
20 PPB	CONTINUING	09/11/97	07:55
BSB10911	BSB10911	09/11/97	09:55
RD921001	TAL97SS133S	09/11/97	15:57
20 PPB	CONTINUING	09/11/97	16:36
RD921002	TAL97SS134S	09/11/97	17:14
RD921003	TAL97SS135S	09/11/97	17:52
RD921005	TAL97SS137S	09/11/97	18:31
RD921008	TAL97SS139S	09/11/97	19:09
20 PPB	CONTINUING	09/12/97	00:15

Comments:

FORM VIII

QC data

Report of Analytical Results

Client Sample ID: GWB10909
Sample Description: None
Sample Matrix: Water
Dilution: 1.00

Date Collected: None
Date Received: None
Date Extracted: None
Date Analyzed: 09/09/97 00:00 (Tue)

Reference No: LABQC
Lab Sample ID: GWB10909
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	1 U	ug/L	1
Toluene	108-88-3	1 U	ug/L	1
Ethylbenzene	100-41-4	1 U	ug/L	1
Xylenes (Total)	N/A	1 U	ug/L	1
Gasoline Range Organics	GASCOMP	50 U	ug/L	50
a,a,a-Trifluorotoluene - SS	98-08-8	101	%rec	
Bromofluorobenzene - SS	460-00-4	73	%rec	

(9767)

Report of Analytical Results

Client Sample ID: BSB10911
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: None
Date Received: None
Date Extracted: None
Date Analyzed: 09/11/97 00:00 (Thu)

Reference No: LABQC
Lab Sample ID: BSB10911
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.05 U	mg/Kg	0.05
Ethylbenzene	100-41-4	0.05 U	mg/Kg	0.05
Toluene	108-88-3	0.05 U	mg/Kg	0.05
Xylenes (Total)	N/A	0.05 U	mg/Kg	0.05
a,a,a-Trifluorotoluene - SS	98-08-8	100	%rec	
Bromofluorobenzene - SS	460-00-4	72	%rec	

(9767)

GC DIESEL RANGE ORGANICS

CASE NARRATIVE
GC DIESEL RANGE ORGANICS

CH2M Hill Lab Reference No./SDG.: RD921

Project: FAA Tanana FST Management Program

I. **RECEIPT**

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

II. **HOLDING TIMES**

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. **METHOD**

Preparation: N/A
Cleanup: N/A
Analysis: ADEC PUBL-AK 102, 11/95

IV. **PREPARATION**

Sample preparation proceeded normally.

V. **ANALYSIS**

A. Calibration : All acceptance criteria were met.

B. Blanks: All acceptance criteria were met.

C. Surrogates: Surrogate recoveries could not be determined for samples RD921001, RD921002, RD921003, RD921005, RD921007, RD921008, RD921009, RD921010 and RD921011 due to the required dilution.

D. Spikes: All acceptance criteria were met.

E. Samples: Samples RD921001, RD921002, RD921003, RD921005, RD921007, RD921008, RD921009, RD921010 and RD921011 were analyzed on a diluted basis due to the concentration of target analytes. Reporting limits have been adjusted accordingly.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and QAL, Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

SIGNED: Doug Burnett DATE: 10-7-97

Douglas Burnett
Resource Chemist, Organics

Sample data

Report of Analytical Results

Client Sample ID: TAL97SS133S
Sample Description: None
Sample Matrix: Soil
Dilution: 100.00

Date Collected: 08/26/97 08:34 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/08/97 11:30 (Mon)
Date Analyzed: 09/15/97 19:19 (Mon)

Reference No: RD921
Lab Sample ID: RD921001
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	29000	mg/Kg	480
o-Terphenyl - SS	84-15-1	0 D	%rec	

(9809)

Report of Analytical Results

Client Sample ID: TAL97SS134S
Sample Description: None
Sample Matrix: Soil
Dilution: 100.00

Date Collected: 08/26/97 08:35 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/08/97 11:30 (Mon)
Date Analyzed: 09/15/97 20:05 (Mon)

Reference No: RD921
Lab Sample ID: RD921002
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	17000	mg/Kg	490
o-Terphenyl - SS	84-15-1	0 D	%rec	

(9809)

Report of Analytical Results

Client Sample ID: TAL97SS135S
Sample Description: None
Sample Matrix: Soil
Dilution: 100.00

Date Collected: 08/26/97 08:36 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/08/97 11:30 (Mon)
Date Analyzed: 09/15/97 22:22 (Mon)

Reference No: RD921
Lab Sample ID: RD921003
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	9700	mg/Kg	490
o-Terphenyl - SS	84-15-1	0 D	%rec	

(9809)

QC Summary

SURROGATE RECOVERY SUMMARY
DIESEL RANGE ORGANICS

Instrument ID: VARIAN 3700, RTX-5 Lab Ref. No.: RD921

Matrix: WATER Method: ADEC PUBL-AK 102, 11/95

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	SURROGATE STANDARD O-TERPHENYL
AWB10902	AWB10902	98
RD921006	TAL97RB002	96

Surrogate Standard	QC Limits	
	Method Blank	Samples
o-Terphenyl	60 - 120	50 - 150

Surrogate standard reported as percent recovery.

Comments:

FORM II

CH2M HILL
Analytical Services
5090 Caterpillar Road
Redding, CA 96003-1412
Phone: (916) 244-5227
Fax: (916) 244-4109

SURROGATE RECOVERY SUMMARY
DIESEL RANGE ORGANICS

Instrument ID: VARIAN 3700, RTX-5 Lab Ref. No.: RD921

Matrix: SOIL Method: ADEC PUBL-AK 102, 11/95

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	SURROGATE STANDARD O-TERPHENYL
ASB10908	ASB10908	95
RD921001	TAL97SS133S	0 D
RD921002	TAL97SS134S	0 D
RD921003	TAL97SS135S	0 D
RD921005	TAL97SS137S	0 D
RD921007	TAL97SS138S	0 D
RD921008	TAL97SS139S	0 D
RD921009	TAL97SS140S	0 D
RD921010	TAL97SS141S	0 D
RD921011	TAL97SS142S	0 D

Surrogate Standard	QC Limits	
	Method Blank	Samples
o-Terphenyl	60 - 120	50 - 150

Surrogate standard reported as percent recovery.

Comments: D - Surrogate recovery could not be determined due to the required dilution.

FORM II

METHOD BLANK SUMMARY
DIESEL RANGE ORGANICS

Matrix: WATER
Method: ADEC PUBL-AK 102, 11/95
Date Extracted: 09/02/97
Date Analyzed: 09/15/97
Time Analyzed: 17:48
Instrument ID: VARIAN 3700, RTX-5
Lab File ID: 9704DEB1975

Lab Sample ID: AWB10902
Lab Ref. No.: RD921

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLE:

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED
RD921006	TAL97RB002	09/15/97

Comments:

FORM IV

METHOD BLANK SUMMARY
DIESEL RANGE ORGANICS

Matrix: SOIL
Method: ADEC PUBL-AK 102, 11/95
Date Extracted: 09/08/97
Date Analyzed: 09/15/97
Time Analyzed: 14:35
Instrument ID: VARIAN 3700, RTX-5
Lab File ID: 9704DEB1971

Lab Sample ID: ASB10908
Lab Ref. No.: RD921

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED
RD921001	TAL97SS133S	09/15/97
RD921002	TAL97SS134S	09/15/97
RD921003	TAL97SS135S	09/15/97
RD921005	TAL97SS137S	09/15/97
RD921007	TAL97SS138S	09/15/97
RD921008	TAL97SS139S	09/16/97
RD921009	TAL97SS140S	09/16/97
RD921010	TAL97SS141S	09/16/97
RD921011	TAL97SS142S	09/16/97

Comments:

FORM IV

CH2M HILL
Analytical Services
5090 Caterpillar Road
Redding, CA 96003-1412
Phone: (916) 244-5227
Fax: (916) 244-4109

Standards data

INITIAL CALIBRATION
DIESEL RANGE ORGANICS

Date Analyzed: 08/30/97
Instrument ID: VARIAN 3700, RTX-5

Method: ADEC PUBL-AK 101, 11/95
Matrix: Water

RESPONSE FACTOR
(1.00E+6)

Compound	0.2 mg/ml	0.5 mg/ml	1.0 mg/ml	3.0 mg/ml	5.0 mg/ml	10 mg/ml	$\overline{RF}$	% RSD
Diesel Range Organics	4.998	5.111	4.636	4.323	4.465	4.177	4.618	8.06

RESPONSE FACTOR
(1.00E+03)

Compound	0.2 mg/ml	0.5 mg/ml	1.0 mg/ml	3.0 mg/ml	5.0 mg/ml	10 mg/ml	$\overline{RF}$	% RSD
o-Terphenyl - SS	9.770	9.773	9.729	9.146	9.880	9.236	9.589	3.27

Comments:

FORM VI

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4109

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 09/15/97
Continuing Calibration Time: 11:57
Continuing Calibration File: 9704DEC1968

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 08/30/97
Matrix: Water

COMPOUND	PREDICTED CONC.	ACTUAL CONC.	% D
Diesel Range Organics	3.00	3.45	14.8
o-Terphenyl - SS	100	119	19

Comments:

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4109

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 09/15/97
Continuing Calibration Time: 21:36
Continuing Calibration File: 9704DEC1980

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 08/30/97
Matrix: Water

COMPOUND	PREDICTED CONC.	ACTUAL CONC.	% D
Diesel Range Organics	3.00	3.13	4.3
o-Terphenyl - SS	100	105	5

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4109

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 09/16/97
Continuing Calibration Time: 03:41
Continuing Calibration File: 9704DEC1988

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 08/30/97
Matrix: Water

COMPOUND	PREDICTED CONC.	ACTUAL CONC.	% D
Diesel Range Organics	3.00	3.36	12.0
o-Terphenyl - SS	100	116	16

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4109

ANALYTICAL SEQUENCE
DIESEL RANGE ORGANICS

Instrument ID: VARIAN 3700, RTX-5 Lab Ref. No.: RD921

Method: ADEC PUBL-AK 102, 11/95

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	TIME ANALYZED
0.20 mg/mL	INITIAL	08/30/97	13:59
0.50 mg/mL	INITIAL	08/30/97	14:44
1.0 mg/mL	INITIAL	08/30/97	15:29
3.0 mg/mL	INITIAL	08/30/97	16:13
5.0 mg/mL	INITIAL	08/30/97	16:58
10 mg/mL	INITIAL	08/30/97	17:43
3.0 mg/mL	CONTINUING	09/15/97	11:57
ASB10908	ASB10908	09/15/97	14:35
ASB10902	AWB10902	09/15/97	17:48
RD921006	TAL97RB002	09/15/97	18:34
RD921001	TAL97SS133S	09/15/97	19:19
RD921002	TAL97SS134S	09/15/97	20:05
3.0 mg/mL	CONTINUING	09/15/97	21:36
RD921003	TAL97SS135S	09/15/97	22:22
RD921005	TAL97SS137S	09/15/97	23:07
RD921007	TAL97SS138S	09/15/97	23:53
RD921008	TAL97SS139S	09/16/97	00:38
RD921009	TAL97SS140S	09/16/97	01:24
RD921010	TAL97SS141S	09/16/97	02:09
RD921011	TAL97SS142S	09/16/97	02:55
3.0 mg/mL	CONTINUING	09/16/97	03:41

Comments:

FORM VIII

QC data

Report of Analytical Results

Client Sample ID: AWB10902
Sample Description: None
Sample Matrix: Water
Dilution: 1.00

Date Collected: None
Date Received: None
Date Extracted: 09/02/97 10:00 (Tue)
Date Analyzed: 09/15/97 17:48 (Mon)

Reference No: LABQC
Lab Sample ID: AWB10902
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics		0.1 U	mg/L	0.1
o-Terphenyl - SS	84-15-1	98	%rec	

(9809)

Report of Analytical Results

Client Sample ID: ASB10908
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: None
Date Received: None
Date Extracted: 09/08/97 11:30 (Mon)
Date Analyzed: 09/15/97 14:35 (Mon)

Reference No: LABQC
Lab Sample ID: ASB10908
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	4 U	mg/Kg	4
o-Terphenyl - SS	84-15-1	95	%rec	

(9809)

Paint Chips, Building 205

Chain of Custody Form

Data Package

QUALITY ANALYTICAL LABORATORIES, INC. AHCD72

CHAIN OF CUSTODY RECORD AND AGREEMENT TO PERFORM SERVICES

00005

Project # 14231/4.A1.F9	**Purchase Order #**
Project Name FAA Tanana FST Mgt. Program	
Company Name CH2M Hill / Anchorage	
Project Manager or Contact & Phone # Tom Wolf, 278-2551	**Report Copy to:** Anthony Pennino
Requested Completion Date: 8-27	**Site ID**
Sample Disposal: Dispose ☐ Return ☒ 1118K only	

☐ **LGN**
One Innovation Drive, Suite C
Alachua, FL 32615-9586
(904) 462-3050 FAX (904) 462-1670

☐ **LRD**
5090 Caterpillar Road
Redding, CA 96003-1412
(916) 244-5227 FAX (916) 244-4109

☐ **LMG**
2567 Fairlane Drive
Montgomery, AL 36116-1622
(205) 271-2440 FAX (205) 271-3428

☐ **LKW**
Canviro Analytical Laboratories, Inc.
50 Bathurst, Unit 12
Waterloo, Ontario, Canada N2V 2C5
(519) 747-2575 FAX (519) 747-3806

THIS AREA FOR LAB USE ONLY

Lab #	Page	of
Client Service	Price Source A P Q S	
Acct Code	Test Group	
Project Code	Ack. Gen.	
LIMS Ver	Login	Mult.
COC Review		

Sampling Date	Sampling Time	Type COMP	Type GRAB	Matrix WATER	Matrix SOIL	CLIENT SAMPLE ID (9 CHARACTERS)	QC ID (3 CHAR)	# OF CONTAINERS	ANALYSES REQUESTED: Lead-Rush (24Hr)	ANALYSES REQUESTED	SAMPLE REMARKS	LAB 1 ID	LAB 2 ID
8/22	0840		X			TAL97PC10	75	1	✓	Chunk		725-1	
	0820		X			TAL97ST10	8T	1	✓	" "		-2	
	0835		X			TAL97ST10	9T	1	✓	" "		-3	
	0825		X			TAL97ST11	0T	1	✓	" "		-4	
	0815		X			TAL97IS12	Q30	1	✓	" "		-5	
↓	1500		X	X		TAL97SS11	18K	1	✓	SOIL	Please Return This Sample: -1118K	-6	

Sampled By & Title (Please sign and print name) Bob Trebble	Date/Time 8/22/97	**Relinquished By** (Please sign and print name)	Date/Time
Received By (Please sign and print name) Anthony Pennino	Date/Time 8/26/97	**Relinquished By** (Please sign and print name) Anthony Pennino	Date/Time 8/26 1300
Received By (Please sign and print name) Sherry Lewis	Date/Time 8/22/97	**Relinquished By** (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	**Shipped Via** UPS Fed-Ex Other _____	**Shipping #**

HAZWRAP/NESSA: Y N
EDATA: Y N
QC LEVEL 1 2 3 OTHER _____
pH Ice
Custody Seal Temp 8.8

Batch Remarks: Rel'n

Instructions and Agreement Provisions on Reverse Side

DISTRIBUTION: Original - LAB, Yellow - LAB, Pink - Client
LAB FORM 340

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client: CH2M Hill, Inc.
Project: FAA Tanana FST Mgt. Program/ 142314.A1.F9
Sample Matrix: Solid

Service Request: A9700725
Date Collected: 8/22/97
Date Received: 8/26/97

Lead, Total

Prep Method: EPA 3050A
Analysis Method: 7420
Test Notes:

Units: mg/Kg (ppm)
Basis: As Received

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Method Blank	A970827-SB1	20	10	1	8/27/97	8/27/97	ND	
TAL97PC1075	A9700725-001	20	10	1	8/27/97	8/27/97	233000	
TAL97ST108T	A9700725-002	20	10	1	8/27/97	8/27/97	460	
TAL97ST109T	A9700725-003	20	10	1	8/27/97	8/27/97	1180	
TAL97ST110T	A9700725-004	20	10	1	8/27/97	8/27/97	680	
TAL97IS122Q	A9700725-005	20	10	1	8/27/97	8/27/97	560	
TAL97SS1118K	A9700725-006	20	10	1	8/27/97	8/27/97	240	

Approved By: Kim Tipladj Date: 8.30.97

1A/042895

COLUMBIA ANALYTICAL SERVICES, INC.

Analytical Report

Client:	CH2M Hill, Inc.	**Service Request:**	A9700784
Project:	FAA Tanana FST Mgt. Program/ 142314.A1.F9	**Date Collected:**	8/22/97
Sample Matrix:	Soil	**Date Received:**	9/5/97

Toxicity Characteristic Leaching Procedure (TCLP), EPA Method 1311
Lead

Prep Method:	EPA 3010A	Units:	mg/L (ppm)
Analysis Method:	6010A	Basis:	NA
Test Notes:			

Sample Name	Lab Code	MRL	MDL	Dilution Factor	Date Extracted	Date Analyzed	Result	Result Notes
Method Blank	A970909-TB1	0.1	0.03	1	9/9/97	9/11/97	ND	
TAL97PC1075	A9700725-001	0.1	0.03	1	9/9/97	9/11/97	21.0	
TAL97SS1118K	A9700725-006	0.1	0.03	1	9/9/97	9/11/97	0.3	

Approved By: J. Shaya-Dahl Date: 9.12.97

Spill Site, Building 600

Chain of Custody

Data Package

QUALITY ANALYTICAL LABORATORIES, INC.

CHAIN OF CUSTODY RECORD AND AGREEMENT TO PERFORM SERVICES

Project #: 142314.A1.F9

Purchase Order #:

Project Name: TAATANANA

Company Name: CH2M HILL / ANC

Project Manager or Contact & Phone #: TOM WOLF/ANC

Report Copy to: TOM WOLF/ANC

Requested Completion Date: Normal

Site ID:

Sample Disposal: Dispose [X] Return [ ]

- ☐ LGN — One Innovation Drive, Suite C, Alachua, FL 32615-9586, (904) 462-3050 FAX (904) 462-1670
- ☒ LRD — 5090 Caterpillar Road, Redding, CA 96003-1412, (916) 244-5227 FAX (916) 244-4109
- ☐ LMG — 2567 Fairlane Drive, Montgomery, AL 36116-1622, (334) 271-2440 FAX (334) 271-3428
- ☐ LKW — Canviro Analytical Laboratories, Inc., 50 Bathurst, Unit 12, Waterloo, Ontario, Canada N2V 2C5, (519) 747-2575 FAX (519) 747-3806

THIS AREA FOR LAB USE ONLY

Lab #	Page	of
Client Service	Price Source A P Q S	
Acct Code	Test Group	
Project Code	Ack. Gen.	
LIMS Ver	Login	Mult.
COC Review		

Sampling: 97

Date	Time	COMP	GRAB	WATER	SOIL	CLIENT SAMPLE ID (9 CHARACTERS)	QC ID (3 CHAR)	# OF CONTAINERS	DRO	BTEX	SAMPLE REMARKS	LAB 1 ID	LAB 2 ID
8/26	1700		X		X	TAL975514	3S	2	X	X	2oz WT= 87.58		
	1705		X		X	TAL975514	4S	2	X	X	87.75		
	1710		X		X	TAL975514	5S	2	X	X	87.36		
	1715		X		X	TAL975514	6S	2	X	X	87.46		
	1720		X		X	TAL975514	7S	2	X	X	87.85		
	1725		X		X	TAL975514	8S	2	X	X	87.51		

Sampled By & Title (Please sign and print name): [signature]	Date/Time: 8/26/97 1700	Relinquished By (Please sign and print name): [signature]	Date/Time: 8/27/97 0700
Received By (Please sign and print name)	Date/Time	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Relinquished By (Please sign and print name)	Date/Time
Received By (Please sign and print name)	Date/Time	Shipped Via: UPS Fed-Ex Other ______	Shipping #: Charter → Fed-x → RDD

HAZWRAP/NESSA:	Y	N
EDATA:	Y	N
QC LEVEL 1 2 3 OTHER ______		
pH	Ice	
Custody Seal	Temp	

Batch Remarks: Fed-x # 5519111430

Instructions and Agreement Provisions on Reverse Side

DISTRIBUTION: Original - LAB, Yellow - LAB, Pink - Client

REV 5/95 LAB FORM 340

CH2M HILL
Analytical Services
5090 Caterpillar Road
Redding, CA
96003-1412
Tel 916.244.5227
Fax 916.244.4109

CH2MHILL

Mr. Tom Wolf
CH2M HILL/ANC
301 West Northern Lights Boulevard
Suite 601
Anchorage, AK 99503-2691

Analytical Report
FAA Tanana FST Management Program
RD926

October 9, 1997

Submitted by:

Brian Geers

Brian Geers
Project Manager/Client Services

Organic Data Qualifiers

A -- This qualifier indicates that a TIC is a suspected aldol-condensation product.

B-- This flag is used when the analyte is found in the associated blank as well as the sample. This notation indicates possible blank contamination and suggests that the data user evaluate these compounds and their amounts carefully.

C-- The "C" flag indicates the presence of this compound has been confirmed by the GC/MS analysis.

D-- This qualifier is used for all compounds identified in an analysis at a secondary dilution factor. "D" qualifiers are used only for the samples reported at more than one dilution factor.

E-- This flag indicates that the value reported exceeds the linear calibration range for that compound. Therefore, the sample should be reanalyzed at the appropriate dilution. The "E" qualified amount is an estimated concentration, and the results of the dilution will be reported on a separate Form I.

I-- This qualifier indicates that the reporting limit adjacent to the "I" qualifier has been raised. It is used when chromatographic interference prohibits detection of a compound at a level below the concentration expressed on the Form I.

J-- Indicates an estimated value. It is used when the data indicates the presence of a target compound below the reporting limit or the presence of a Tentatively Identified Compound (TIC)

N-- This qualifier indicates presumptive evidence of a compound. This flag is only used for Tentatively Identified Compounds (TIC), where the identification is based on a mass spectral library search. It is applied to all TIC results. For generic characterization of a TIC, such as chlorinated hydrocarbon, the "N" qualifier is not used.

P-- This qualifier is used for pesticide/Aroclor target analytes when there is a greater than 25% difference for detected concentrations between the two columns. The lower of the two values is reported on Form I and flagged with a "P".

U-- Indicates the compound was analyzed for but not detected. The number adjacent to the "U" qualifier indicates the reporting limit for that compound. The reporting limit can vary from sample to sample depending on dilution factors or percent moisture adjustments when indicated.

Organic Sample ID Qualifiers

The qualifiers that may be appended to the Lab Sample ID and/or the Client Sample ID for organic analysis are defined below:

DL -- Diluted reanalysis . Indicates that the results were determined in an analysis of a secondary dilution of a sample or extract. The "DL" suffix may be followed by a digit to indicate multiple dilutions of the sample or extract. The results of more than one diluted reanalyses may be reported.

MS-- Matrix spike (may be followed by a digit to indicate multiple matrix spikes within a sample set).

MSD-- Matrix spike duplicate (may be followed by a digit to indicate multiple matrix spikes within a sample set).

R-- Reanalysis. The extract was reanalyzed without re-extraction. The "R" is not used if the sample was also re-extracted. May be followed by a digit to indicate multiple reanalyses of the sample at the same dilution.

RE-- Re-extraction analysis. The sample was re-extracted and reanalyzed. May be followed by a digit to indicate multiple re-extracted analyses of the same sample at the same dilution.

Sample ID Cross-reference Table

CH2M Hill Lab Sample ID		Client Sample ID	Collect Date	Sample Matrix	Additional Description
FS = Field Sample; MSD = Matrix Spike Duplicate; MSO = Matrix Spike, Organic					
RD926001	FS	TAL97SS143S	08/26/97	Soil	
RD926002	FS	TAL97SS144S	08/26/97	Soil	
RD926003	FS	TAL97SS145S	08/26/97	Soil	
RD926004	FS	TAL97SS146S	08/26/97	Soil	
RD926005	FS	TAL97SS147S	08/26/97	Soil	
RD926006	FS	TAL97SS148S	08/26/97	Soil	

The above lab sample ID's and cross reference information apply to samples as received by the laboratory. Modifiers to the lab sample ID may be added for internal tracking purposes. Any modified sample ID will be reflected in the appropriate case narrative only.

GC PURGEABLE AROMATICS

CASE NARRATIVE
GC PURGEABLE AROMATICS

CH2M Hill Lab Reference No./SDG.: RD926

Project: FAA Tanana FST Management Program

I. **RECEIPT**

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

II. **HOLDING TIMES**

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. **METHOD**

Preparation: ADEC PUBL-AK 101, 11/95
Cleanup: N/A
Analysis: SW-846 8020A(MOD)

IV. **PREPARATION**

Sample preparation proceeded normally.

V. **ANALYSIS**

A. Calibration : All acceptance criteria were met.

B. Blanks: All acceptance criteria were met.

C. Surrogates: Due to matrix interference, the surrogate recovery for Bromofluorobenzene in RD926005 exceeded laboratory QC limits. The laboratory QC samples met all acceptance criteria.

D. Spikes: All acceptance criteria were met.

E. Samples: Due to the concentration of target analytes, sample RD926003 was analyzed on a diluted basis. Reporting limits have been adjusted accordingly.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and QAL, Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

SIGNED: Douglas Burnett DATE: 10-8-97

Douglas Burnett
Resource Chemist, Organics

Sample data

Report of Analytical Results

Client Sample ID: TAL97SS143S
Sample Description: None
Sample Matrix: Soil
Dilution: 0.57

Date Collected: 08/26/97 17:00 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: None
Date Analyzed: 09/18/97 00:00 (Thu)

Reference No: RD926
Lab Sample ID: RD926001
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.03 U	mg/Kg	0.03
Ethylbenzene	100-41-4	0.077	mg/Kg	0.03
Toluene	108-88-3	0.03 U	mg/Kg	0.03
Xylenes (Total)	N/A	0.24	mg/Kg	0.03
a,a,a-Trifluorotoluene - SS	98-08-8	106	%rec	
Bromofluorobenzene - SS	460-00-4	91	%rec	

(9771)

Report of Analytical Results

Client Sample ID: TAL97SS144S
Sample Description: None
Sample Matrix: Soil
Dilution: 0.69

Date Collected: 08/26/97 17:05 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: None
Date Analyzed: 09/18/97 00:00 (Thu)

Reference No: RD926
Lab Sample ID: RD926002
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.04 U	mg/Kg	0.04
Ethylbenzene	100-41-4	0.04 U	mg/Kg	0.04
Toluene	108-88-3	0.04 U	mg/Kg	0.04
Xylenes (Total)	N/A	0.04 U	mg/Kg	0.04
a,a,a-Trifluorotoluene - SS	98-08-8	104	%rec	
Bromofluorobenzene - SS	460-00-4	76	%rec	

(9771)

Report of Analytical Results

Client Sample ID: TAL97SS145S
Sample Description: None
Sample Matrix: Soil
Dilution: 1.10

Date Collected: 08/26/97 17:10 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: None
Date Analyzed: 09/18/97 00:00 (Thu)

Reference No: RD926
Lab Sample ID: RD926003
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.06 U	mg/Kg	0.06
Ethylbenzene	100-41-4	2.1	mg/Kg	0.06
Toluene	108-88-3	0.06 U	mg/Kg	0.06
Xylenes (Total)	N/A	15	mg/Kg	0.06
a,a,a-Trifluorotoluene - SS	98-08-8	87	%rec	
Bromofluorobenzene - SS	460-00-4	115	%rec	

(9771)

Report of Analytical Results

Client Sample ID: TAL97SS146S
Sample Description: None
Sample Matrix: Soil
Dilution: 0.78

Date Collected: 08/26/97 17:15 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: None
Date Analyzed: 09/18/97 00:00 (Thu)

Reference No: RD926
Lab Sample ID: RD926004
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.05 U	mg/Kg	0.05
Ethylbenzene	100-41-4	0.05 U	mg/Kg	0.05
Toluene	108-88-3	0.05 U	mg/Kg	0.05
Xylenes (Total)	N/A	0.05 U	mg/Kg	0.05
a,a,a-Trifluorotoluene - SS	98-08-8	104	%rec	
Bromofluorobenzene - SS	460-00-4	84	%rec	

(9771)

Report of Analytical Results

Client Sample ID: TAL97SS147S
Sample Description: None
Sample Matrix: Soil
Dilution: 0.76

Date Collected: 08/26/97 17:20 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: None
Date Analyzed: 09/18/97 00:00 (Thu)

Reference No: RD926
Lab Sample ID: RD926005
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.05 U	mg/Kg	0.05
Ethylbenzene	100-41-4	2.7	mg/Kg	0.05
Toluene	108-88-3	0.05 U	mg/Kg	0.05
Xylenes (Total)	N/A	10	mg/Kg	0.05
a,a,a-Trifluorotoluene - SS	98-08-8	87	%rec	
Bromofluorobenzene - SS	460-00-4	216	%rec	

(9771)

Report of Analytical Results

Client Sample ID: TAL97SS148S
Sample Description: None
Sample Matrix: Soil
Dilution: 0.79

Date Collected: 08/26/97 17:25 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: None
Date Analyzed: 09/18/97 00:00 (Thu)

Reference No: RD926
Lab Sample ID: RD926006
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.05 U	mg/Kg	0.05
Ethylbenzene	100-41-4	0.078	mg/Kg	0.05
Toluene	108-88-3	0.05 U	mg/Kg	0.05
Xylenes (Total)	N/A	0.23	mg/Kg	0.05
a,a,a-Trifluorotoluene - SS	98-08-8	102	%rec	
Bromofluorobenzene - SS	460-00-4	83	%rec	

(9771)

QC Summary

SURROGATE RECOVERY SUMMARY
PURGEABLE AROMATICS

Instrument ID: TRACOR 540, DB-624 Lab Ref. No.: RD926

Matrix: SOIL Method: 8020A(MOD)

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	SURROGATE STANDARD A,A,A-TRIFLUOROTOLUENE	SURROGATE STANDARD BROMOFLUOROBENZENE
GSB10918	GSB10918	100	89
RD926001	TAL97SS143S	106	91
RD926002	TAL97SS144S	104	76
RD926003	TAL97SS145S	87	115
RD926004	TAL97SS146S	104	84
RD926005	TAL97SS147S	87	216 *
RD926006	TAL97SS148S	102	83

Surrogate Standard	QC Limits	
	Method Blank	Samples
a,a,a-Trifluorotoluene	60 - 120	50 - 150
Bromofluorobenzene	60 - 120	50 - 150

Surrogate standard reported as percent recovery.

Comments: * - Outside QC limits.

FORM II

METHOD BLANK SUMMARY
PURGEABLE AROMATICS

Matrix: SOIL
Method: 8020A(MOD)
Date Extracted: N/A
Date Analyzed: 09/18/97
Time Analyzed: 08:43
Instrument ID: TRACOR 540, DB-624
Lab File ID: 9715PDB0726

Lab Sample ID: GSB10918
Lab Ref. No.: RD926

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED
RD926001	TAL97SS143S	09/18/97
RD926002	TAL97SS144S	09/18/97
RD926003	TAL97SS145S	09/18/97
RD926004	TAL97SS146S	09/18/97
RD926005	TAL97SS147S	09/18/97
RD926006	TAL97SS148S	09/18/97

Comments:

FORM IV

Standards data

INITIAL CALIBRATION
PURGEABLE AROMATICS

Date Analyzed: 08/26/97
Instrument ID: TRACOR 540, DB-624

Method: 8020A(MOD)
Matrix: Water

Compound	5.0 PPB	10 PPB	20 PPB	50 PPB	100 PPB	200 PPB	$\overline{RF}$	% RSD
Benzene	2.7652	2.2361	2.0417	1.8940	1.9206	1.8895	2.1245	16.03
Ethylbenzene	2.3241	1.9349	1.7416	1.6279	1.6659	1.6391	1.8223	14.86
Toluene	2.7306	2.1695	1.9710	1.8361	1.8630	1.8263	2.0661	16.94
P/M Xylene	2.6515	2.2102	2.0032	1.9309	1.9719	1.8794	2.1079	13.73
O Xylene	2.2537	1.9162	1.7229	1.6175	1.6419	1.6144	1.7944	14.05
Surrogate								
a,a,a-Trifluorotoluene-SS	0.6456	0.6411	0.6414	0.6346	0.6312	0.6201	0.6357	1.45
Bromofluorobenzene-SS	0.7410	0.7491	0.7335	0.7544	0.7810	0.7621	0.7535	2.23

Comments:

FORM VI

CONTINUING CALIBRATION
PURGEABLE AROMATICS

Continuing Calibration Date: 09/18/97
Continuing Calibration Time: 07:27
Continuing Calibration File: 9715PDC0724

Method: 8020A(MOD)
Initial Calibration Date: 08/26/97
Matrix: Water

COMPOUND	REF. AMT.	CONT. CONT. CAL. CONC.	RANGE	RETENTION TIME	RETENTION TIME WINDOW
Benzene	20.00	19.15	15.4 - 24.6	5.841	5.801 - 5.881
Ethylbenzene	20.00	20.42	12.6 - 27.4	10.700	10.680 - 10.720
Toluene	20.00	20.33	15.4 - 24.6	8.574	8.554 - 8.594
M/P Xylene	40.00	46.05	29.8 - 61.4	10.882	10.862 - 10.902
O Xylene	20.00	19.32	14.0 - 27.0	11.434	11.414 - 11.454

SURROGATE	PREDICTED CONC	ACTUAL CONCENTRATION	% D
a,a,a-Trifluorotoluene-SS	100	104	4.0
Bromobluorobenzene-SS	100	96	4.0

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

Phone: (916) 244-5227
Fax: (916) 244-4109

CONTINUING CALIBRATION
PURGEABLE AROMATICS

Continuing Calibration Date: 09/18/97
Continuing Calibration Time: 14:47
Continuing Calibration File: 9715PDC0735

Method: 8020A(MOD)
Initial Calibration Date: 08/26/97
Matrix: Water

COMPOUND	REF. AMT.	CONT. CONT. CAL. CONC.	RANGE	RETENTION TIME	RETENTION TIME WINDOW
Benzene	20.00	18.22	15.4 - 24.6	5.837	5.797 - 5.877
Ethylbenzene	20.00	20.14	12.6 - 27.4	10.696	10.676 - 10.716
Toluene	20.00	19.86	15.4 - 24.6	8.572	8.552 - 8.592
M/P Xylene	40.00	47.06	29.8 - 61.4	10.875	10.855 - 10.895
O Xylene	20.00	20.87	14.0 - 27.0	11.424	11.404 - 11.444

SURROGATE	PREDICTED CONC	ACTUAL CONCENTRATION	% D
a,a,a-Trifluorotoluene-SS	100	98	2.0
Bromobluorobenzene-SS	100	105	5.0

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

Phone: (916) 244-5227
Fax: (916) 244-4109

ANALYTICAL SEQUENCE
PURGEABLE AROMATICS

Instrument ID: TRACOR 540, DB-624 Lab Ref. No.: RD926

Method: 8020A(MOD)

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	TIME ANALYZED
5.0 PPB	INITIAL	08/26/97	14:09
10 PPB	INITIAL	08/26/97	14:47
20 PPB	INITIAL	08/26/97	15:26
50 PPB	INITIAL	08/26/97	16:04
100 PPB	INITIAL	08/26/97	16:43
200 PPB	INITIAL	08/26/97	17:21
20 PPB	CONTINUING	09/18/97	07:27
GSB10918	GSB10918	09/18/97	08:43
RD926001	TAL97SS143S	09/18/97	09:39
RD926002	TAL97SS144S	09/18/97	10:17
RD926003	TAL97SS145S	09/18/97	10:56
RD926004	TAL97SS146S	09/18/97	11:34
RD926005	TAL97SS147S	09/18/97	12:13
RD926006	TAL97SS148S	09/18/97	12:52
20 PPB	CONTINUING	09/18/97	14:47

Comments:

FORM VIII

CH2M HILL
Analytical Services
5090 Caterpillar Road
Redding, CA 96003-1412
Phone: (916) 244-5227
Fax: (916) 244-4109

QC data

Report of Analytical Results

Client Sample ID: GSB10918
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: None
Date Received: None
Date Extracted: None
Date Analyzed: 09/18/97 00:00 (Thu)

Reference No: LABQC
Lab Sample ID: GSB10918
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC VOLATILES				
Benzene	71-43-2	0.05 U	mg/Kg	0.05
Ethylbenzene	100-41-4	0.05 U	mg/Kg	0.05
Toluene	108-88-3	0.05 U	mg/Kg	0.05
Xylenes (Total)	N/A	0.05 U	mg/Kg	0.05
a,a,a-Trifluorotoluene - SS	98-08-8	100	%rec	
Bromofluorobenzene - SS	460-00-4	89	%rec	

(9771)

GC DIESEL RANGE ORGANICS

CASE NARRATIVE
GC DIESEL RANGE ORGANICS

CH2M Hill Lab Reference No./SDG.: RD926

Project: FAA Tanana FST Management Program

I. RECEIPT

No exceptions were encountered unless a Sample Receipt Exception Report is attached to the Chain-of-Custody included with this data package.

II. HOLDING TIMES

A. Sample Preparation: All holding times were met.

B. Sample Analysis: All holding times were met.

III. METHOD

Preparation: N/A
Cleanup: N/A
Analysis: ADEC PUBL-AK 102, 11/95

IV. PREPARATION

Sample preparation proceeded normally.

V. ANALYSIS

A. Calibration : All acceptance criteria were met.

B. Blanks: All acceptance criteria were met.

C. Surrogates: Surrogate recovery could not be determined for sample RD926003 due to the required dilution.

D. Spikes: All acceptance criteria were met.

E. Samples: Samples RD926001 and RD926003 were analyzed on a diluted basis due to the concentration of target analytes. Reporting limits have been adjusted accordingly.

I certify that this data package is in compliance with the terms and conditions agreed to by the client and QAL, Inc., both technically and for completeness, except for the conditions noted above. Release of the data contained in this hardcopy data package has been authorized by the Laboratory Manager or designated person, as verified by the following signature.

SIGNED: Doug Burnett DATE: 10-9-97

Douglas Burnett
Resource Chemist, Organics

Sample data

Report of Analytical Results

Client Sample ID: TAL97SS143S
Sample Description: None
Sample Matrix: Soil
Dilution: 10.00

Date Collected: 08/26/97 17:00 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/08/97 11:30 (Mon)
Date Analyzed: 09/30/97 10:24 (Tue)

Reference No: RD926
Lab Sample ID: RD926001
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	2200	mg/Kg	47
o-Terphenyl - SS	84-15-1	98	%rec	

(9879)

Report of Analytical Results

Client Sample ID: TAL97SS144S
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: 08/26/97 17:05 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/08/97 11:30 (Mon)
Date Analyzed: 09/26/97 20:36 (Fri)

Reference No: RD926
Lab Sample ID: RD926002
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	10	mg/Kg	4
o-Terphenyl - SS	84-15-1	65	%rec	

(9879)

Report of Analytical Results

Client Sample ID: TAL97SS145S
Sample Description: None
Sample Matrix: Soil
Dilution: 100.00

Date Collected: 08/26/97 17:10 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/08/97 11:30 (Mon)
Date Analyzed: 09/27/97 03:18 (Sat)

Reference No: RD926
Lab Sample ID: RD926003
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	34000	mg/Kg	470
o-Terphenyl - SS	84-15-1	0 D	%rec	

(9879)

Report of Analytical Results

Client Sample ID: TAL97SS146S
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: 08/26/97 17:15 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/08/97 11:30 (Mon)
Date Analyzed: 09/26/97 23:07 (Fri)

Reference No: RD926
Lab Sample ID: RD926004
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	8.7	mg/Kg	5
o-Terphenyl - SS	84-15-1	97	%rec	

(9879)

Report of Analytical Results

Client Sample ID: TAL97SS147S
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: 08/26/97 17:20 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/08/97 11:30 (Mon)
Date Analyzed: 10/02/97 11:24 (Thu)

Reference No: RD926
Lab Sample ID: RD926005
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	27	mg/Kg	5
o-Terphenyl - SS	84-15-1	73	%rec	

(9879)

Report of Analytical Results

Client Sample ID: TAL97SS148S
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: 08/26/97 17:25 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/08/97 11:30 (Mon)
Date Analyzed: 09/27/97 02:28 (Sat)

Reference No: RD926
Lab Sample ID: RD926006
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	230	mg/Kg	5
o-Terphenyl - SS	84-15-1	102	%rec	

(9879)

QC Summary

SURROGATE RECOVERY SUMMARY
DIESEL RANGE ORGANICS

Instrument ID: VARIAN 3600, DB-5 Lab Ref. No.: RD926

Matrix: SOIL Method: ADEC PUBL-AK 102, 11/95

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	SURROGATE STANDARD O-TERPHENYL
ASB10908A	ASB10908A	99
RD926001	TAL97SS143S	98
RD926002	TAL97SS144S	65
RD926003	TAL97SS145S	0 D
RD926004	TAL97SS146S	97
RD926005	TAL97SS147S	73
RD926006	TAL97SS148S	102
RD926002MS	97SS144SMS	95
RD926002MSD	97SS144SMSD	84

Surrogate Standard	QC Limits	
	Method Blank	Samples
o-Terphenyl	60 - 120	50 - 150

Surrogate standard reported as percent recovery.

Comments: D - Surrogate recovery could not be determined due to the required dilution.

FORM II

MATRIX SPIKE / MATRIX SPIKE DUPLICATE RESULTS

Lab Sample ID: RD926002
Client ID: TAL97SS144S
Date Analyzed: 09/26/97

Analysis: ADEC PUBL-AK 102, 11/95
Matrix: SOIL

Compound	Concentration Spiked (mg/Kg)	Sample Result (mg/Kg)	Spike Result (mg/Kg)	Spike Percent Recovery
Diesel Range Organics	215	10	175	77

Compound	Concentration Spiked (mg/Kg)	Sample Result (mg/Kg)	Duplicate Spike Result (mg/Kg)	Spike Percent Recovery	RPD
Diesel Range Organics	215	10	127	54	34.0

Accuracy:

$$\text{Percent Recovery} = \frac{\text{Spike Result - Sample Result}}{\text{Concentration Spiked}} \times 100$$

Precision:

$$\text{RPD} = \frac{\text{Spike \% Rec. - Duplicate Spike \% Rec.}}{\text{Spike \% Rec. + Duplicate Spike \% Rec.}} \times 200$$

Comments:

FORM III

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

Phone: (916) 244-5227
Fax: (916) 244-4199

METHOD BLANK SUMMARY
DIESEL RANGE ORGANICS

Matrix: SOIL
Method: ADEC PUBL-AK 102, 11/95
Date Extracted: 09/08/97
Date Analyzed: 09/26/97
Time Analyzed: 18:55
Instrument ID: VARIAN 3600, DB-5
Lab File ID: 9708DEB0561

Lab Sample ID: ASB10908A
Lab Ref. No.: RD926

THIS METHOD BLANK APPLIES TO THE FOLLOWING SAMPLES:

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED
RD926001	TAL97SS143S	09/30/97
RD926002	TAL97SS144S	09/26/97
RD926003	TAL97SS145S	09/27/97
RD926004	TAL97SS146S	09/26/97
RD926005	TAL97SS147S	10/02/97
RD926006	TAL97SS148S	09/27/97
RD926002MS	97SS144SMS	09/26/97
RD926002MSD	97SS144SMSD	09/26/97

Comments:

FORM IV

Standards data

INITIAL CALIBRATION
DIESEL RANGE ORGANICS

Date Analyzed: 09/22/97
Instrument ID: VARIAN 3600, DB-5

Method: ADEC PUBL-AK 101, 11/95
Matrix: Water

RESPONSE FACTOR
(1.00E+6)

Compound	0.5 mg/ml	1.0 mg/ml	3.0 mg/ml	5.0 mg/ml	10 mg/mL	$\overline{RF}$	% RSD
Diesel Range Organics	2.337	2.745	2.765	2.800	2.941	2.718	8.15

RESPONSE FACTOR
(1.00E+03)

Compound	0.5 mg/ml	1.0 mg/ml	3.0 mg/ml	5.0 mg/ml	10 mg/ml	$\overline{RF}$	% RSD
o-Terphenyl - SS	8.035	7.826	7.897	7.751	7.841	7.870	1.32

Comments:

FORM VI

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4109

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 09/26/97
Continuing Calibration Time: 15:26
Continuing Calibration File: 9708DEC0557

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 09/22/97
Matrix: Water

COMPOUND	PREDICTED CONC.	ACTUAL CONC.	% D
Diesel Range Organics	3.00	3.01	0.3
o-Terphenyl - SS	100	103	3

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4109

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 09/27/97
Continuing Calibration Time: 01:37
Continuing Calibration File: 9708DEC0569

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 09/22/97
Matrix: Water

COMPOUND	PREDICTED CONC.	ACTUAL CONC.	% D
Diesel Range Organics	3.00	3.37	12.3
o-Terphenyl - SS	100	108	8

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4109

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 09/27/97
Continuing Calibration Time: 12:31
Continuing Calibration File: 9708DEC0582

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 09/22/97
Matrix: Water

COMPOUND	PREDICTED CONC.	ACTUAL CONC.	% D
Diesel Range Organics	3.00	2.46	18.0
o-Terphenyl - SS	100	87	13

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4109

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 09/30/97
Continuing Calibration Time: 08:36
Continuing Calibration File: 9708DEC0588

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 09/22/97
Matrix: Water

RESPONSE FACTOR
(1.00E+06)

COMPOUND	INITIAL MEAN RF	CONTINUING RF	% D
Diesel Range Organics	2.718	2.470	9.5

SURROGATE STANDARD	PREDICTED CONC.	ACTUAL CONC.	% D
o-Terphenyl - SS	100	86	14.0

Comments:

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 09/30/97
Continuing Calibration Time: 20:59
Continuing Calibration File: 9708DEC0601

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 09/22/97
Matrix: Water

COMPOUND	PREDICTED CONC.	ACTUAL CONC.	% D
Diesel Range Organics	3.00	3.00	0.1
o-Terphenyl - SS	100	97	3

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4109

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 10/02/97
Continuing Calibration Time: 09:02
Continuing Calibration File: 9708DEC0627

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 09/22/97
Matrix: Water

RESPONSE FACTOR
(1.00E+06)

COMPOUND	INITIAL MEAN RF	CONTINUING RF	% D
Diesel Range Organics	2.718	2.209	20.6

SURROGATE STANDARD	PREDICTED CONC.	ACTUAL CONC.	% D
o-Terphenyl - SS	100	84	16.0

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

Phone: (916) 244-5227
Fax: (916) 244-4109

CONTINUING CALIBRATION
DIESEL RANGE ORGANICS

Continuing Calibration Date: 10/02/97
Continuing Calibration Time: 15:05
Continuing Calibration File: 9708DEC0631

Method: ADEC PUBL-AK 101, 11/95
Initial Calibration Date: 09/22/97
Matrix: Water

COMPOUND	PREDICTED CONC.	ACTUAL CONC.	% D
Diesel Range Organics	3.00	2.55	15.0
o-Terphenyl - SS	100	81	19

Comments:

FORM VII

CH2M HILL
Analytical Services

5090 Caterpillar Road
Redding, CA 96003-1412

916 244-5227
Fax No. 916 244-4099

ANALYTICAL SEQUENCE
DIESEL RANGE ORGANICS

Instrument ID: VARIAN 3600, DB-5 Lab Ref. No.: RD926

Method: ADEC PUBL-AK 102, 11/95

LABORATORY SAMPLE ID	CLIENT SAMPLE ID	DATE ANALYZED	TIME ANALYZED
0.50 mg/mL	INITIAL	09/22/97	17:30
1.0 mg/mL	INITIAL	09/22/97	18:26
3.0 mg/mL	INITIAL	09/22/97	19:23
5.0 mg/mL	INITIAL	09/22/97	20:19
10 mg/mL	INITIAL	09/22/97	21:14
3.0 mg/mL	CONTINUING	09/26/97	15:26
ASB10908A	ASB10908A	09/26/97	18:55
RD926002	TAL97SS144S	09/26/97	20:36
RD926002MS	97SS144SMS	09/26/97	21:27
RD926002MSD	97SS144SMSD	09/26/97	22:17
RD926004	TAL97SS146S	09/26/97	23:07
3.0 mg/mL	CONTINUING	09/27/97	01:37
RD926006	TAL97SS148S	09/27/97	02:28
RD926003	TAL97SS145S	09/27/97	03:18
3.0 mg/mL	CONTINUING	09/27/97	12:31
3.0 mg/mL	CONTINUING	09/30/97	08:36
RD926001	TAL97SS143S	09/30/97	10:24
3.0 mg/mL	CONTINUING	09/30/97	20:59
3.0 mg/mL	CONTINUING	10/02/97	09:02
RD926005	TAL97SS147S	10/02/97	11:24
3.0 mg/mL	CONTINUING	10/02/97	15:05

Comments:

FORM VIII

QC data

Report of Analytical Results

Client Sample ID: ASB10908A
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: None
Date Received: None
Date Extracted: 09/08/97 11:30 (Mon)
Date Analyzed: 09/26/97 18:55 (Fri)

Reference No: LABQC
Lab Sample ID: ASB10908A
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	4 U	mg/Kg	4
o-Terphenyl - SS	84-15-1	99	%rec	

(9879)

Report of Analytical Results

Client Sample ID: TAL97SS144SM
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: 08/26/97 17:05 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/08/97 11:30 (Mon)
Date Analyzed: 09/26/97 21:27 (Fri)

Reference No: RD926
Lab Sample ID: RD926002MS
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	77	%rec	
o-Terphenyl - SS	84-15-1	95	%rec	

(9879)

Report of Analytical Results

Client Sample ID: TAL97SS144SM
Sample Description: None
Sample Matrix: Soil
Dilution: 1.00

Date Collected: 08/26/97 17:05 (Tue)
Date Received: 08/29/97 09:15 (Fri)
Date Extracted: 09/08/97 11:30 (Mon)
Date Analyzed: 09/26/97 22:17 (Fri)

Reference No: RD926
Lab Sample ID: RD926002MSD
Site: N/A

Analytical Parameter	CAS or Storet Number	Result	Units	Reporting Level
GC SEMI-VOLATILES				
Diesel Range Organics	DIESELCOMP	54	%rec	
o-Terphenyl - SS	84-15-1	84	%rec	

(9879)

Drum Storage Site, Building 600

Chain of Custody

Data Package

ANALYTICA ALASKA INC.
Web: www.analyticagroup.com

811 [illegible] Ave
Anchorage, AK 99501
(907) 258-2155
FAX: (907) 258-6634
E-Mail: analytic@eagle.ptialaska.net

5438 [illegible]e Dri
Juneau, AK 99801
(907) 780-6668
FAX: (907) 780-6670

[illegible]Interl[illegible] Park[illegible]
Suite 200
Broomfield, Colorado 80021
(303) 469-8868
FAX: (303) 469-5254

LGN: 98I0023
CSN: A80408

Chain of Custody Record / Analysis Request

Company Name: CH2M HILL
Company Address: 301 W. Northern lights Anchorage AK 99503
Telephone: 907 278-2551
FAX:
Project Name: FAA Tanana R.I. DO# 25
Report To: Mike Drewett
Sampler: T. Wagner
P.O. Number: A-2314.A1.F6

Sample ID	Date Collected	Time Collected	Matrix (Soil/Water Circle One)	# Containers: 8 oz Glass	4 oz Glass	40 ml. VOA/HCl	1 Liter	BTEX by 5030/8021 or 602 (specify)	GRO by 5030/8015M	GRO by AK101	DRO by 3550/8100M	DRO by AK102	RRO by AK103	Lead 7421	PH<2	Hold for Further Analysis	RUSH (see below)	LAB ID
TAL98SL001501	9/29	0930		1										X				
TAL98SL001502	9/29	0930		1										X				
TAL98SL002501	9/29	0935		1										X				
TAL98SL002502	9/29	0940		1										X				
TAL98SL003501	9/29	0941		1										X				
TAL98SL003502	9/29	0941		1										X				
TAL98SL004501	9/29	0950		1										X				
TAL98SL004502	9/29	0950		1										X				
TAL98SL004503	9/29	0950		1										X				

COMMENTS: DO+PO# as per Patrick LeMay 9/30/98

DELIVERABLES
- ☐ Level I
- ☐ ADEC Format
- ☑ ACOE
- ☐ Other
- ☐ EDF - Format: [illegible] specify

TURNAROUND
- ☐ 2 Business Days
- ☐ 5 Business Days
- ☐ 10-15 Business Days
- ☒ Other prelims-14 Final data-30 #Business Days

RELINQUISHED BY SAMPLER:	RECEIVED BY:	RELINQUISHED BY:	RECEIVED BY:
Signature:	Signature:	Signature:	Signature:
Printed Name: Anthony R. Wagner	Printed Name: Sarah Stevens	Printed Name: Lorraine Underkofler	Printed Name:
Firm: CH2M Hill	Firm: Analytica Alaska Inc.	Firm: Analytica AK	Firm:
Date/Time: 9/29/98 12:15pm	Date/Time: 9/30/98 1[illegible]:[illegible]5pm	Date/Time: 9/30/98 1300	Date/Time: 10-1-98 9:2[illegible]

ANALYTICA USE ONLY:
Airbill / Freight #:
Condition of Sample Containers:
Temp Received: 0.5 °C
# of Coolers: 1
Seals: 2 front + side

PAGE 1 OF 1

ANALYTICA
ENVIRONMENTAL
LABORATORIES
an Analytica Group company

325 Interlocken Parkway
Suite 200
Broomfield, CO 80021
(303) 469-8868
(800) 873-8707
FAX: (303) 469-5254

CH2M Hill of Alaska
301 W. Northern Lights Blvd.
Suite 601
Anchorage, AK 99503-2792
Attn: Mike Drewett

Order #: 98-10-023
Date: 10/15/98 13:15
Work ID: FAA TANANA R.I. D.O. #25
Date Received: 10/01/98
Date Completed: 10/15/98

SAMPLE IDENTIFICATION

Sample Number	Client Description
01	TAL 98SL001 SO1
02	TAL 98SL001 SO2
03	TAL 98SL002 SO1
04	TAL 98SL002 SO2
05	TAL 98SL003 SO1
06	TAL 98SL003 SO2
07	TAL 98SL004 SO1
08	TAL 98SL004 SO2
09	TAL 98SL004 SO3

Enclosed are the analytical results for the submitted sample(s). Please review the CASE NARRATIVE for a discussion of any data and/or quality control issues. A listing of data qualifiers and analytical codes is located on the TEST METHODOLOGIES page at the end of the report.

If you have any questions regarding the analyses, please feel free to call.

Sincerely,

Claire K. Toon

Claire K. Toon
Project Manager

Samples were prepared and analyzed according to methods outlined in the following references:

- Test Methods for Evaluating Solid Waste, USEPA SW-846, Third Edition, Revision 4, January 1996.

All analyses meet quality assurance objectives.

Dilution factors are provided in parentheses next to the 'D' qualifier.

Sample: **01A TAL 98SL001 SO1** Collected: **09/29/98** Matrix: **SOIL**

Test Description	Method	Result	Q	Limit	Units	Analyzed
Lead, Total	SW 7421	20	D(5)	0.56	mg/Kg-DRY	10/13/98
Percent Moisture	ASTM D2216	11.1		0.1	WT%	10/08/98

Sample: **02A TAL 98SL001 SO2** Collected: **09/29/98** Matrix: **SOIL**

Test Description	Method	Result	Q	Limit	Units	Analyzed
Lead, Total	SW 7421	10	D(5)	0.58	mg/Kg-DRY	10/13/98
Percent Moisture	ASTM D2216	13.3		0.1	WT%	10/08/98

Sample: **03A TAL 98SL002 SO1** Collected: **09/29/98** Matrix: **SOIL**

Test Description	Method	Result	Q	Limit	Units	Analyzed
Lead, Total	SW 7421	11	D(5)	0.58	mg/Kg-DRY	10/13/98
Percent Moisture	ASTM D2216	13.8		0.1	WT%	10/08/98

Sample: **04A TAL 98SL002 SO2** Collected: **09/29/98** Matrix: **SOIL**

Test Description	Method	Result	Q	Limit	Units	Analyzed
Lead, Total	SW 7421	12	D(5)	0.57	mg/Kg-DRY	10/13/98
Percent Moisture	ASTM D2216	12.4		0.1	WT%	10/08/98

Sample: **05A TAL 98SL003 SO1** Collected: **09/29/98** Matrix: **SOIL**

Test Description	Method	Result	Q	Limit	Units	Analyzed
Lead, Total	SW 7421	12	D(5)	0.57	mg/Kg-DRY	10/13/98
Percent Moisture	ASTM D2216	12.1		0.1	WT%	10/08/98

Sample: 06A TAL 98SL003 SO2 Collected: 09/29/98 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
Lead, Total	SW 7421	8.5	D(2)	0.24	mg/Kg-DRY	10/13/98
Percent Moisture	ASTM D2216	16.5		0.1	WT%	10/08/98

Sample: 07A TAL 98SL004 SO1 Collected: 09/29/98 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
Lead, Total	SW 7421	120	D(50)	5.3	mg/Kg-DRY	10/13/98
Percent Moisture	ASTM D2216	5.60		0.1	WT%	10/08/98

Sample: 08A TAL 98SL004 SO2 Collected: 09/29/98 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
Lead, Total	SW 7421	43	D(10)	1.2	mg/Kg-DRY	10/13/98
Percent Moisture	ASTM D2216	15.4		0.1	WT%	10/08/98

Sample: 09A TAL 98SL004 SO3 Collected: 09/29/98 Matrix: SOIL

Test Description	Method	Result	Q	Limit	Units	Analyzed
Lead, Total	SW 7421	8.9	D(2)	0.24	mg/Kg-DRY	10/13/98
Percent Moisture	ASTM D2216	15.4		0.1	WT%	10/08/98

THE FOLLOWING CODES APPLY TO THE ANALYTICAL REPORT

RESULT field...
ND = not detected at the reported limit
NA = analyte not applicable (see case narrative/methods for discussion)

Q (qualifier) field...
GENERAL:
* = Recovery or %RPD outside method specifications
H = value is estimated due to analysis run outside EPA holding times
E = reported concentration is above the instrument calibration range
D = analyte was diluted to bring within instrument calibration range or to remove matrix interferences

ORGANIC ANALYSIS DATA QUALIFIERS:
B = analyte was detected in the laboratory method blank
J = analyte was detected above the instrument detection limit (IDL) but below the analytical reporting limit (CRDL)

INORGANIC ANALYSIS DATA QUALIFIERS:
B = analyte was detected above the instrument detection limit (IDL) but below the analytical reporting limit (CRDL)
W = post digestion spike did not meet criteria (85-115%)
S = reported value determined by the Method of Standard Additions

3050_G:	Acid Digestion of Sediments, Sludges, and Soils for GFAA Metals	METHOD: 3050A
PB_GTS:	LEAD, Total (GFAA)	METHOD: 7421
PMOIST:	PERCENT MOISTURE	METHOD: ASTM D2216

Sample: 01A TAL 98SL001 SO1 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
Lead, Total	SW 7421	09/29/98	10/01/98	NA	10/09/98	10/13/98
Percent Moisture	ASTM D2216	09/29/98	10/01/98	NA		10/08/98

Sample: 02A TAL 98SL001 SO2 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
Lead, Total	SW 7421	09/29/98	10/01/98	NA	10/09/98	10/13/98
Percent Moisture	ASTM D2216	09/29/98	10/01/98	NA		10/08/98

Sample: 03A TAL 98SL002 SO1 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
Lead, Total	SW 7421	09/29/98	10/01/98	NA	10/09/98	10/13/98
Percent Moisture	ASTM D2216	09/29/98	10/01/98	NA		10/08/98

Sample: 04A TAL 98SL002 SO2 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
Lead, Total	SW 7421	09/29/98	10/01/98	NA	10/09/98	10/13/98
Percent Moisture	ASTM D2216	09/29/98	10/01/98	NA		10/08/98

Sample: 05A TAL 98SL003 SO1 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
Lead, Total	SW 7421	09/29/98	10/01/98	NA	10/09/98	10/13/98
Percent Moisture	ASTM D2216	09/29/98	10/01/98	NA		10/08/98

Sample: 06A TAL 98SL003 SO2 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
Lead, Total	SW 7421	09/29/98	10/01/98	NA	10/09/98	10/13/98
Percent Moisture	ASTM D2216	09/29/98	10/01/98	NA		10/08/98

Sample: 07A TAL 98SL004 SO1 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
Lead, Total	SW 7421	09/29/98	10/01/98	NA	10/09/98	10/13/98
Percent Moisture	ASTM D2216	09/29/98	10/01/98	NA		10/08/98

Sample: 08A TAL 98SL004 SO2 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
Lead, Total	SW 7421	09/29/98	10/01/98	NA	10/09/98	10/13/98
Percent Moisture	ASTM D2216	09/29/98	10/01/98	NA		10/08/98

Sample: 09A TAL 98SL004 SO3 Matrix: SOIL

Analysis	Method	Collected	Received	TCLP date	Extracted	Analyzed
Lead, Total	SW 7421	09/29/98	10/01/98	NA	10/09/98	10/13/98
Percent Moisture	ASTM D2216	09/29/98	10/01/98	NA		10/08/98

QA/QC REPORT

METHOD BLANK SUMMARY

PAGE: 1

CLIENT: CH2M_HILL_AK

10/15/98

ORDER#: 9810023

SAMPLE ID	ANALYTE	UNITS	ANAL DATE	RESULT	LIMIT
MB-9801303	LEAD, Total	mg/Kg	10/13/98	ND	0.10

METHOD BLANK SPIKE SUMMARY

SAMPLE ID	ANALYTE	UNITS	ANAL DATE	RESULT	LIMIT	SPIKE	REF VAL	%REC	FLAG	QC SPECS LOW	QC SPECS UPPER
MBS-9801303	LEAD, Total	mg/Kg	10/13/98	2.0	0.10	2.0	ND	100		80	120

MATRIX SPIKE SUMMARY

SAMPLE ID	ANALYTE	UNITS	ANAL DATE	RESULT	LIMIT	SPIKE	REF VAL	%REC	FLAG	QC SPECS LOW	QC SPECS UPPER
S810023-01A	LEAD, Total	mg/Kg-DRY	10/13/98	27	0.56	2.2	20	NC		70	130

SAMPLE DUPLICATE SUMMARY

SAMPLE ID	ANALYTE	UNITS	ANAL DATE	RESULT	LIMIT	REF VAL	%RPD	FLAG	QC SPECS UPPER
D810023-01A	LEAD, Total	mg/Kg-DRY	10/13/98	16	0.56	20	22.2		35

COOLER RECEIPT FORM

CLIENT H2 M Hill - AK CSN# A80408 PROJECT FAA Tanana R.I. ORD# 9810023

USE OTHER SIDE OF THIS FORM TO NOTE DETAILS CONCERNING CHECK-IN PROBLEMS/DISCREPANCIES

A. PRELIMINARY EXAMINATION PHASE: Date cooler opened 10-1-98 Chain of Custody # ——
by print [illegible] sign [illegible]

1. Did cooler come with a shipping slip air bill, etc. ? ______ (YES) NO
   If YES, enter carrier name & air bill number here Fedex 312 886 4804
2. Were custody seals on outside of cooler? ______ (YES) NO
   How many & where: 2 - [illegible] seal date: 9-30-98 seal name: [illegible]
3. Were custody seals unbroken and intact on the date and time of arrival? ______ (YES) NO
4. Did you screen samples for radioactivity using the Geiger Counter? ______ YES (NO)
5. Were custody papers sealed in a plastic bag & taped inside to the lid? ______ (YES) NO
6. Were custody papers filled out properly ink, signed, etc ? ______ (YES) NO
7. Did you sign custody papers in the appropriate place? ______ (YES) NO
8. Was project identifiable from custody paper?, If yes, enter project name at the top of this form ______ (YES) NO
9. If required, was enough ice used? (YES) NO Type of ice: WET (BLUE) Temp 4 °C
10. Have designate person initial here to acknowledge receipt of cooler: [illegible] date: 10-1-98

B. LOG-IN PHASE: Date samples were logged-in: 10-2-98
by print [illegible] sign [illegible]

11. Describe type of packing in cooler: Bubble Wrap
12. Were all bottles sealed in separate plastic bags? ______ (YES) NO
13. Did all bottles arrive unbroken & were labels in good condition? ______ (YES) NO
14. Were all bottle labels complete ID, date, time, signature, preservative, etc. ? ______ (YES) NO
15. Did all bottle labels agree with custody papers? ______ (YES) NO
16. Number of samples received 9 Number of bottles received 9
17. Were correct containers used for the tests indicated? ______ (YES) NO
18. Were correct preservatives added to samples? ______ (YES) NO
19. Was a sufficient amount of sample sent for tests indicated? ______ (YES) NO
20. Were bubbles absent in volatile samples? If NO, list by Sample #/ID ______ ~~YES NO~~
21. Was the project manager called and status discussed? If yes, give details on the back of this form ______ YES (NO)
22. Who was called? ______ By whom? ______ date ______

PERCENT MOISTURE WORKSHEET

BATCH NO.: 9800212 PREP CODE: PMOIST PREP DATE: 10/08/98

CREATED: 10/08/98 UPDATED: 10/09/98 BY: PK

OVEN TEMPERATURE (C): 105.5

SAMPLE ID	TARE WT (g)	WETSAMP WT+TARE	WETSAMP WT(g)	DRYSAMP WT+TARE	DRYSAMP WT(g)	PERCENT MOISTURE
MB-9800212	1.02			1.02		
9810023-01A	1.02	5.79	4.77	5.26	0.53	11.1
D810023-01A	1.02	7.92	6.90	7.14	0.78	11.3
9810023-02A	1.03	8.61	7.58	7.60	1.01	13.3
9810023-03A	1.03	8.33	7.30	7.32	1.01	13.8
9810023-04A	1.03	7.41	6.38	6.62	0.79	12.4
9810023-05A	1.02	6.47	5.45	5.81	0.66	12.1
9810023-06A	1.02	7.38	6.36	6.33	1.05	16.5
9810023-07A	1.02	7.09	6.07	6.75	0.34	5.60
9810023-08A	1.02	8.48	7.46	7.33	1.15	15.4
9810023-09A	1.03	6.43	5.40	5.60	0.83	15.4
9810017-01A	1.02	7.03	6.01	6.26	0.77	12.8
9810043-01A	1.02	7.47	6.45	6.90	0.57	8.80

PREPARATION BATCH

Total GFAA Prep - Solids

BATCH NO.: 9801303
CREATED: 10/09/98

PREP CODE: 3050 G
UPDATED: 10/09/98

PREP DATE: 10/09/98
BY: YMD

REAGENT1, PCN#: HNO3:451
REAGENT3, PCN#:
SPIKE1, SCN#: GFAA # 357

REAGENT#2, PCN#: H2O2:351
REAGENT#4, PCN#:
SPIKE2, SCN#:

SAMPLE ID	MATRIX	INIT WT (g)	INIT VOL (mL)	FINAL VOL (mL)	SPIKE1 ADDED (mL)	SPIKE2 ADDED (mL)	COMMENTS
MB-9801303	LAB	1.0		100			
MBS-9801303	LAB	1.0		100	1.0		
9810023-01A	SOIL	1.0		100			
D810023-01A	SOIL	1.0		100			
S810023-01A	SOIL	1.0		100	1.0		
9810023-02A	SOIL	1.0		100			
9810023-03A	SOIL	1.0		100			
9810023-04A	SOIL	1.0		100			
9810023-05A	SOIL	1.0		100			
9810023-06A	SOIL	1.0		100			
9810023-07A	SOIL	1.0		100			
9810023-08A	SOIL	1.0		100			
9810023-09A	SOIL	1.0		100			

Appendix C
Manifests and Certificates of Acceptance

Hazardous Waste Manifest

TAL03

PSC
PHILIP SERVICES
CORP.
INDUSTRIAL SERVICES
GROUP
Western Region

Post-it® Fax Note 7671	Date 2/25/99	# of pages ▶ 6
To Terry Fields	From Bischke	
Co./Dept.	Co.	
Phone #	Phone #	
Fax #	Fax #	

Post-it® Fax Note 7671	Date 2/25	# of pages ▶ 6
To PATTI DRENETT	From TERRY	
Co./Dept.	Co.	
Phone #	Phone #	
Fax # ENJOY	Fax #	

January 21, 1998

Mr. Brionne Bischke
OHM Remediation Services
5731 West Las Positas Blvd.
Pleasanton, CA 94588

RE: Certificate of Treatment, Recycling and/or Disposal

Dear Mr. Bischke:

Please find enclosed a certificate of treatment, recycling and/or disposal for the Federal Aviation Administration - Tanana, Manifest #TAL03. The original of this document has been mailed to Mr. Larry Pellegrino at the FAA Anchorage office.

We look forward to doing business with you again in the future. Please do not hesitate to contact our office should you have any questions. Thank you.

Sincerely,

Roxanne Pedersen

Roxanne Pedersen
Client Services Representative

Date: 01/16/98 CERTIFICATE OF TREATMENT, RECYCLING, AND/OR DISPOSAL

This is to certify that the following waste material was received, managed, and treated in compliance with all applicable Federal and Washington State Laws and regulations.

Facility: BURLINGTON ENVIRONMENTAL, INC. 20245 77TH AVENUE SOUTH
KENT FACILITY KENT WA 98032
EPA ID: WAD991281767

Generator: 9873 - USDOT FAA - TANANA EPA ID: AK9690502167

Manifest: TAL03-97 Waste Receipt #: KNT-49048 Date Received: 11/18/97

We	Profile	Material Description	Treatment/Disposal Description	Final Treatment/ Disposal Facility	Final PSC Manifest	PgLn	Final Date/ Date Shipped
1	146108-01	HAZARDOUS WASTE, SOLID, N.O.S. (LEAD)	M111 STABILIZATION/CHEMICAL FIXATION/CEMENT	ROOSEVELT REGIONAL LANDFILL	11147-KNT	1A	11/20/97

We: Michelle Wood Signature : Michelle Wood Title : Waste Tracking Specialist

02/25/99 THU 11:51 FAX 5104630719 OHM ANCHORAGE →→→ CH2M HILL 002
02/25/99 10:09 9075638714 →→→ ALASKA 002

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST

1. Generator's US EPA ID No.: A K 9 6 9 0 5 0 2 1 6 7 0 0 0 0 7
Manifest Document No.: TA 0 3
2. Page 1 of 4

Information in the shaded areas is not required by Federal law.

3. Generator's Name and Mailing Address
Federal Aviation Administration-Tanana
222 W. 7th Ave., Box 14, AAL-471
Anchorage, AK 99513-7587

4. Generator's Phone (907 271-5935

5. Transporter 1 Company Name: Yutana Barge Lines
6. US EPA ID Number: A K D 9 8 3 0 6 6 4 1 6

7. Transporter 2 Company Name: Carlile Enterprises
8. US EPA ID Number: A K D 1 2 2 0 8 1 2 4 3

9. Designated Facility Name and Site Address
Burlington Environmental
20245 77th Ave. S.
Kent, WA 98032

10. US EPA ID Number: W A D 9 9 1 2 8 1 7 6 7

C. State Transporter's ID
D. Transporter's Phone
E. State Transporter's ID
F. Transporter's Phone (907) 276-7797
G. State Facility's ID
H. Facility's Phone (206) 872-8030

11. US DOT Description (Including Proper Shipping Name, Hazard Class and ID Number)	HM	12. Containers No.	Type	13. Total Quantity	14. Unit Wt/Vol	I. Waste No.
a. Hazardous waste, solid, n.o.s. 9, NA3077, PG III (LEAD) (LEAD)		7	C F	5150	P	[illegible]
b.						
c.						
d.						

J. Additional Descriptions for Materials Listed Above / K. Handling Codes for Wastes Listed Above: [illegible]

15. Special Handling Instructions and Additional Information
Emergency contact # (800) 537-9540 or (510) 227-1105 ext. 411; Certificate of destruction / disposal requested

16. GENERATOR'S CERTIFICATION: I hereby declare that the contents of this consignment are fully and accurately described above by proper shipping name and are classified, packed, marked, and labeled, and are in all respects in proper condition for transport by highway according to applicable international and national government regulations.

If I am a large quantity generator, I certify that I have a program in place to reduce the volume and toxicity of waste generated to the degree I have determined to be economically practicable and that I have selected the practicable method of treatment, storage, or disposal currently available to me which minimizes the present and future threat to human health and the environment; OR, if I am a small quantity generator, I have made a good faith effort to minimize my waste generation and select the best waste management method that is available to me and that I can afford.

Printed/Typed Name	Signature	Month Day Year
James R. Spalding	[signature]	0 8 0 . 9 7

17. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
Kevin L Kudbeck	[signature]	0 9 0 5 9 7

18. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Month Day Year
David Parsons	[signature]	0 9 2 4 9 7

19. Discrepancy Indication Space
See attached statement for discrepancy - Lisa Marquss - Carlile

20. Facility Owner or Operator: Certification of receipt of hazardous materials covered by this manifest except as noted in Item 19.

Printed/Typed Name	Signature	Month Day Year
Elaine Hagedorn	[signature]	1 1 1 1 8 9 7

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

Form Approved. OMB No. 2050-0039. Expires 9-30-99

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator's US EPA ID No. A K 9 6 9 0 5 0 2 1 6 7	Manifest Document No. ~~0 0 0 0~~	22. Page 2 OF 2	Information in the shaded areas is not required by Federal law.

23. Generator's Name
Federal Aviation Administration-Tanana TAL03
222 W. 7th Ave., Box 14, AAI-471
Anchorage, AK 99513-7587
(907)271-5936

24. Transporter 3 Company Name	25. US EPA ID Number
Burlington Environmental	A K D 9 8 3 0 6 8 6 0 2

Transporter's Phone (907) 272-9007

26. Transporter 4 Company Name	27. US EPA ID Number
Carlile Enterprises	A K D 1 2 2 0 8 1 2 4 3

Transporter's Phone (907) 276-7797

28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	Waste No.
a.						
b.						
c.						
d.						
e.						
f.						
g.						
h.						
i.						

S. Additional Descriptions for Materials Listed Above

T. Handling Codes for Wastes Listed Above

32. Special Handling Instructions and Additional Information This page used for transportation purposes only.

33. Transporter 3 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
Larry Kerr	[signature]	09 29 97

34. Transporter 4 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date Month Day Year
LISA MARQUISS	Lisa Marquiss	10 08 97

35. Discrepancy Indication Space

Please print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST (Continuation Sheet)	21. Generator's US EPA ID No.	Manifest Document No.	22. Page	Information in the shaded areas is not required by Federal law.
	AK9690502	167 [illegible]	3 of 4	

23. Generator's Name
Federal Aviation Administration-Tanana
222 W. 7th Ave., Box 14, AAL-471
Anchorage, AK 99513-7587
(907)271-5936

TALJ

[redacted]

24. Transporter 3 Company Name	25. US EPA ID Number
Alaska Railroad Corp.	AKD981767402

26. Transporter 4 Company Name	27. US EPA ID Number
Crowley Marine Services	WAD008958027

[redacted]

28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	[redacted]
a.						
b.						
c.						
d.						
e.						
f.						
g.						
h.						
i.						

[redacted] Additional Descriptions for Materials Listed Above

T. Handling Codes for Wastes Listed Above

32. Special Handling Instructions and Additional Information This page used for transportation purposes only.

33. Transporter 2 Acknowledgement of Receipt of Materials		Date
Printed/Typed Name T Burkhart	Signature T Burkhart	Month Day Year 10 12 97
34. Transporter 5 Acknowledgement of Receipt of Materials		Date
Printed/Typed Name Regina Palmer	Signature Regina Palmer for Crowley	Month Day Year 10 22 97

35. Discrepancy Indication Space

GENERATOR

TRANSPORTER

[Please] print or type. (Form designed for use on elite (12-pitch) typewriter.)

UNIFORM HAZARDOUS WASTE MANIFEST *(Continuation Sheet)*	21. Generator's US EPA ID No. AK9690502167	Manifest Document No. ~~0000~~2	22. Page 4 of 4	Information in the shaded areas is not required by Federal law.

23. Generator's Name
[F]ederal Aviation Administration-Tanana TAL03
[2]22 W. 7th Ave., Box 14, AAL-471
[A]nchorage, AK 99513-7587
(907)271-5936

L. State Manifest Document Number
M. State Generator's ID

24. Transporter 1 Company Name: [B]urlington Environmental — 25. US EPA ID Number: WAR000001743
N. State Transporter's ID
O. Transporter's Phone (253) 232-2044

26. Transporter 2 Company Name — 27. US EPA ID Number
P. State Transporter's ID
Q. Transporter's Phone

28. US DOT Description (Including Proper Shipping Name, Hazard Class, and ID Number)	HM	29. Containers No.	Type	30. Total Quantity	31. Unit Wt/Vol	R. Waste No.
a.						
b.						
c.						
d.						
e.						
f.						
g.						
h.						
i.						

S. Additional Descriptions for Materials Listed Above

T. Handling Codes for Wastes Listed Above

32. Special Handling Instructions and Additional Information — This page used for transportation purposes only.

33. Transporter 1 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)
[signature]	[signature]	1/12/99

34. Transporter 2 Acknowledgement of Receipt of Materials

Printed/Typed Name	Signature	Date (Month Day Year)

35. Discrepancy Indication Space

Tanana Landfill Certificate of Acceptance

City of Tanana
P.O. Box 249
Tanana, AK 99777
PHONE # (907) 366-7159

The City of Tanana accepts into the Tanana landfill the construction debris, tanks and associated piping removed from the Tanana Federal Aviation Agency site in August/September of 1997.

Mary Edwin
Tanana City Manager

9/4/97
Date

Appendix D
Field Logs

CH2-OH Field Logs

"Rite in the Rain®"

ALL-WEATHER

FIELD

SPIRAL MAXI-NOTEBOOK

No. 353-MX

FAA - Tanana
142314. A1. F9
August 11, 1997
Notebook #1

August 11, 1997 Tuesday WTX: high clouds; Temp 60° Breezy.

0615 Flight leaves Anchorage
0715 Arrive Fairbanks Taxi to Tatonduk Air ($20.00)
0900 Lv. Fairbanks
1000 Arrive - Tanana, pick up Van from Dale Erickson (Tanana Commercial Co.) open up running account for gas. Arrange ATV for Bryan Carey. Check in @ Paul & Mary Starr's. Check supplies in storage @ FAA Weather station (@ airport). Familiarize ourselves with Tanana - find stores, work sites, barge/dock etc.
1215 Picked up Bryan Carey @ airport; discussed need to have daily mtg. w/OHM to determine days course of action. Bryan showed us Bldg. 100 - place to store our supplies. Moved supplies from WTX station to Bldg 100 - ~~up~~ unpacked supplies & set up work station in Van and Bldg 100. Visited work sites & shop w/Bryan Carey.
1445 Called Tom Wolfe - discussed survey to be completed by Manley Survey @ NDB site - OHM to arrive @ 5pm on flight from Fairbanks.

1500 Bob & DAVE go discuss the scope of work with Bryan Carey.

1530 Bob & DAVE go to the airport to wait for next plane carrying the OHM boys.

1545 Bob ~~Tabbs~~ & DAVE go to storage and check out instruments - Ok

1700 Go back to airport and wait for OHM again.

1730-1745 Bob Trebble takes DAVE CORBETT to Health Clinic - incoherent

1800 CALL Mike Druett / CH2M Hill office ANC to inform him of DAVE Corbett being taken to Clinic

1920 DAVE Corbett Medi-VAC to Fairbanks Memorial Hosp. Bob calls Mike Druett to update him on DAVE C.

August 11, 1997 Tuesday (2)

1800- OHM arrives in TANANA (3) - Bryan Carey meets plane.

Bob Trebble will make necessary calls to report incident on Dave Corbett on 8/12/97 0700.

① LISA MARTIN / SCO - Health & Safety Manager
② ~~Julie~~ MARY Zimmerman / SEA Human Resources Manager
OR
Julie Zimmerman / DEN

0700 - CALL Julie Zimmerman / DGN CORP Human resources manager.
Gave her all the information regarding Medical of DAVE Corbett to Fairbanks Memorial Hospital Fairbanks, Alaska.
Julie Will contact SBA Human resources, LISA MARTIN / SCO Health & Safety Manager, and Mike Drevett / ANC

0800 Bob Trebble - CH2M Hill
Bryan Carey / FAA Rep.
Mel Bryant
TODD Hiltemen
Rick Binkley
> OHM
ON SITE

Backhoe is Ford 555C
Excavator Hitachi EX100

Discuss - (1) Tank locations
(2) Dip the tanks (if possible) for fuel amount
(3) Go to dock and get backhoe / excavator

0820 Bob Calls Mike Drevett - (1) Bob contacts above CH2M Hill People re- DAVE Corbett
Mike says DAVE will return to site - has medical release from Fairbanks Memorial Hospital

0830 OHM / CH2M Hill / FAA Rep go locate tanks and dip tanks

TANK			
	FAA #	15-B-001	GASOLINE - 3.5" bottom of tank
	FAA #	15-B-004	Heating oil - 10.5"
	FAA #	15-B-005	Heating oil - 13"
	FAA #	15-B-006	Heating oil - 12"
	FAA #	15-B-019	Heating oil - 21"
	FAA #	15-B-007	Heating oil - 16"
	FAA #	15-B-008	Heating oil - 24"
	FAA #	15-B-018	Heating oil - ~~Ø~~ 13" DC 8/12/97
	FAA #	15-B-012	Heating oil - 24"
	FAA #	15-B-011	Heating oil - 1.5"
	FAA #	15-B-009	Heating oil - 1/8"
	FAA #	15-B-010	~~Heating~~ oil - Ø Diesel

FAA# 15-B-003 Heating oil - 8"
FAA# 15-B-002 Heating oil - 6"

0900- OHM Goes to get Pipe Wrench to remove caps on tanks not accessible by hand.

After all tanks (accessible) have been dipped-
① Contact DALE ERICKSON (Fuel Hauler for TANANA) and ask to pump tanks out (Diesel, Heating oil)

0910- Bob J. Calibrates OVM / LEL/O2 meters
0920- OHM returns and dips remaining tanks in Quarters area
FAA# Block 3 Lot 2 - Heating oil - 9"
FAA# 15-B-017 - Heating oil - .5"

0940- FAA comes over to move obstructions from tank areas to be removed

0950- OHM will start at FAA# 15-B-002 (Heating oil) 500gAL North side of SHOP 205. Will hand dig down to top of tank at FILL Pipe and Vent/Lines area Bldg 205

1020- Health & Safety meeting (Refer to Health & Safety Logbook)
Note- Lots of Paint Chips (Red-Lead?) around west side of Shop bldg 205. OHM needs to rake, Vacuum, ect? up chips prior to excavating area. (Chips on ground)

1050- START uncovering Tank 15-B-002 / Bldg 205
Will TAKE headspace (OVM) of SOIL
Headspace 0'-2' (TOP of tank) = 131 PPM (Stained, ODOR, SILTS)
Expose top of tank, disconnect fuel lines from tank to building
1125- Will Continue removing soil 0'-2' Next to the bldg (205)
All Soil Stockpiled on 10mL Visquine

1130- OHM will go to bldg 600 and remove AST Tank 15-B-009 and bring it over to bldg 205 and use for temporary storage for fuel in TANK 15-B-002

1145 - Bob goes to electric Company and borrows Chain to Lift tank 15-B-009 from its support. OHM drains remaining fuel into 55 gal drum. Also, drain from lines and day tank inside bldg 600

1200 TANK 15-B-009 being removed from STAND

1200 Lunch

1230 Return to bldg 600 - remove 2nd TANK (15-B-010) from stand (OHM) and dismantle STANDS for the 2 tanks

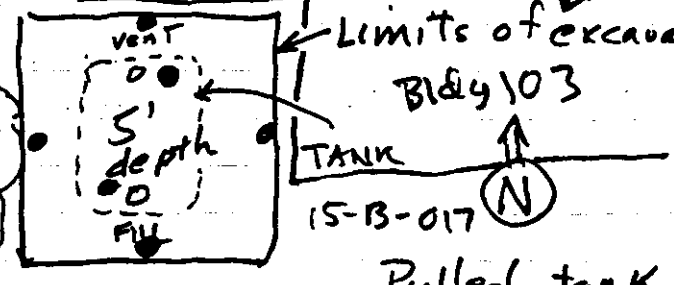
1300 OHM moves ~~tank~~ AST from bldg 600 to bldg 205 for temporary fuel Storage from Tank 15-B-002 ~~FAA ok~~ STATE OKs use of 500 gal mobile fuel tank to be used for fuel temporary Storage. Will leave 500 gal tank from bldg 600 near the shop bldg 205 for future use

1315 Dave Corbett returned to the site. OHM preparing to pump out remaining fuel in FAA shop tank into 500 gal portable temporary tank. Small pump unable to pull fuel - will empty later, with diaphram pump.

Moved backhoe to Bldg 103 Tank #15-B-017. Bob prepares LEL meter. OHM spreads out visqueen tarp liner for excavated soil. Top of tank 15" below ground surface. Dipstick revealed ½" of fuel remaining in tank.

1400 Excavating w/ backhoe @ Bldg 103; uncovered fuel distribution line. Fill pipe on South end of tank (see p.10)

Headspace	PPM Bldg 103
0-15"	0ppm
0-15 over fillcap	0ppm
3' depth W side	0ppm
1430 4' depth W side	4ppm
4' depth - fill end	11ppm
4' depth - fill end	12ppm



Pulled tank

445 Bob took LEL meter - tested Tank LEL = 0; O_2 = 21.0

1500 Headspace sample from beneath tank. (6"-8" Below Tank. @ 5' depth = 0ppm

5' depth (bottom of excavation = 0ppm. - east side

5' depth (bottom of excavation = 2ppm west side.

• = Confirmational Sample Locations

Note: Ensys samples collected 8/12/97 to be run 8/13/97

DC 8/12/97 Dave Corbett (6)

~~1510~~ - Samples collected - 3 Ensys 5 BTEX
~~1530~~ - Ensys samples East Wall, West Wall, Floor, South Wall

Sample No.	Time	Location	Containers	Analysis	Excavation Location
TAL9755001Q1		Bldg. 103		DRO	
TAL9755002Q1		Bldg 103		DRO	
TAL9755003Q1		Bldg 103		DRO	
TAL9755004Q1	*	Bldg 103		DRO	
TAL9755005Q1	DC 8/	Bldg 103		DRO	
TAL9755006Q1		Bldg 103		DRO	

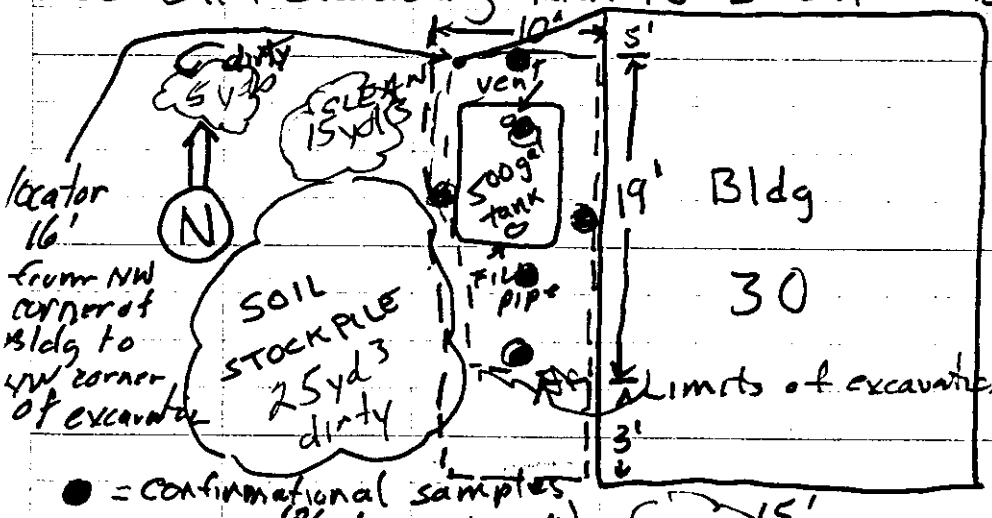
*Sampling Postponed until 8/13/97

1515 OHM moved to Bldg 30 Tank # 15-B-011 - removing soil from top of tank w/ backhoe. Hand dug near fill pipe and vent pipe. Bob Trebble collected headspace samples. Soil placed on Tarp.

Headspace samples @ Bldg 30 — PPM

Vent @ top (0-2.7')	0
Fill @ Top (0-2.7')	0
1.5' depth - east side of tank	19

1530 OHM excavating tank 15-B-011 @ Bldg 30



Excavation:
Length = 19'
Width = 10'
Depth = 8½'

Stockpiles
45 yd³ contaminated
15 yd³ clean

● = confirmational samples (⅔ down on wall)

1600 Headspace Samples

5' depth	east side	11 ppm
2' depth	west side	191 ppm (near fill pipe)
4' depth	west side	64 ppm
4.5' depth	west side	89 ppm
3' depth	south end	305 ppm

1630 LEL 0%; O_2 = 20.8% in TANK 15-B-011 @ Bldg. 30. Large Hitachi excavator brought over to pull tank.

(7) Dave Corbett 8/12/97

1640 OHM disconnected 1" Fuel supply line from tank. Drained line

1650 Pulled Tank 15-B-011 C Bldg. 30. Placed tank on plastic tarp near front of Bldg. 30.

1700 Bob Trebble taking spoons of soil from sides & walls - petroleum odor. OHM continues to excavate.

Headspace Samples: Tank 15-B-011, Bldg 30.

West Wall	1 ppm
South Wall	24 ppm
East Wall	39 ppm (adjacent to Bldg 30 foundation
South Floor	80 ppm
North Floor	3 ppm

1730 OHM does additional excavation in South Floor area. Additional Headspace on South Floor following more excavation. = 1 ppm.

Met with Bryan - discussed reducing BTEX to 1 sample per tank located near the highest OVM reading.

Bob collected 3 Ensys samples: North Floor, South Floor and West Wall. Bob/Dave pick up ice for samples.

1300 Met w/Todd, Bryan to discuss tomorrows activities.

Will complete Tank 15-B-002 excavation

Equipment put on chargers (ovm)(spectrometer)

Secure supplies/Equipmt/Samples
All activities performed in Level D

1830 END of DAY

Bob Trebble HRS=
DAVE Corbett —
OHM Folks —

OHM is going to expose the tops of several tanks while waiting for fuel transfer pump.

0615 Breakfast WTX: Overcast Temp 52°
0700 Met w/ Todd, Bryan, Mel, Rich, Bob, Dave
Conducted Health & Safety meeting - discussed working around large excavator & backhoe.
OHM to start excavation on Shops tank @ Bldg 205
0720 Calibrate Instruments (OVM, MX 251)
OHM sets up on TANK 15-B-002 (BLDG 205)

0750 Bob takes LEL/O2 readings in Tank 15-B-002/Bldg 205
LEL = 10
O_2 = 20.8
Unable to remove until 6" fuel pumped out and purged out.

0800 OHM sets up to go gain entry to Quarters site ASTs (15-B-014, 15-B-015, 15-B-016)

0800 DAVE Corbett runs ENSYS screening samples
Collected 8/12/97

0830 OHM unable to cut manholes off ASTs (Refer 0800 Time)
Will move to 15-B-018 and expose top of TANK (13' BGS)
Bldg 104 ↘

0920 Headspace Screening of 15-B-018
Fill Pipe 0'-1' = 0 PPM
Vent Pipe 0'-1' = 1 PPM
TOP of Tank Fill = 0 PPM
TOP of TANK Vent = 6 PPM

ENSYS sample results:
STD = -0.26
Bldg. 30 - West Wall = 0.22
Bldg. 30 - South Floor = 0.45
Bldg 30 - North Floor = -0.04
Bldg 103 - South Wall = 0.14
Bldg 103 - East Floor = 0.09
Bldg 103 - West Floor = 0.34

0930 TAMPA CITY Electric on site - discuss power grid for FAA Compound

0935 OHM done removing soil from top of TANK 15-B-018
0940 OHM moves on to TANK 15-B-008 to expose top of tank (1.5' BGS) Bldg 105
Headspace Screening of 15-B-008 Bldg 105
Fill Pipe 0"-3" = 0 PPM
Vent Pipe 0"-3" = 0 PPM
TOP of Tank Fill - 1.5' = 0 PPM
TOP of TANK Vent - 1.5' = 0 PPM

1100 PAUL Corbett finishes ENSYS Screening Samples- ONLY 1 failed - TANK 15-B-011 North Floor - 0.04 will have OHM excavate down to South Floor depth appr* 19' BGS. Confirmation Samples will then be collected - OVM Headspace North Floor 10' BGS = 0 PPM APPRX 3cuyeds removed

1015 Bob collects Soil Samples from TANK Excavation 15-B-011 @ Bldg 30

Sample #	Time	Location	Analysis	Bottle weight
TAL97SS007Q2	1015	North Floor	DRO/BTEX*	87.34g
TAL97SS008Q2	1016	South Floor	DRO/BTEX*	87.30g
TAL97SS009Q2	1019	South Wall	DRO	
TAL97SS010Q2	1022	East Wall	DRO	
TAL97SS011Q2	1020	North Wall	DRO	
TAL97SS012Q2	1021	West Wall	DRO	

*20ml of methanol added to 2oz. BTEX samples.

1030 OHM moved to Bldg 300 Tank # 15-B-007 to expose top of tank. Will complete removal when fuel is transfered.

1045 Headspace samples taken from Tank 15-B-007 @ Bldg 300.
Fill Pipe Surface - 1 ppm
Vent Pipe Surface - 2ppm
Fill Pipe Top of TANK 30" - 0 ppm
Vent Pipe Top of TANK 30" - 0 PPM
Soil excavated placed on plastic tarp

1100 OHM moved to BLM Bldg 106 to excavate down to top of tank. COMSERUAC Bldg. Tank 15-B-019. Cannot complete removal until fuel transfer is completed. Soil placed on tarp.

1115 Bob/Dave sample @ Bldg 103 Tank # 15-B-017

Sample #	Time	Location	Analysis	Bottle weight
TAL9755001Q1	1120	South Floor	DRO/BTEX*	87.77g
TAL9755002Q1	1121	North Floor	DRO	
TAL9755003Q1	1122	South Wall	DRO	
TAL9755013Q1	1030	South Floor	DRO	(duplicate of TAL9755001Q1)
TAL9755004Q1	1123	North Wall	DRO	
TAL9755005Q1	1124	East Wall	DRO	
TAL9755006Q1	1125	West Wall	DRO	

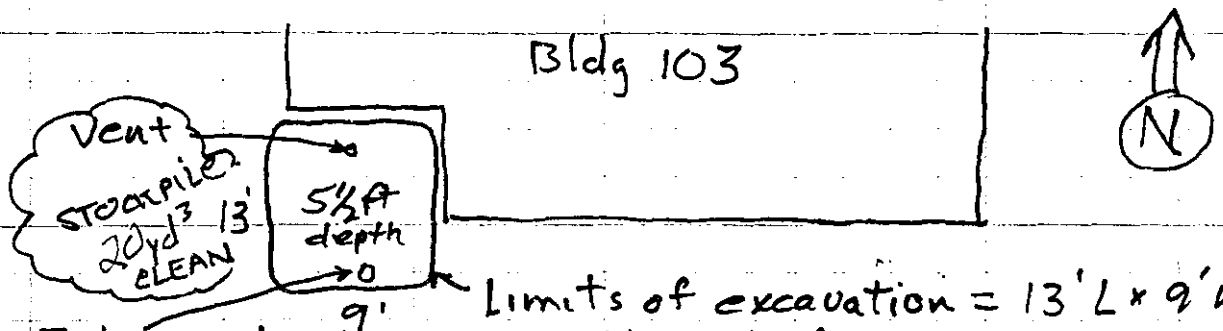
DC 8/14/97 ~~TAL975500~~

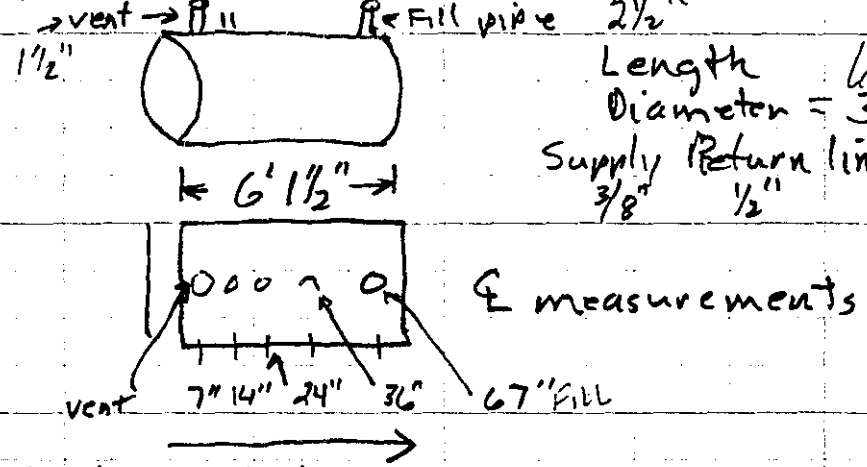
* 20ml of methanol added to 2oz. BTEX samples.

8/13/97 Dave Corbett 8/13/97 (10)

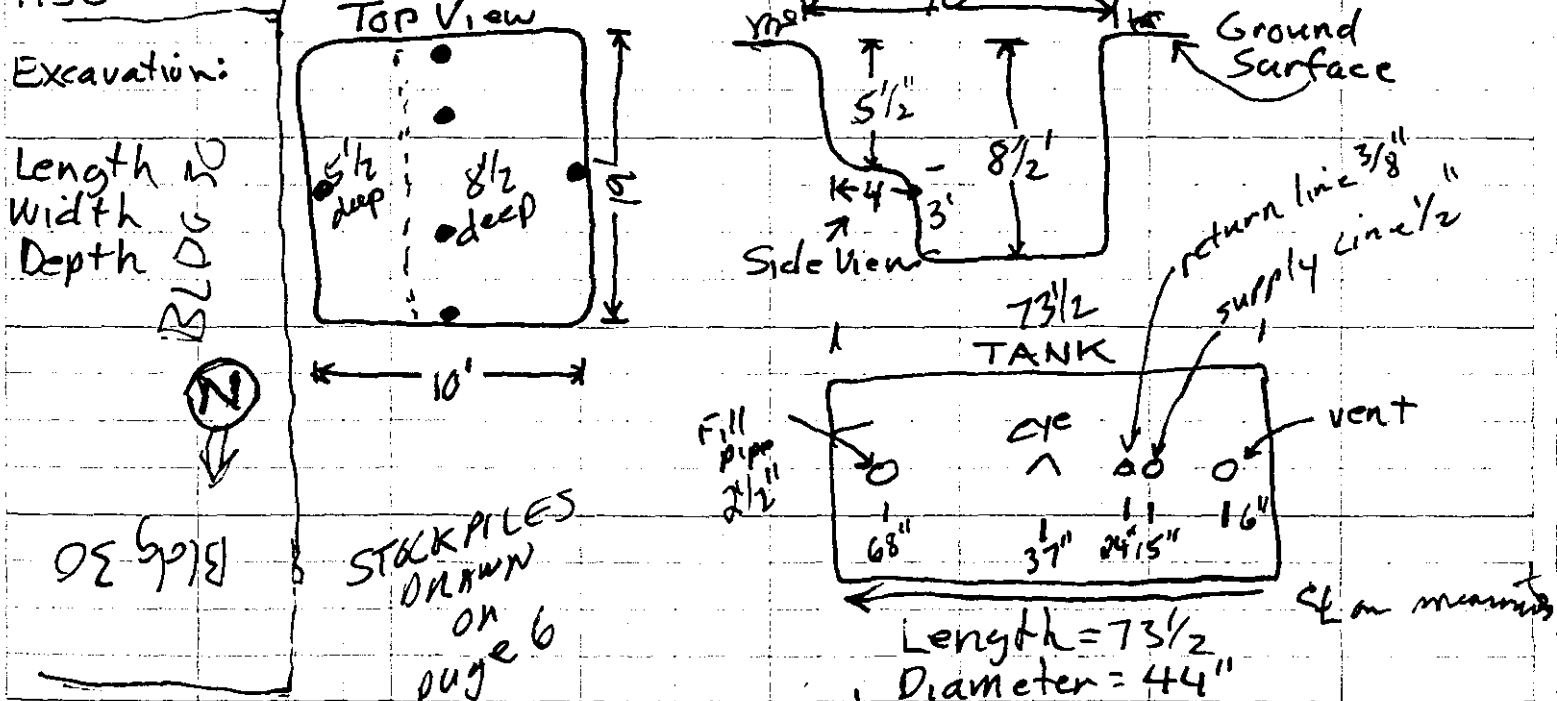
1135 Bldg. 103

Tank 15-13-017 Drawing





1150 Bldg 30 Tank # 15-B-D11 *See additional drawing p. 6.



(11) Dave Corbett 8/13/97

1215 Lunch

1310 Vent & Fill on samples from Bldg 106 - Tank # 15-B-019

Headspace samples:

Surfac near Fill	2 ppm
31" bgs	113 ppm

OHM @ Block 3 Lot 2 - Tank # 15-B-013 removing soil from top of tank. Cannot complete removal until fuel is transfered out of tank. Met w/ Bryan: utility Locators will return to find 2400V line leading to FAA Shop. Soil excavated placed on plastic tarp.

Fill & Vent on same end of tank (South end

Headspace samples	OVM reading
Surface (Southend)	1 ppm
Top of tank (31" bgs)	0 ppm

OHM moves to Bldg 102 - Tank # 15-B-004 to remove soil from top of tank. Cannot complete removal until fuel is transfered out of tank. Fill pipe on North end of tank. Soil excavated placed on plastic tarp.

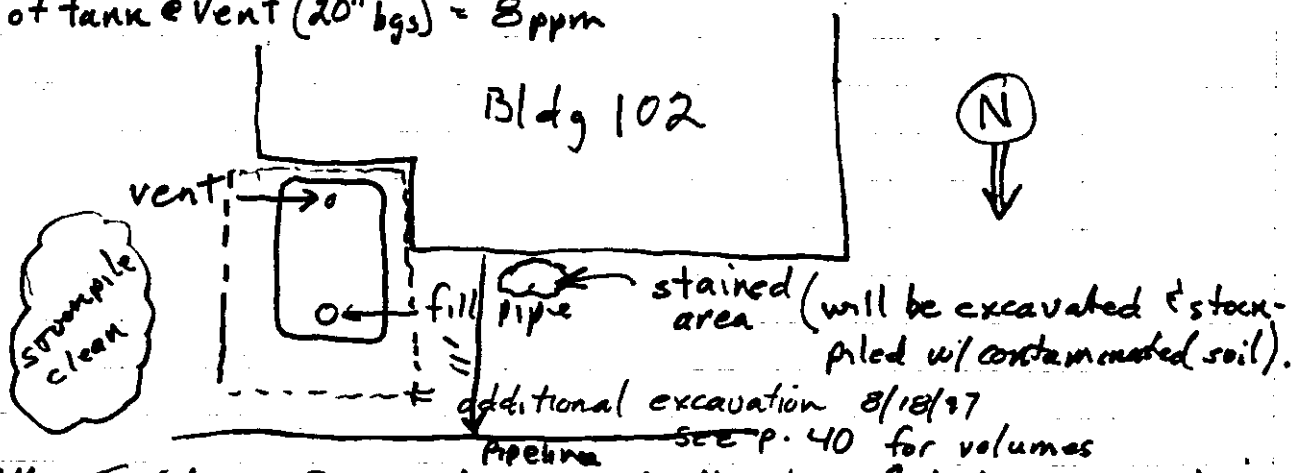
345 Headspace samples: Bldg 102 T# 15-B-004

20" bgs @ top of tank = 0 ppm

Surface fill = 0 ppm

Surface vent = 0 ppm

Top of tank @ Vent (20" bgs) = 8 ppm



OHM - Todd in Excavator partially backfilled excavation @ Bldg 30 with clean stockpile (approximately 15 yd^3).

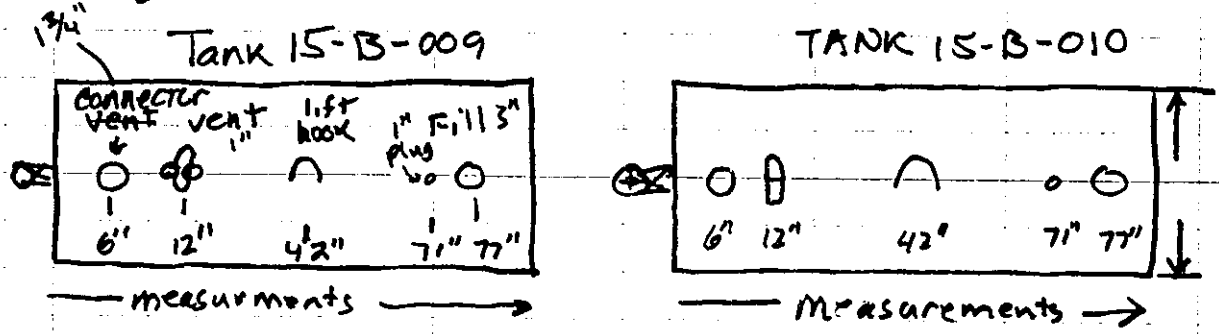
All stockpile volumes are OHM (Todd) estimates.

(12) Dave Corbett 8/13/97 Wednesday

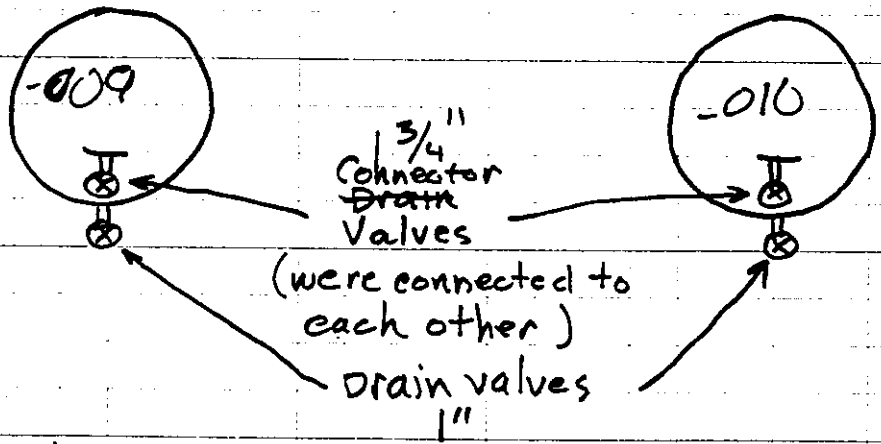
1400 Todd in excavator backfilling excavation @ Bldg #103, and compacting each lift with excavator bucket. Soil excavated during tank removal was sampled and results indicated that soil was clean; therefore, it was used as fill.

AST AST

Bob/Dave - measured 15-B-009 & 15-B-010 taken from Bldg #600 and stored presently behind ST. of Alaska shop.



Length = 83" Length = 83"
Diameter = 46" Diameter = 46"



Both tanks 15-B-009 and 15-B-010 are presently in good condition (painted silver).

1415 OHM @ Bldg. 101 Tank # 15-B-005 removing soil from top of tank. Removal will be completed when remaining fuel is transfered out of tank. Soil excavated placed on plastic tarp.

Head space samples:
Fill @ surface = 0 ppm
Vent @ surface = 1 ppm
Vent @ 21" bgs (top of tank) = 1 ppm
Fill @ 21" bgs (top of tank) = 0 ppm

(13) Dave Corbett 8/13/97

1445 OHM covering all soil stockpiles w/ plastic tarp. Bob called the office/Tony Wagner/Tom Wolfe.

1515 OHM Rich/backhoe and Mel moved to Bldg 204 - Tank # 15-B-003 to remove soil from top of tank. Removal will be finished after fuel is transfered out of tank. Soil excavated is placed on plastic tarp.

Head space Samples:	OVM Reading
Fill end on surface	= —
Vent end on surface	= 0 ppm
Fill end 15" bgs (top of tank)	= 0 ppm
Vent end 15" bgs (top of Tank)	= —
Middle of tank 12" bgs	= 3 ppm

1545 Met w/ Bryan and Tanana Electric Co. utility locator marking buried line running E → W thru residences Line marked every 10' with red paint.

600 Bob attempts LEL reading in Tank # 15-B-014 - unsuccessful

615 OHM using torch to cut bolts on Lower manhole in
1515 Tank # 15-B-015, 15-B-016, and 15-B-014
745 Put instruments on charge - secure equipment; discuss tomorrows activities w/ Bryan Carey.
All activities in Level D PPE
1800 end of shift

Bob Trebble - 11 hrs
Dave Corbett - 11 hrs
OHM - 11 hrs

Note: Bryan Carey indicated (talking w/ Jim Swalling) that only 1 BTEX sample will be collected per tank excavation (or fuel distribution system excavation).

8/14/97 Dave Corbett (14)

0615 - Breakfast WTX: Overcast, light sprinkle Temp 50° High 60°
0700 - Health & Safety Mtg
OHM - Todd Hiltunen, Pete ~~Peterson~~ Henderson, Mel Bryant, Rich Rinkley, Chris Olds
CH2M Hill - Bob Trebble, Dave Corbett
FAA Rep - Bryan Carey
Issues: Working around heavy equip; excavations, utility lines Insect bites; new personell on-site; general safety issues.

OHM has pump for transferring fuel, but no air hose to run it. Todd will try to find an air hose first thing this morning. Other OHM crew will begin demolition of wooden tank racks @ Bldg 600 - Eng-Gen Bldg @ Tank # 15-B-009 and 15-B-010. Bryan to open one of the FAA Houses for OHM equipment storage.

0720 Bob calibrated OVM & LEL instruments. Calibration recorded in Calibration logbook.

Small shed immediately west of Bldg 602 (Water Treatment bldg.) removed Wed (8/13/97) 7:00pm by local resident.

0730 OHM removing debris from area north of Tanks 15-B-014, 15-B-015, 15-B, 016 (south of Eng-Gen Bldg #600). Debris consists of boat & Trailer, snow machine, old lumber, steel culverts, ans small ulility trailer. These items stored by local residents were moved approximately 100 feet north to the north side of the Eng-Gen bldg #600.

0745 Bob met w/ Bryan to discuss ER portion (different scope) ER portion of work includes: Demolition, well abandonment Bldg 600 area excavation. 141360. A3. E11

0815 Bob/Dave make copies of Spill Report & Tribal Council.

0820 OHM indicates air hose needed for tank fuel transfer will arrive from Fairbanks in one hour - approximately 0930.

0915 OHM prepared to pump fuel from Tank # 15-B-019 @ Bldg 106. Using Ingersoll-Rand Model IR-185. Approximately 21" of heating oil remains in tank. OHM constructing fuel Transfer piping to be used in all tanks. 2" Trash pump used. Grounding cables used on tanks

(13) Dave Corbett 8/14/97 Thursday

1000 Dave Corbett completes Spill Report for Bldg 30 Tank # 15-B-011 and went to Starr's to FAX to Mike Drewett/ANC. FAX successful

1040 Bob went to Tanana Commercial Co. to get jumper cables for IR-185 compressor. OHM having trouble starting compressor.

1100 Unable to start IR-185 compressor. Todd to call ~~CSA~~ CMI* Inc., supplier of compressor to resolve. Mel in excavator and ER** Pete @ Bldg 602 to unhook and remove pumps from Water Treatment Bldg. Rich and Chris @ Tank 15-B-014, 15-B-015, and 15-B-016 to pump out liquids in large AST into drums, using small pump.

Met w/ Bryan to discuss NDB site access. Access to NDB site requires crossing private land, which has multiple owners. Julie Roberts (Tribal Council) tried to facilitate access w/ owners to allow access but Tribal Council is a 3rd party (does not own property requiring access), but Ms. Roberts was unsuccessful. Currently, access has not been obtained. Bryan indicated that FAA is currently evaluating other locations (possibly VORTAC) for land farming Bryan will notify CH2MHILL (Bob/Dave) when resolved.

1120 OHM (Pete/Mel) removing pipe (≈ 1½") from western most ER** of the two inactive wells adjacent to Bldg 602. 36' of 1½" pipe removed from west well.

1150 OHM (Rich/Chris) pumped approximately 65 gal. of diesel ER** contaminated fuel from Tank # 15-B-016. Moving to Tank # 15-B-014. Tank 15-B-015 was empty. Approximately 60 gal of diesel contaminated H_2O was remove from Tank 15-B-014 & drums.

1205 OHM pulling PVC pipe from east well @ Bldg # 602. & Appr 33' of 1½" black PVC pipe was removed from the eastern of the 2 inactive wells @ Bldg 602

1215 Lunch

1255 Bob/Dave measured pipe (PVC) removed from east well @ Bldg 602.

1300 OHM still trying to get IR-185 compressor running. No Luck.

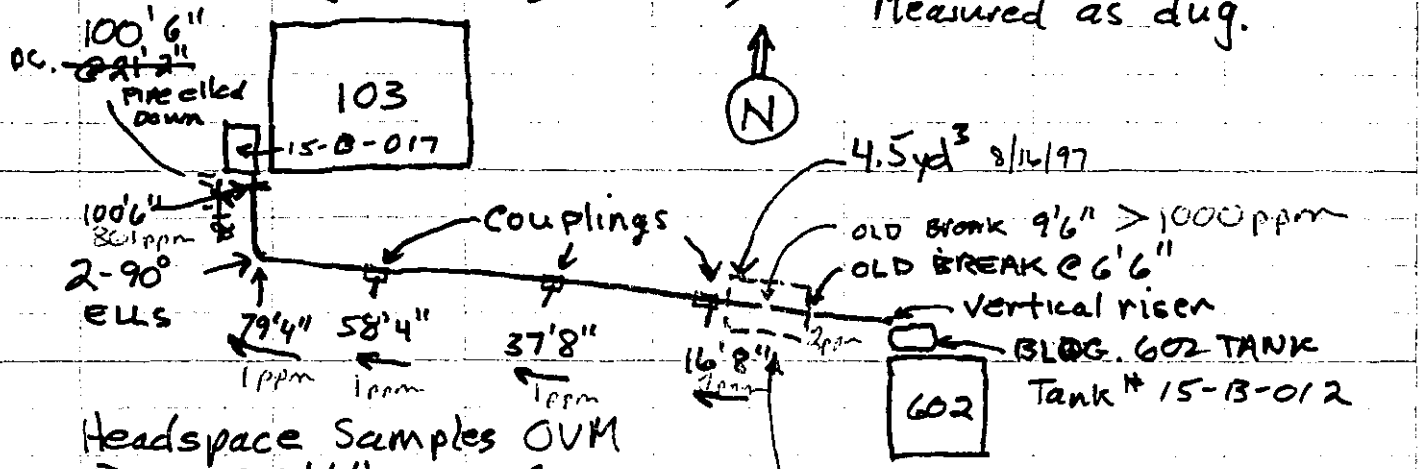
1330 OHM began to clear trench made by backhoe & expose line. Distribution line broken in two places (6'6" and 9'6" from vertical riser to tank @ Bldg 602. Evidence of rust on broken end indicate old breaks (not done during this excavation. Pipe is 1¼ I.D.

141360.A3.E11

** - work to be completed under ER addendum to Work Plan

*CMI, Construction Machinery, Inc. Fairbanks, AK.

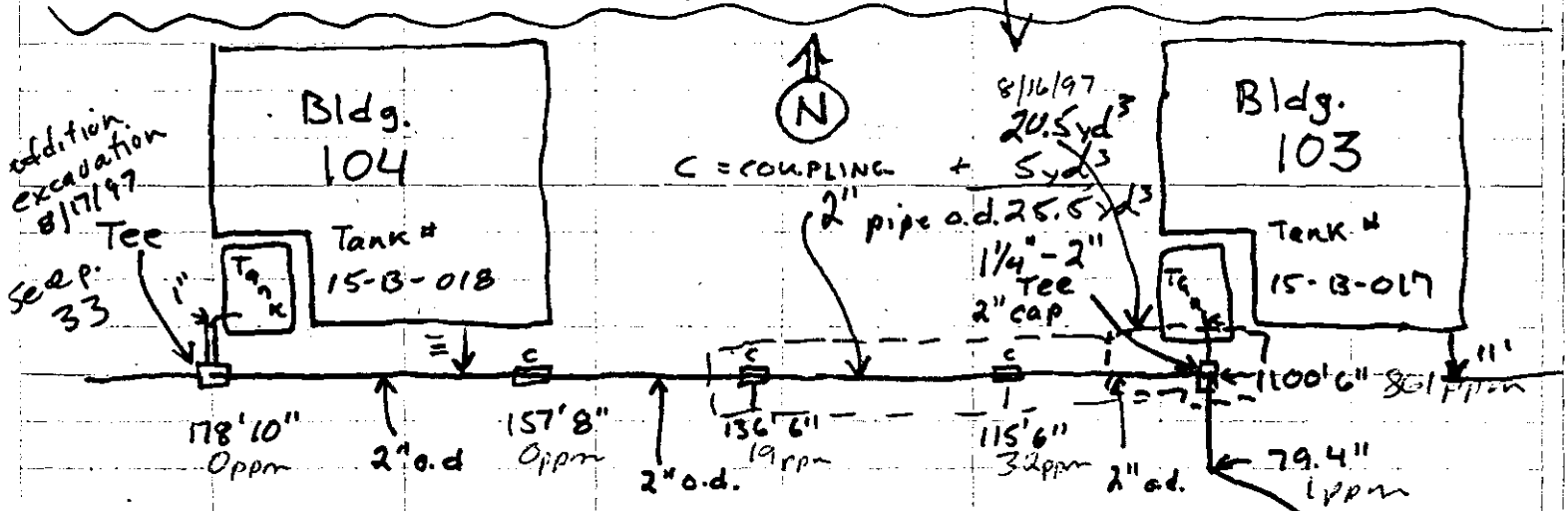
1400 Dave Corbett/Pete Henderson measure ~~bottoms~~ couplings in pipe line between Bldg 602 and Bldg 103. Measurement taken from vertical riser to Bldg 602 tank. 1st coupling @ 16' 8", 37' 8", 58' 4" Pipeline 15" deep (bgs) Measured as dug.



Headspace Samples OVM

Break @ 6'6"	=	2 ppm
Break @ 9'6"	=	>1000 ppm
Joint @ 16' 8"	=	2 ppm
Joint 37' 8"	=	1 ppm
Joint 58' 4"	=	1 ppm
2 ells 79' 4"	=	1 ppm

Note: See Ensys results on p. 34



1420 OHM Mel/Todd exposing 2" pipe (measures 2½ O.D.) approximately 50' east of Bldg 300.

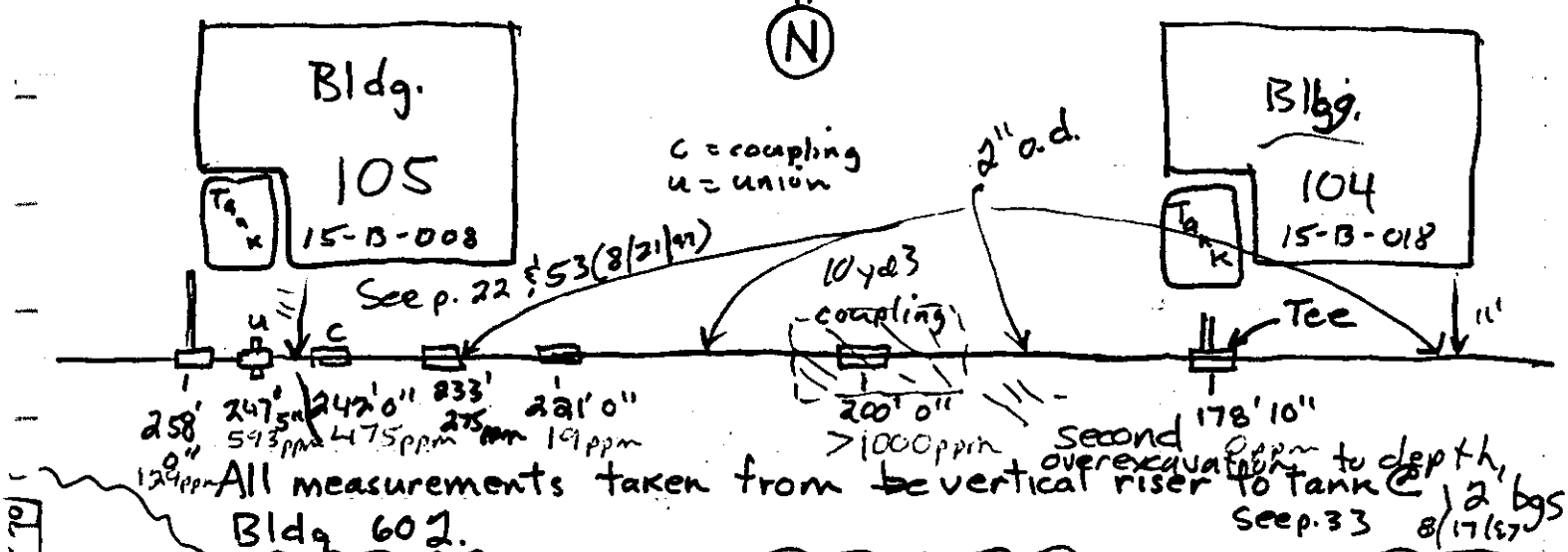
1445 Bob/Dave mark joints/Tees/ells on pipline. Measured as dug

Headspace Samples	OVM	Headspace Sample	OVM
100' 6"	861 ppm	157' 8"	0 ppm
115' 6"	32 ppm	178' 10"	0 ppm
136' 6"	19 ppm		

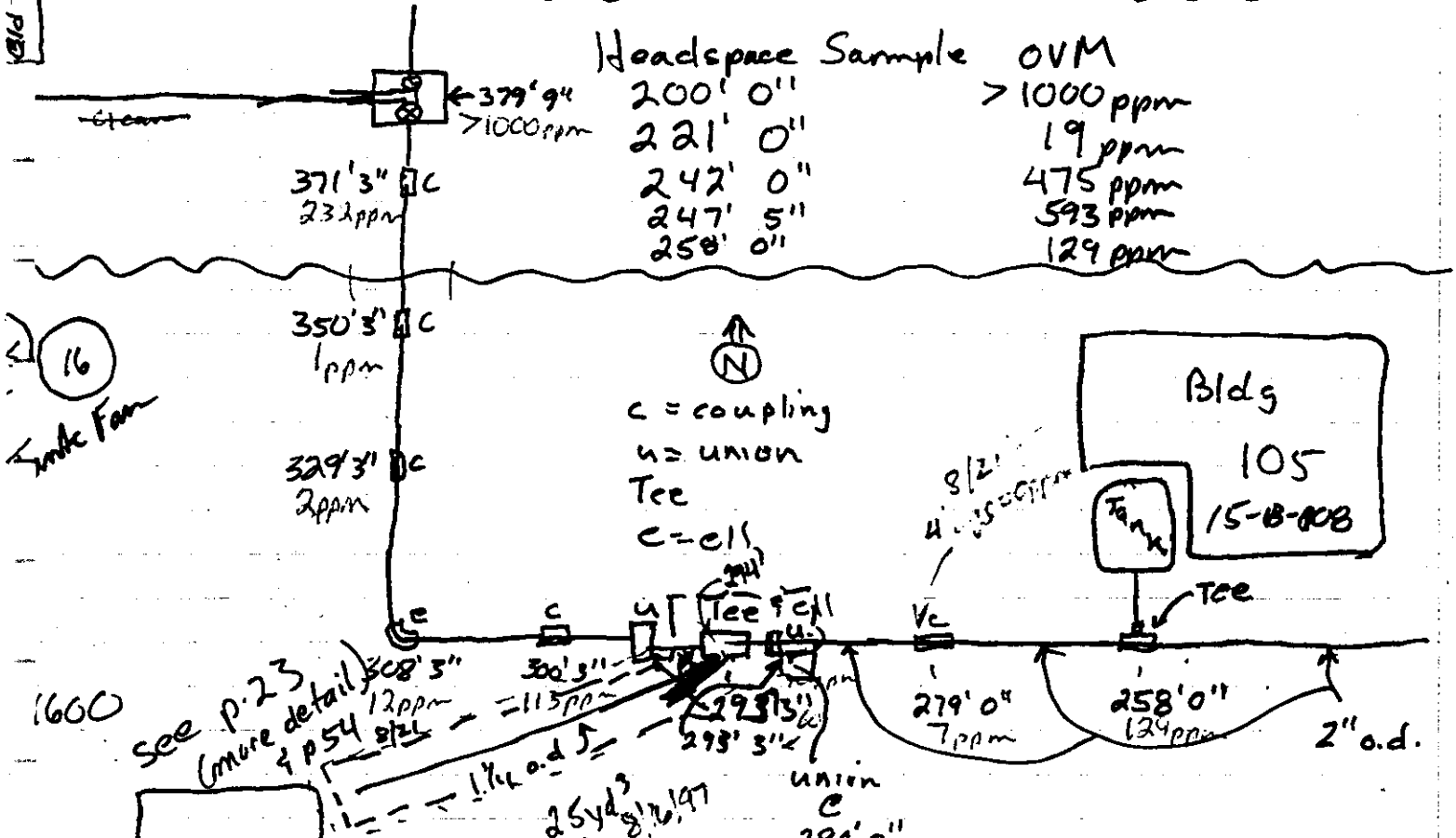
— additional excavation based on OVM readings

(17) Dave Corbett 8/14/97

1500 Measure & take headspace along pipeline from Bldg 104 - 105



Headspace Sample	OVM
200' 0"	>1000 ppm
221' 0"	19 ppm
242' 0"	475 ppm
247' 5"	593 ppm
258' 0"	129 ppm



Headspace Samples	OVM
279'0"	7ppm
293' 3"	60 ppm
295' 3"	71 ppm
300' 3"	113 ppm
308' 3"	12ppm

Headspace Sample	OVM
329' 3"	2ppm
350' 3"	1ppm
371' 3"	232ppm
379' 9"	>1000ppm

Dave Corbett 8/14/97 see p. 46

1700 - Took headspace sample and analysis w/OVM - from Bldg. 105 to valve box.

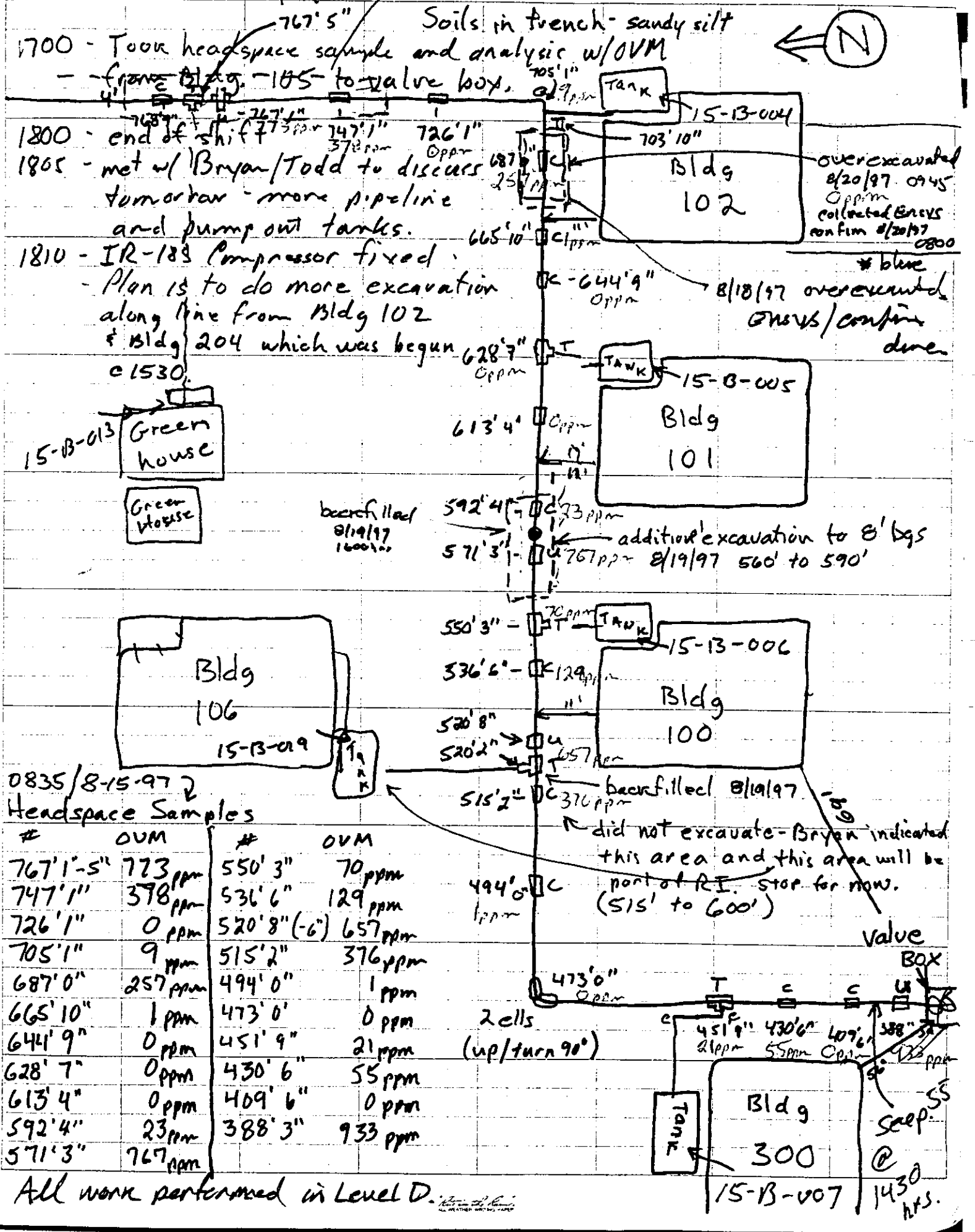
1800 - end of shift

1805 - met w/ Bryan/Todd to discuss tomorrow - more pipeline and pump out tanks.

1810 - IR-183 Compressor fixed.

- Plan is to do more excavation along line from Bldg 102 & Bldg 204 which was begun c 1530.

Soils in trench - sandy silt



0835/8-15-97

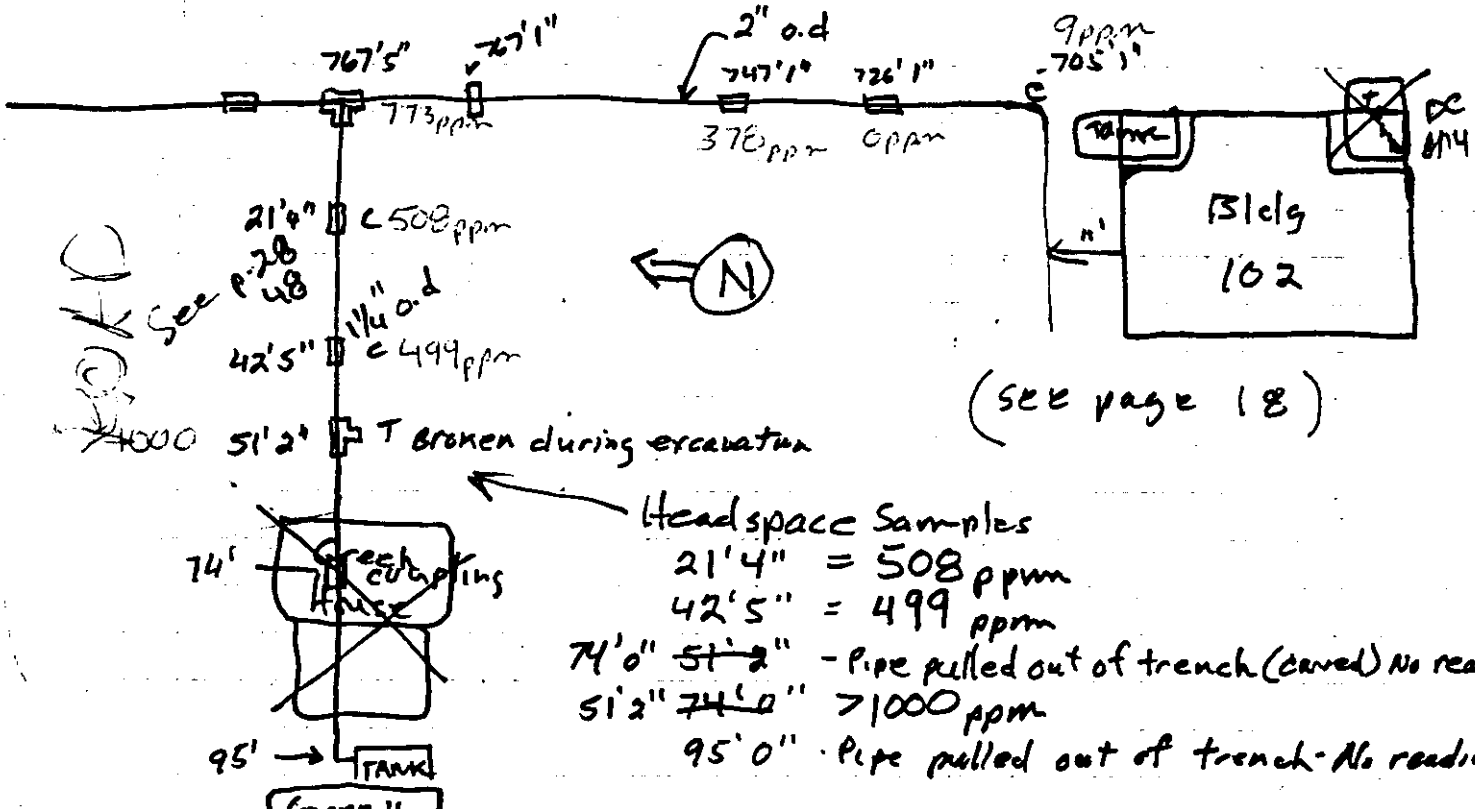
Headspace Samples

#	OVM	#	OVM
767'1"-5"	773 ppm	550'3"	70 ppm
747'1"	378 ppm	536'6"	129 ppm
726'1"	0 ppm	520'8" (-6")	657 ppm
705'1"	9 ppm	515'2"	376 ppm
687'0"	257 ppm	494'0"	1 ppm
665'10"	1 ppm	473'0'	0 ppm
644'9"	0 ppm	451'9"	21 ppm
628'7"	0 ppm	430'6"	55 ppm
613'4"	0 ppm	409'6"	0 ppm
592'4"	23 ppm	388'3"	933 ppm
571'3"	767 ppm		

All work performed in Level D.

(19) Dave Corbett 8/15/97

0615 - Breakfast WTX - Mostly cloudy Temp 50°F.
0645 Bob/Dave pickup ice @ FSS
0700 Bob calibrates instruments (OVM/LEL) @ FAA shop.
0710 H&S Mtg: On-site Staff: Bob Trebble, Dave Corbett CH2M Hill OHM: Todd Hiltunen, Mel Bryant, Pete Henderson, Rich Binkley, Chris Olds; FAA rep Bryan Carey. Issues: Backhoe Safety, avoid prolonged exposure in trenches; obey/contact pointman controlling backhoe/excavator operator. General Safety, Trip Falls etc.
0720 Chris/Pete begin pumping remaining fuel in Bldg 106 - Tank 15-B-019. ~~Rich/Mel continue to excavate pipelines near Bldg 102.~~ DC 8/15/97 changed see below 0845 hrs.
0725 Bob/Dave continue measurement/headspace samples in pipeline trench on E-W route along Bldg 100, 101, & 102.
0835 Finish headspace samples



Headspace Samples
21'4" = 508 ppm
42'5" = 499 ppm
74'0" ~~51'2"~~ - Pipe pulled out of trench (caved) No reading
51'2" ~~74'0"~~ >1000 ppm
95'0" - Pipe pulled out of trench - No reading

0845 - Gave Bryan head space readings - visited the work crews to note activities. & Pete
OHM (Chris/Rich building berm for ~~barrels~~ holding fuel transfered out of tanks. Todd & Mel excavating line running between buildings #204 and FAA Shop (Bldg 208) - OHM is going to skip that portion of the line (for now) running behind STATE shop (~~Power line~~?) (State equipment in the way) @ Approx. 150 ft of line exposed.
{Note: Using Tank 15-B-009 & 15-B-010}

Dave Corbett 8/15/97 (20)

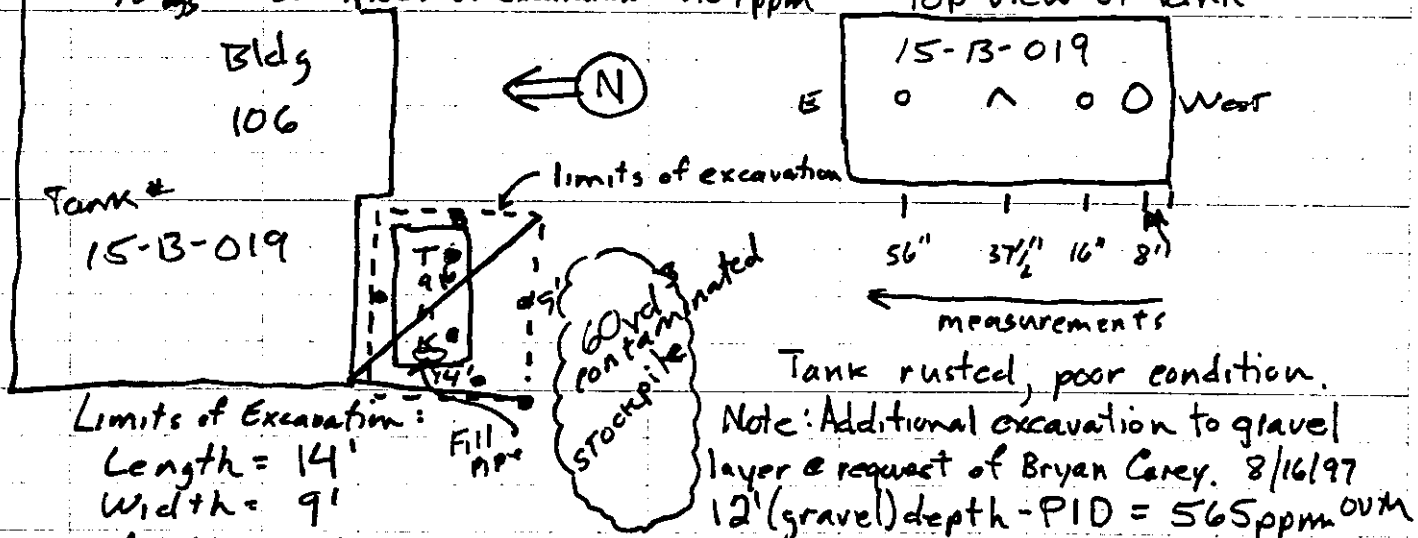
0900 - OHM (between 0730 & 0900) pumped out tanks @ Bldg 106 and Bldg 205). Volume will be calculated from dip readings. Current est on Vol. from Bldg 106 & 205 approximately 170gal.

Bob tested tanks @ Bldg 106 (22% of LEL) and Bldg 205 (6% LEL).

0915 OHM begins excavation @ Bldg 106 Tank 15-B-019 soil placed on plastic liner - Mel in Hitachi excavator

0920 Headspace sample:
South side of Tank 4' depth = 205ppm
Fill pipe on west end
8' bgs (under tank) = 59ppm, continues to excavate.
8' bgs (under tank) = 28ppm ". Tank dimensions:
Length = 74"
Diameter = 62½"

0945 Continue to excavate
10' bgs East floor of excavation = 181ppm
10' bgs West floor of excavation = 269ppm



Tank rusted, poor condition.

Limits of Excavation:
Length = 14'
Width = 9'
Depth = 14'

Note: Additional excavation to gravel layer @ request of Bryan Carey. 8/16/97
12' (gravel) depth - PID = 565ppm OVM

0950 OHM Chris (Todd) Pete begin pumping out tank 15-B-008 @ Bldg 105.

1000 Rich (OHM Backhoe) begins excavation @ Bldg 205 15-B-002 by laying out ~~use~~ plastic liner, setting up. (Todd & Rich).

1010 OHM (Chris/Pete) finish pumping out tank 15-B-008 @ Bldg 105.
Volume estimated by calculating from dip readings on page 3.

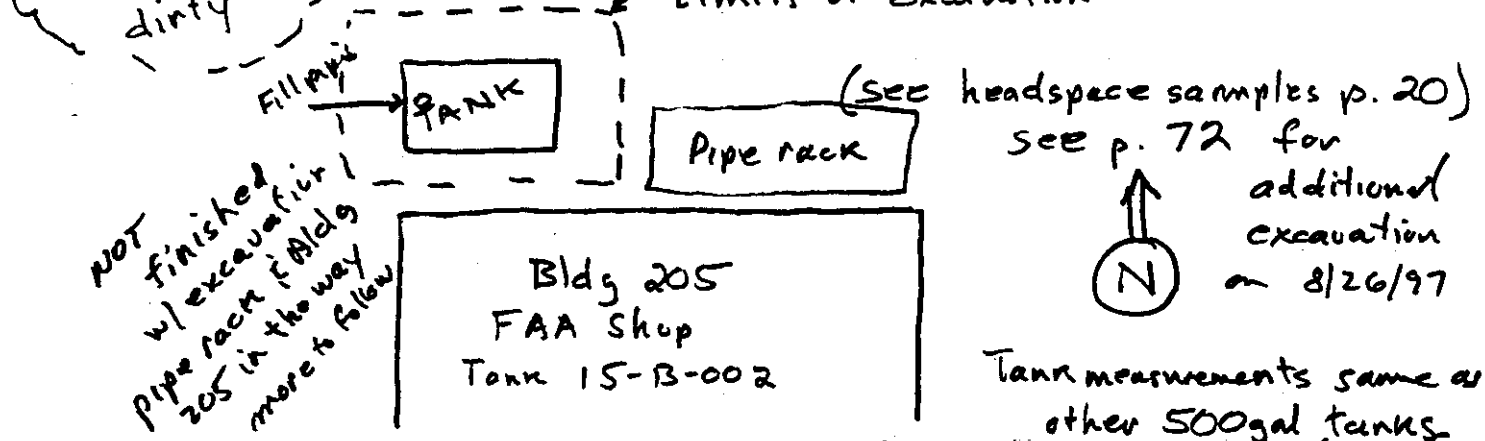
1030 OHM ready to pull tank 15-B-002 @ Bldg 205.

1035 OHM pulled Tank 15-B-002; Bldg 205
Headspace Sample: OVM @ Bldg 205
North side 5½ bgs = 322 ppm on Wall Bldg 205 Headspaces.
Fill pipe on West end
Continuing to excavate
6' bgs (under tank) = 99 ppm

• - confirmational sample location (⅔ down on walls)

(21) Dave Corbett 8/15/97

1040 - Excavation @ Bldg 205 Tank 15-B-002 - visible contam. under pipe rack & Bldg 205 - Bryan suggested halt till later. See below 1045 hrs.



Tank measurements same as other 500gal tanks

1045 Met w/ Bryan to discuss high levels of contamination @ Shop Bldg 205 and BLM Bldg 106 - visible contam/strong odor (see headspace readings p. 20) - Bryan suggested we not excavate further due to close proximity of bldg foundations, depth of excavation & lack of fill material - Bryan doesn't want excavation left open for long periods of time - rain may cause cave-in/sloughing and damage bldgs. Local fill unavailable @ this time (all haul trucks busy @ White Alice site) and OHM haul truck will not arrive until barge comes in next Fri. (8/22 or so). Bryan feels OHM can concentrate on tanks where fuel distribution system is relatively clean (i.e; Bldg 104 and area near Bldg 103 toward Bldg 602).

1110 OHM (Pete/Chris) begin pumping tank 15-B-005 @ Bldg 101. Fill pipe located on south end of tank. Finish @ 1130

1125 OHM (Mel on excavator) began excavation of tank 15-B-~~005~~ 008 @ Bldg 105

Headspace sample
South end 4' bgs = 0ppm
West side 5 bgs = 343 ppm

1138 OHM (Pete/Chris) pumping tank 15-B-004 @ Bldg 102.

1140 OHM continues to excavate @ Bldg 102

1145 Tank 15 B-008 (Bldg ~~102~~ 105) removed and set on plastic tarp next to contaminated soil stockpile.

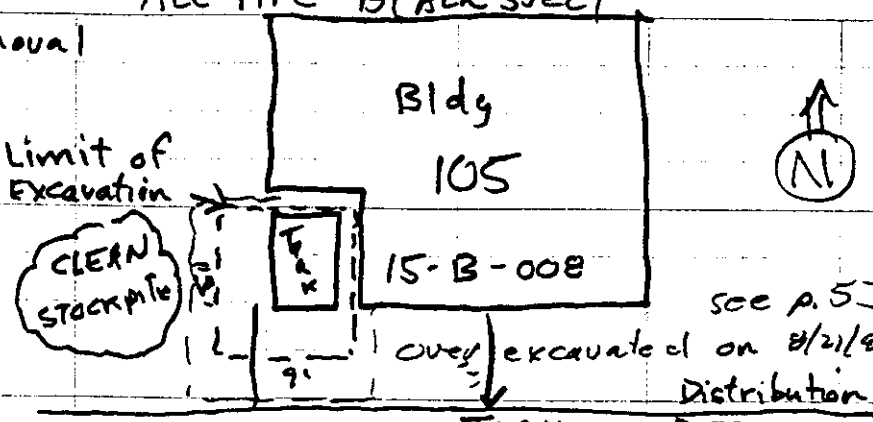
1150 Todd removed fuel from 1¼" pipe running between Bldg 602 and Bldg 103. Fuel recovered and placed in 55gal drum. (see drawing p. 16). Approximately 1 cu ft of contaminated soil was removed near the break in the pipeline @ 9'6" from Bldg 602 (See p. 16). Method to drain lines is to place bucket under one end of pipe and elevate other end. Bucket placed in hand dug sump.

Dave Corbett Friday 8/15/97

ALL PIPE BLACK STEEL

1150 - Finished tank removal @ Bldg 105.

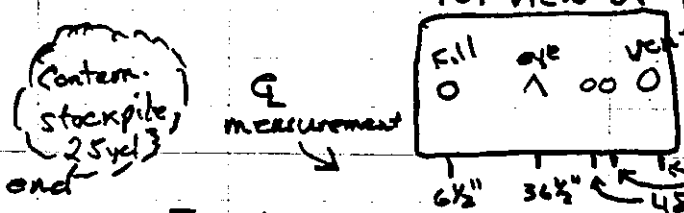
1155 Finish for lunch



Tank dimensions:
Length = 73½"
Diameter = 45½"
Fill pipe 2½ o.d
Supply/Return = ⅜" Cu
Vent = 1¾" o.d.

see p. 53 excavated on 8/21/97

TOP VIEW OF TANK 15-B-008



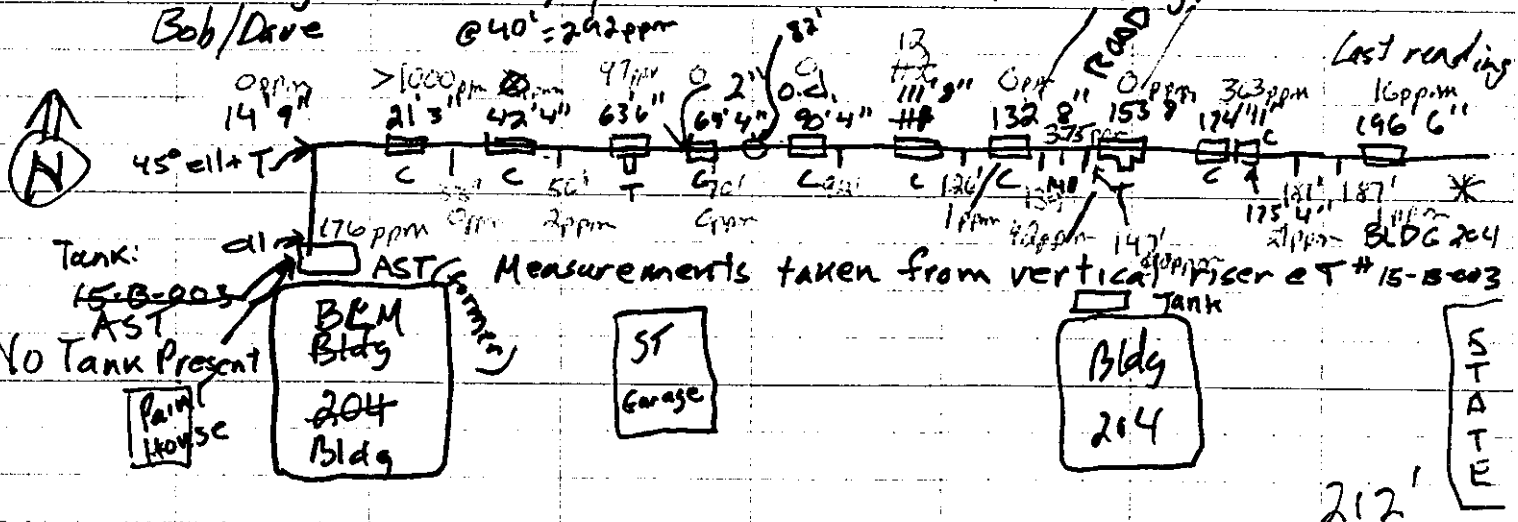
Fill pipe on South end

1255 OHM (Pete/Chris) pumping Tank 15-B-013 @ Greenhouse.

1300 OHM (Todd/Mel/Rich) pulling 2" o.d pipe line (after draining/drummy line) running on the South side of Bldgs. 103, 104, & 105. Approx. 2-3 gal of fuel recovered. Pipe being cut into approx. 10' lengths.

1320 OHM finish pumping Tank 15-B-013 @ Greenhouse. OHM moves to Bldg 602 to empty AST @ Water Treatment Bldg.

Bob/Dave @ 40' = 242 ppm



Headspace Samples			Headspace Samples		
0	=	176 ppm	132'8"	=	0 ppm
14'9"	=	0 ppm	153'8"	=	0 ppm
21'3"	=	>1000 ppm	174'11" (≈175'4")	=	363 ppm
42'4"	=	0 ppm	196'6"	=	16 ppm
63'6"	=	97 ppm	140' (under road)	=	375 ppm
69'4"	=	0 ppm			
90'4"	=	0 ppm			
111'8"	=	12 ppm			

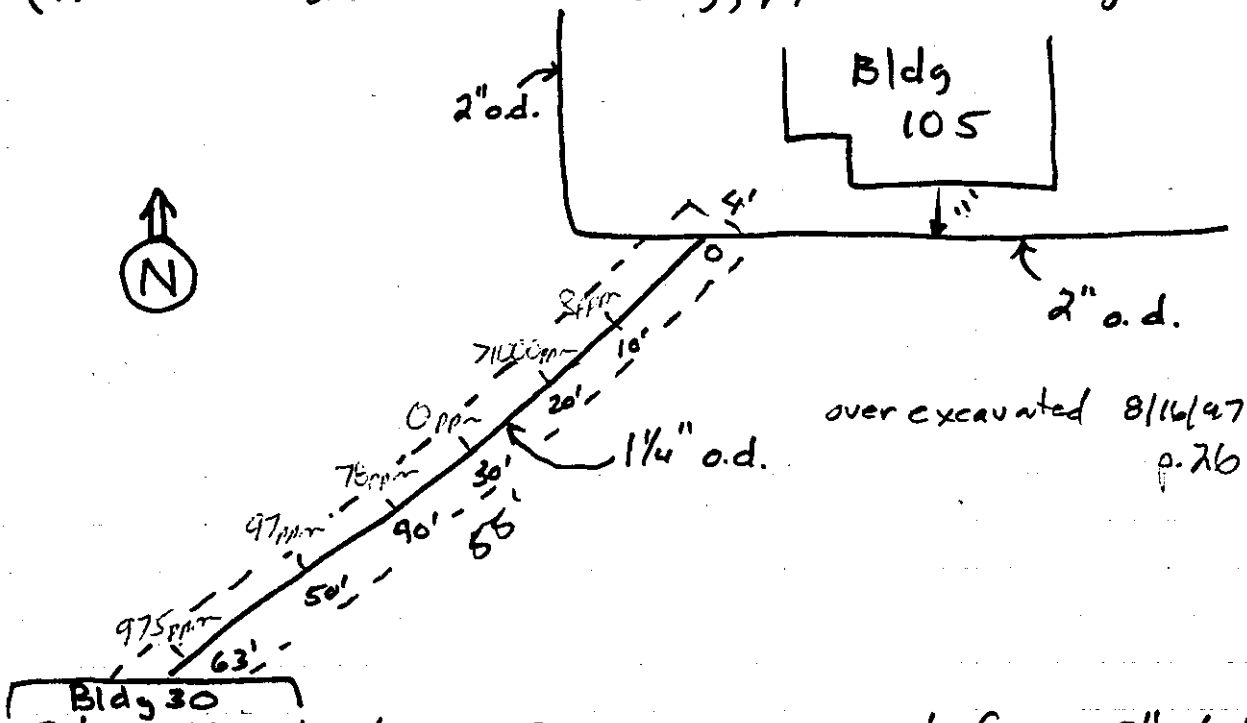
* additional headspace 8/17/97 1720 hrs

(23) Dave Corbett 8/15/97

1415 OHM (Pete/Chris) pumping Bldg 204 (Tank # 15-B-003)

1435 OHM finished pumping @ Bldg 204.

OHM (Mel on excavator) removing pipeline running from fuel distribution system (near Bldg 105) to Bldg 30. While excavating near Bldg 30 line broke and approximately 2-3 gal flow onto ground. (1¼" o.d. line). Trench 63' long; pipeline 2.5' bgs.



over excavated 8/16/97 1245hrs. p. 26

1500 Bob taking headspace Samples every 10' from 2" od dist. line to Bldg 30.

Headspace Samples

0	=	see p. 17
10'	=	8 ppm
20'	=	>1000 ppm
30'	=	0 ppm
40'	=	78 ppm
50'	=	97 ppm
63'	=	975 ppm

1520 OHM continuing to remove distribution pipeline - now working on N-S line running N-S (between bldg 100 and Bldg 300

1535 Bob/Dave take LEL readings of inplace tanks that were pumped out.

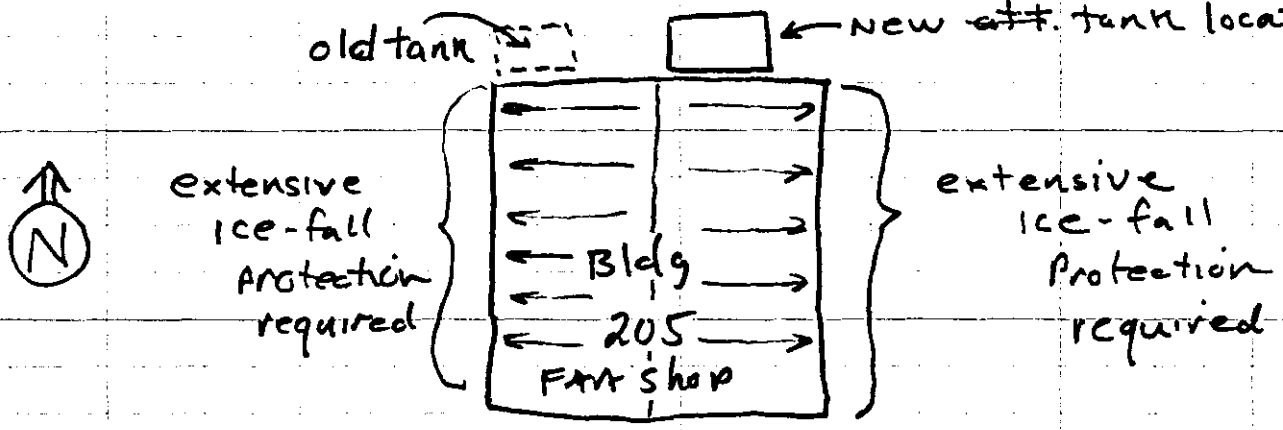
Bldg	TANK	%LEL
104	15-B-018	4%
102	15-B-004	0%
101	15-B-005	0%
Green House	15-B-013	4%

Bldg	Tank	%LEL
204	15-B-003	0%
300	15-B-007	0%

Dave Corbett 8/15/97 (24)

1550 OHM removing fuel from distribution system and cutting pipeline into 10' sections (currently on E-W 2" o.d. line running E-W between Bldg 100 & Bldg 106).

1400 Dave C. met w/ Bryam to discuss alternate site for new tank to be installed @ Bldg 205 (FAA shop) - Jim Swalling will try to get approval from FAA Sector to move piperack behind Bldg 205 to the east side of the shop. This would still allow room for drill-rig to position in rear of shop and would also negate the need for extensive ice-fall protection which would be required if new tank is installed on E or W side of shop. New location would be where present pipe rack is located.



1630 OHM continues to remove pipeline distribution system. Currently @ Bldg 102

1700 OHM removing distribution line. Currently close to Greenhouse
Total Removed = 768' 9"
95' 0"
863' 9"

1730 OHM securing equipment and putting up caution tape around compound.

1745 Bob put instruments on charge

1800 Met w/ Bryan/Todd to discuss tomorrow's activities.
1815 end of shift
All work performed in Level D.

(25) Dave Corbett 8/16/97 Pipeline — Linear measurements are taken from drawing p. 16, 17, 18 & 19.

0615 Breakfast - WTX cloudy Low 40°F high 60°

0700 It's Mtg - flag hot stockpiles, obey point man on excavator/backhoe watch out for trenches, bees, utilities. General const. hazards Hazards w/ cleaning 3 15K Tanks/confined space/trenches

0730 Work Schedule - clean Tanks 15-B-014, 15-B-015, 15-B-016. backfill clean trench areas. Todd/backhoe will backfill clean areas of trenches, Mel (on excavator) will excavate flagged dirty areas, Bob will take headspace samples.

OHM (Todd-backhoe & Mel) remove tank #15-B-012 @ Bldg 602 (Water Treatment Bldg) stored @ temporary storage area near Bldg 205 (near bermed fuel storage NW of Bldg 205).

Bob took headspace sample 0-5' on distribution line (near Bldg 602 = 0 ppm. Excavated 7' to 19' linear (see p.16) (depth 2½' width 4' 3" 19'=length) - Headspace 0 after excavation. Rich (OHM) on backhoe backfilling pipeline trench from the 20' marker to 79'4" (see drawing p.16) Volume excavated = 4.4 yds³.

additional excavation

0910 Rich on backhoe (w/ Dave) backfilling clean sections of fuel distribution system.

additional excavation Bob/Mel excavating dirty sections based on OVM reading taken @ hot spots and additional readings taken during excavation. (approx 5' intervals)
Excavation 8'×19'×3½' + 2'×6'×2' = 20.5 yd³
Headspace sample = 0 ppm after additional excavation.

1000 Mel (excavator) excavating along fuel distribution system (marker 157'8' to 178'10") excavated @ 200'0" (>1000 ppm) until Bryan suggested we stop until Drewett/Swalling talk Monday about exceeding the 500 yd³ limit of Work Plan.

1030 Mel ~~back~~ excavating @ 293'3" marked on fuel distribution system Bob directing with additional OVM reading until < 10 ppm.

1100 Rich back filling fuel distribution line from 400' marker to 500' marker (determined to be clean from OVM readings (see p. 18). Additional excavations @ 430'6" (55 ppm) see p. 18).

Dave Corbett 8/16/97

1145 Met w/Bryan - he suggested on lower PID (<50) readings in areas of anticipated small excavations (< 2 yd³) to: ① leave excavation open, ② take PID reading, ③ RUN Ensys test.

OHM preparing to push over Tanks 15-B-014, 15-B-015, and 15-B-016. Removing catwalk on top of tanks.

1200 ~~Lunch~~ Tanks 15-B-014, 015, & 016 push over toward NORTH. Lunch

1245 OHM (Mel w/excavator) excavating fuel distribution line between Bldg 30 and Bldg 105. ~~Ch~~ Rich backfilling fuel distribution system between marker 600' to 670' (near Bldgs 101 & 102.

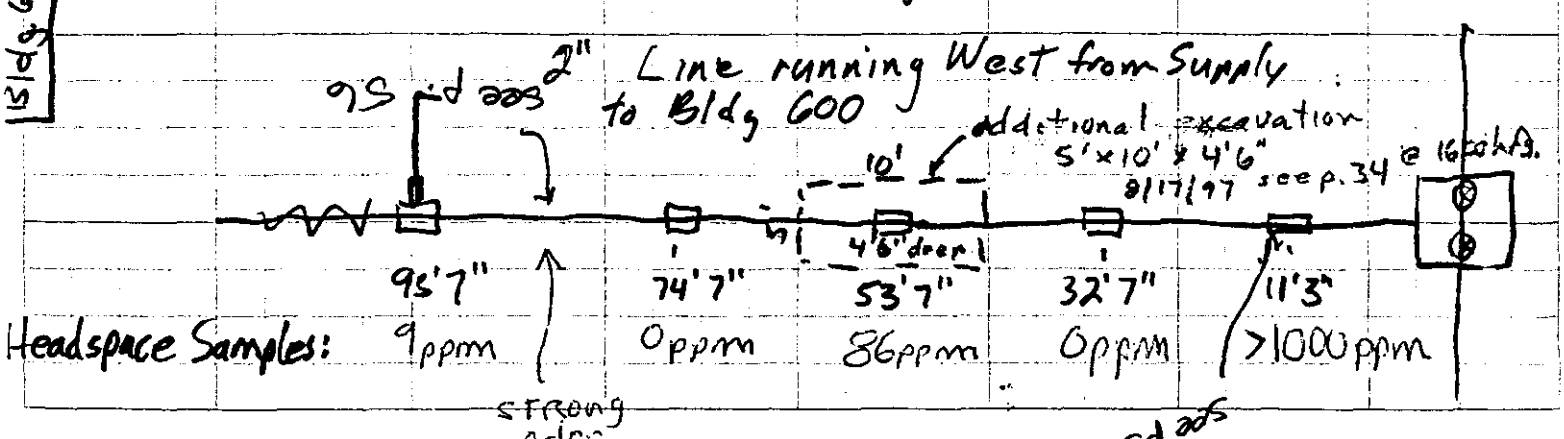
1300 OHM (Chris/Pete) transferring fuel from Bldg 100 Tank 15-B-006 Fuel volumes will be calculated from dip readings on p 3 & 4.
Tank 23 height
Farm: 10'6" dia > Tank # 15-B-014, 15-B-016

1310 Clean fill from City of Tanana being hauled to residential compound
Middle 18 height
Tank 14 diameter > Tank # 15-B-015
↓ Vol from Todd.

1315 Mel consolidated contam. piles. Imported fill from landfill area.

1330 Dave met w/ Bryan to discuss activities: Hauled by City.
1) Valve box (@ 379' 9") on fuel distribution system can be excavated. There are no nearby bldgs to interfere.
2) OHM can move Tank # 15-B-011, wood debris, and OHM welding equipment to allow access to river by locals. This would allow OHM to be able to excavate line across road between Bldg 100 and Bldg 300. This line connects Bldg 300 to the fuel distribution system.

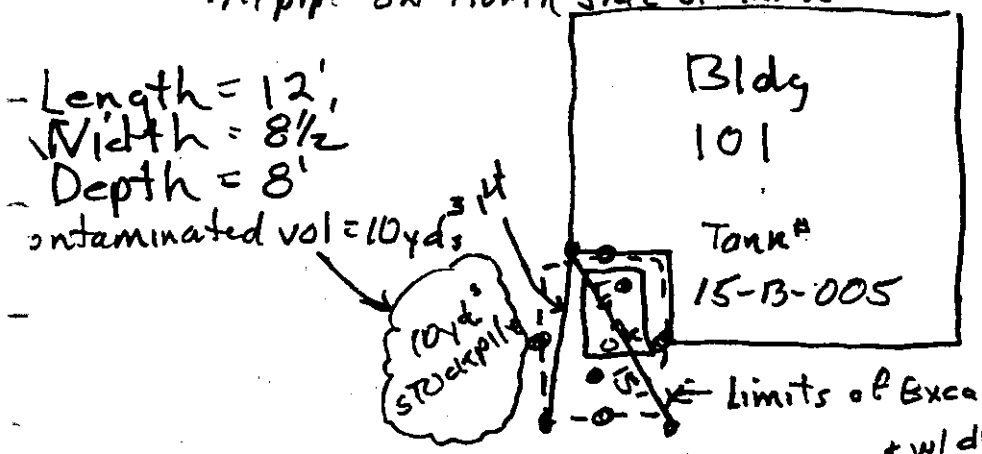
1345 Mel (excavator) exposing fuel system pipeline 2" that connects Eng-Gen (Bldg 600) Tanks 15-B-009 & 15-B-010 previously removed. Line (2") is 24" bgs.



(27) Dave Corbett 8/16/97 ● telephone pole locator

1415 Rich (@ OHM) asked Dave to take picture of OHM pulling Tank #15-B-005. Pulled Tank 15-B-005. Tank was excavated while Bob/Dave were measuring/headspacing 2" line from fuel distribution system to Bldg 600.
Fill pipe on North side of tank

Bldg 101 ↓



Length = 12'
Width = 8½
Depth = 8'
Contaminated vol = 10 yds³

Note: additional excavation 8/16/97 1630 hrs. PID = 0 ppm @ 8'

N

dirty soil put w/ dirty from pipeline system

1420 Bob taking head space samples @ → Tank 15-B-005
Length = 75"
Diameter = 3'10"

East Floor @ 5' bgs = 32 ppm
North Floor @ 5' bgs = 4 ppm (under tank)
South Floor @ 5' bgs = 0 ppm (under tank)
West Floor @ 5 bgs = 0 ppm
Stockpile HSpace SW = 0 ppm
E = 0 ppm
N = 8 ppm
S = 0 ppm

Top View of Tank

VENT	SUMP	N return	eye	Fill
O	O	O	Λ	O
5'9"	4'10"	4½"	36½	4½"

N

430 Rich excavated clean (west side) Mel will continue excavation because backhoe can't reach contaminated soil stockpile, ~~will~~ using excavator. oc 8/16/97
Pete removing line to Bldg 600 - cutting pipe 10' sections - collecting fuel.

1435 ~~Met backfilling~~ Rich (on backhoe) exposing tank #15-B-013 @ Green house. Bob taking headspace samples.

Bldg Block 3 lot 2 Greenhouse → Headspace Samples OVM

2' bgs South (fill pipe) 0 ppm
5' bgs West side 0 ppm
2' bgs Fill end East side 0 ppm
4' bgs East side (N end) 566 ppm
9' East side 345 Gravel @ 9'

East 11' bgs 171 ppm
East 12' bgs 111 ppm
East 12½' bgs 13 ppm

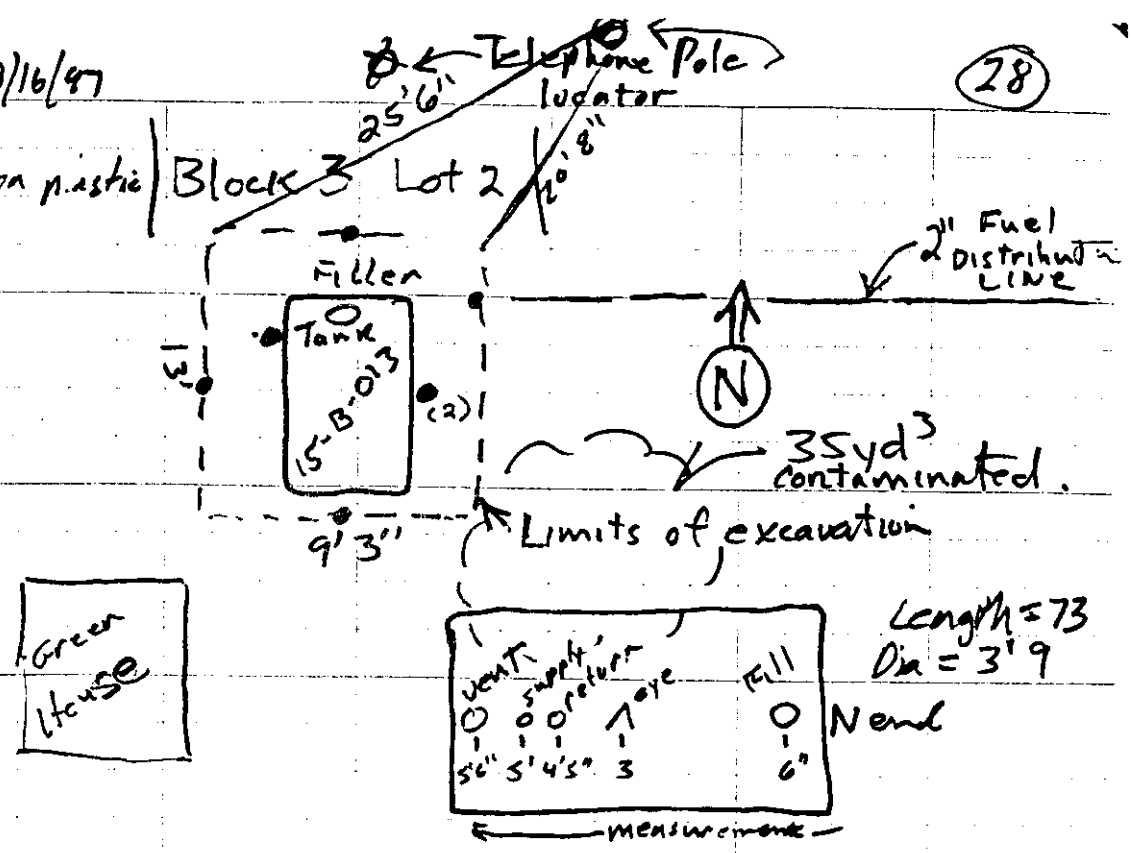
523 OHM pulled Tank #15-B-013 placed on plastic tarp.

Bryan said - no more excavation

● - Confirmational Sample locations

Dave Corbett 8/16/97

1525 - Tank placed on plastic | Block 3 Lot 2



1530 - Met w/ Bryan - Bldg 106 (see page 20) excavated to 10' - still contaminated. Bryan said no more excavation - NO Ensys - take confirmational samples. Deep enough for being so close to bldg. foundation.

1545 Dave makes list of excavations requiring confirmational samples so lables can be made:
15-B-013 @ Greenhouse (No Ensys - see ↓
15-B-005 @ Bldg 101
15-B-019 @ Bldg 106 (no Ensys per Bryan - 181 ppm & 269 ppm @ 10.5')
15-B-008 @ Bldg 105
~~15B @ Block 3 lot 2 Green House~~

1610 Bob/Dave sample (confirmational) @ Tank# 15-B-013 @ pc Greenhouse - Block 3 lot 2. Q3 ~~@ Bldg 101 Tank 15-B-013~~

1610	TAL97550140Q3	East Floor	DRO/BTEX	= Block 3 lot 2 (Greenhouse) → 87.8 lg
1611	TAL97550150Q3	West Wall	DRO	
1612	TAL97550160Q3	North Wall	DRO	
1613	TAL97550170Q3	East Wall	DRO	
1614	TAL97550180Q3	West Floor	DRO	
1615	TAL97550190Q3	South Wall	DRO	
1616	TAL97550200Q3	East Floor	DRO/BTEX	87.8 Duplicate of TAL97550140Q3

@ - confirmational sample location

(29) Dave Corbett 8/16/97

1630 Mel (excavator) completes additional excavation
Headspace @ 8'. ovm
8' depth Oppm

	Sample #	Location	Analysis	Comments	8/16/97 DC
1640	Bob collected Ensys samples (3) and Confirmational samples. @ Bldg 101 Tank# 15-B-005			Q4 = ~~Bldg 106/Tank 15-B-019~~	
1640	TAL 97SS021Q4	West Floor	DRO/BTEX	= Bldg 101 15-B-005 87.96g	
1641	TAL 97SS022Q4	East Wall	DRO		
1642	TAL 97SS023Q4	East Floor	DRO		
643	TAL 97SS024Q4	South Wall	DRO		
1644	TAL 97SS025Q4	North Wall	DRO		
1645	TAL 97SS026Q4	West Wall	DRO		

~~1715~~ Ensys Samples: Bldg 101 Tank 15-B-005

1650	North Wall	0.33
	West Floor	0.02
	East Floor	0.35
	STD.	-0.06

15-B-019

1745 Bob collected confirmational samples @ Bldg 106 (Q5)

Time		Time	Analysis	Location	Bottle Weight
745	TAL 97SS027Q5	1745	DRO	West Wall	-
1746	TAL 97SS028Q5	1746	DRO	South Wall	-
747	TAL 97SS029Q5	1747	DRO	East Floor	-
1748	TAL 97SS030Q5	1"	DRO	North Wall	-
749	TAL 97SS031Q5		DRO	East Wall	-
1750	TAL 97SS032Q5		DRO/~~BTEX~~ (BTEX)	West Floor	87.39g

(See p. 20 for location)

1800 Bob/Dave measure excavation @ Bldg 106 see p. 20
1810 Met w/ Brian to discuss tomorrows activities which include concentrating on tank removal - starting @ Bldg 105 Valve box on pipeline when tanks are removed.
1830 Check on Mel backfilling Bldg 106, Rich backfilling Bldg 30. need additional fill @ Bldg 30.
2000 Bob/Dave label samples

Bob 14 hrs.
Dave 14 hrs.

All work performed in Level D.

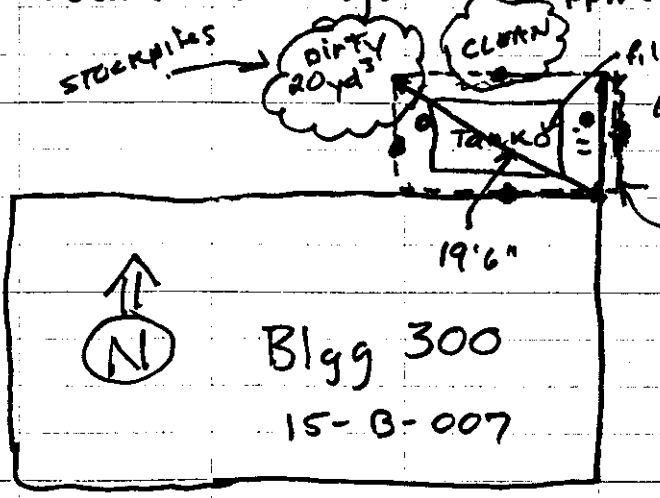
Dave Corbett 8/17/97 (30)

0615 - Breakfast - WTX overcast 46° raining
0700 H&S Mtg: Bob Trebble, Dave Corbett/CH2M HILL; Bryan Carey/FAA rep
OHM - Todd Hiltunen, Mel Bryant, Rich Binkley, Chris Olds, Pete Henderson.

0730 OHM (Mel on excavator) @ Bldg 300 Tank # 15-B-007
Approx. 2' of soil removed from top of tank. Bob taking head space samples. Rich (on backhoe) filling trench from marker 460' to 500' on fuel distribution pipeline, compacting.
Bob took LEL reading in tank 15-B-007 = 0%
Headspace Samples: Fill pipe on East end of Tank.
Vent end 2' bgs = 0 ppm
Middle of Tank 2' bgs = 2 ppm
Fill pipe end 2' bgs = 0 ppm
4' bgs, North side of tank = 0 ppm
West end 4' (NW) = 12 ppm
4' bgs SE corner = 0 ppm
3' bgs South side = 3 ppm

OHM pumping tank @ Bldg 100 Tank 15-B-006

0745 OHM pulled tank 15-B-007 @ Bldg 300
OHM took headspace sample from initial excavation @ Bldg 100 Tank 15-B-006.
Headspace Samples.
Fill end @ 2' bgs = 48 ppm
Vent end @ 2' bgs = 1 ppm
South wall @ 4' bgs = 0 ppm
Bottom of tank @ 6' bgs
7.5' bgs SW side = 18 ppm
8'6" bgs West end = 7 ppm
6' bgs North Wall = 24 ppm
excavated North wall 1 bucket width
6' bgs North Wall = 0 ppm
6' bgs South Wall = 0 ppm
4.5' bgs East Wall = 0 ppm



Limits of excavation
Length = 13' yd³
Width = 11'
Depth = 9'

(Ensys on p. 31)

0800 Mel cleaning out excavation @ Bldg 300, Bob taking headspace samples.

• - confirmational samples

(31) Dave Corbett 8/17/97

0825 Bob collects Ensys samples from Bldg 300 Tank 15-B-007

Ensys Samples:	reading
6' bgs North Wall	0.42
9' bgs South Floor	0.22
9' bgs NW Floor	0.87
STD	-0.06

0830 Backfilled (complete) @ Bldg 30 (Tank location only)

0835 Pete/Chris finished pumping Tank 15-B-006 @ Bldg 100

0840 OVM preparing to pull tank 15-B-004 @ Bldg 102.
Bob takes LEL @ Bldg 102 = 0% O_2 = 20.9
Pete & Chris pumping out tank 15-B-007 @ Bldg 300 - tank was pulled before being emptied.

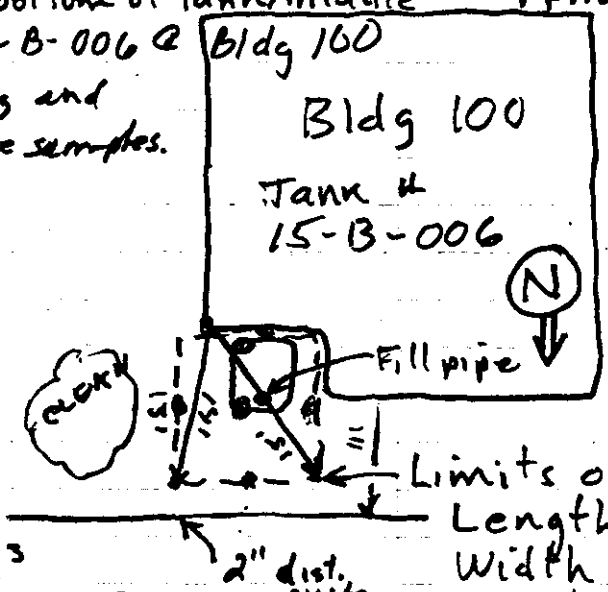
0855 Pulled tank 15-B-004 @ Bldg 102 DC
Mel doing further excavation based on PID readings that Bob is taking headspace samples. Stopped @ Bldg 102 to pull tank @ Bldg 100 - Tank 15-B-006.
Mel excavating @ Bldg 100 Bob taking headspace samples

Headspace Samples Bldg 100 OVM
Northend of tank 2' bgs = 1 ppm
3' bgs East side of tank = 0 ppm
4' bgs East side of tank = 0 ppm
4' bgs Fill end N. end of Tank = 0 ppm
5' bgs (bottom of tank) middle = 0 ppm

Fill pipe - on N. end.
South wall 6' bgs = 0 ppm
East wall 6' bgs = 7 ppm
Northwall 6' bgs = 1 ppm
West Wall 6' bgs = 0 ppm
Floor under tank 6' bgs = 4 ppm

0920 Pulled 15-B-006 @

0930 Excavating and headspace samples.



Ensys Samples:	reading
South Wall	~~±0.06~~ 0.61
East Wall	0.31
Center Floor	0.03
STD	-0.06

*Contaminated soil from N. end of tank & dist. system added to existing contaminated soil from pipeline trench.

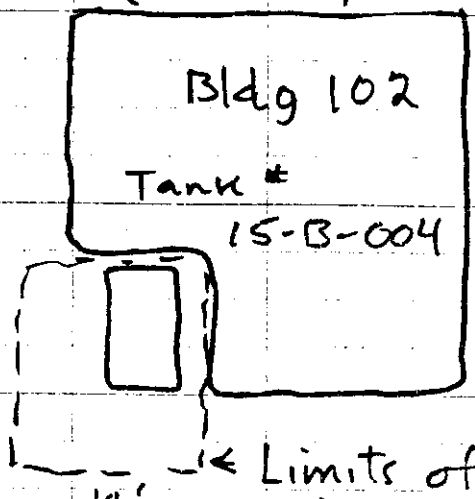
Note: N Wall sample in close proximity to contaminated fuel distribution system Trench.

0900 Bob collected Ensys samples.

• confirmational samples

Dave Corbett 8/17/97 (32)

1015 Dave ran Ensys samples for Tank Bldg 100 (see p. 31)
During the time that Dave ran the 3 Ensys set (Bldg 300, Bldg 100, Bldg 10
Met, directed by Bob's PID reading, excavated @ 104 Bldg 15-B-018
(See also p. 11 - OHM excavated to top of Tank on 8-13-97.



Excavation put on hold by Bryan - strong odor

(See p. 40)

deleditation excavation done 8-18-97 13'

10'

Limits of excavation (Initial)
Length =
Width = (see p. 40
Depth =

Approx 10 yd³ of soil removed - stopped by Bryan on >500 yd³ total issue

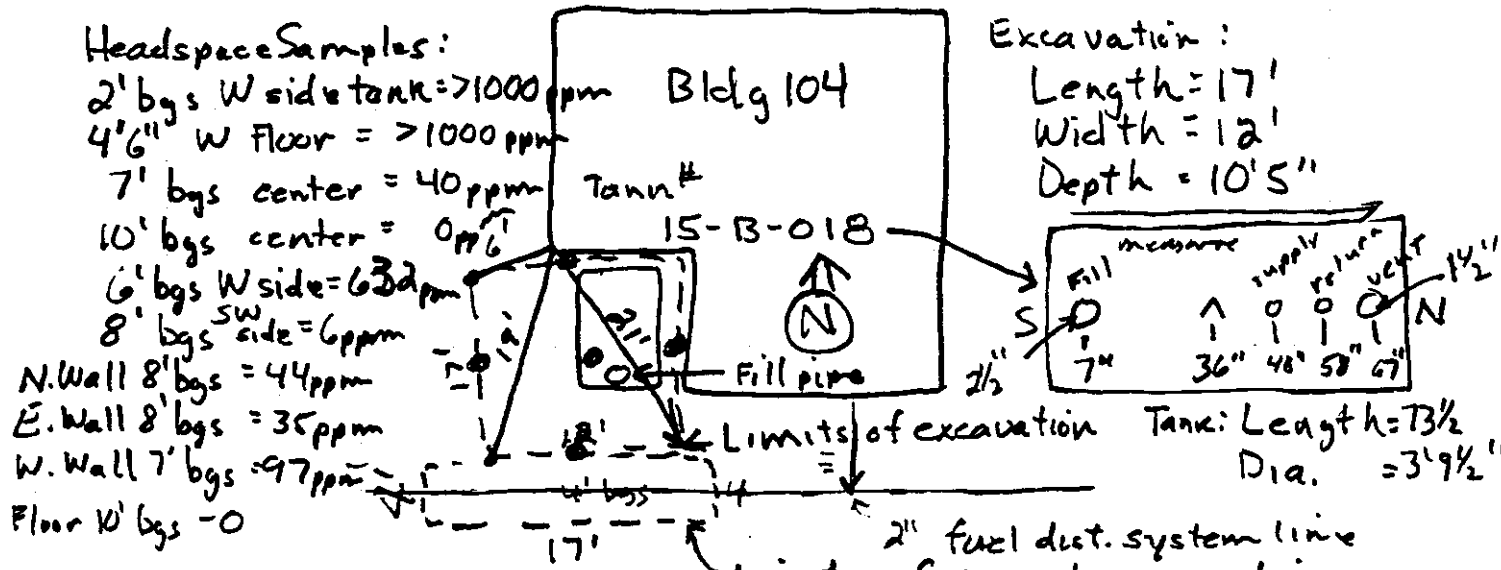
1045 Top of tank 15-B-001 exposed for access for LEL & purging.
1100 OHM setting up to pump gas storage tank @ Bldg 205 (FAA shop) Pulled tank 15-B-018 @ Bldg 104. LEL was 0% LEL
1130 OHM finished pumping Gas tank @ Bldg 205 - close proximity to power pole prevents over excavation.
1145 Met w/ Bryan - 8K tank in ROAD (Gas then Diesel) (Benzene/Pb) may be RCRA issues. Tank @ Shop (South of) is a registered tank.
Bob collected confirmational samples @ Bldg 104 Tank 15-B-018 locator in compound is Q8.
1215 Lunch
1245 Met w/ Bryan, Todd, Bryan Bob
Plan is to pull tank @ Bldg 204 and pull 15-B-001 @ Shop.
1310 First - Bob/Dave sample @ Tank 15-B-006 @ Bldg 100 (See p. 31)

	Bldg 100/tank 15-B-006 samples:		(Q6 locator)	Bottle weight
1345	TAL97SS033Q6	South Floor	DRO/BTEX	87.28g
1346	TAL97SS034Q6	South Floor (DUP.)	DRO/BTEX	87.42g
1347	TAL97SS035Q6	Middle Floor	DRO	
1348	TAL97SS036Q6	North Wall	DRO	
1349	TAL97SS037Q6	South Wall	DRO	
1350	TAL97SS038Q6	East Wall	DRO	
1351	TAL97SS039Q6	West Wall	DRO	

Note: Sample 34 ~~is~~ a duplicate of sample 33.

(33) Dave Corbett 8/17/97

1410 Bob/Dave collect pipeline ~~trench~~ Trench confirmational sample after excavation.
1415 TAL97SS040QP Pipeline @178'10" DRO/BTEX 1-2oz 1-8oz 87.78g
At 1015 hrs Bob took LEL = 0%; O_2 = 20.9 - started excavation.



At 1100 hrs - Bryan suggested stop digging - too close to Bldg 104.

Length = 17'
Width = 4'
Depth = 4'

1430 Mel backfilling @ Bldg 104 w/ clean fill also backfilled fuel distribution system trench excavation w/ same fill.

At 1400 OHM began pumping @ 8K tank on Airport road.

1435 Bryan/Dave/Bob - Bryan indicated excavations @ fuel distribution system pipeline (see p.16-in blue) Marker 9'6" and 100'6" ready for Ensys (and confirmational sampling if appropriate).

1440 Bob/Dave check activities @ 8K tank on Airport Road 15-D. Tank 15-D-001 Vertical 8K gal gasoline tank.
1445 Chris/Pete draining approx. 3" of gasoline in tank.
1450 Bob/Dave sample @ Bldg 300 Tank 15-B-007 (Q7 = Bldg 300)

1450	TAL97SS041Q7	East Floor	DRO/BTEX	87.50g
1451	TAL97SS042Q7	West Floo	DRO	
1452	TAL97SS043Q7	N. Wall	DRO	
1453	TAL97SS044Q7	S. Wall	DRO	
1454	TAL97SS045Q7	E. Wall	DRO	
1455	TAL97SS046Q7	W. Wall	DRO	

(See p.30)

• = confirmational sample location

Dave Corbett 8/17/97

1505 - Bryan suggested holding off on further excavation @ Bldg 102 until further direction from FAA. Also suggested we do ① Ensys on open excavations on fuel dist. system @ marker 9'6" and 100'6"

* DCorbett things to do

② Greenhouse line

③ Valve box to Eng Gen Bldg.

④ Temp fuel required @ VORTAC and FSS.

⑤ RCRA issue @ 15-X-001 8K Gas. Pb!

⑥ Spill Rpts -D- Profile?

7) Release investigation - Bryan said 10 so far FAA will decide if any this year.. maybe.

Mtg w/ Bryan - approaching 500yd³ excavated - need approval 750yd³

1525 Finished pumping @ 15-D-001 - prepared inerting 8K tank.

1530 Bob/Dave collect Ensys samples on fuel dist. system @ marker 9'6" and 100'6". Dave ran Ensys

Ensys Samples:
Pipeline 9'6" (2.5' bgs)
Pipeline 100'6" (3' bgs)

1550 Dave runs Ensys Samples

Sample	reading
STD	-0.04
Pipeline @ 9'6"	0.32
Pipeline @ 100'6"	0.23

~~1600~~ 16 Mel compacting/backfilling

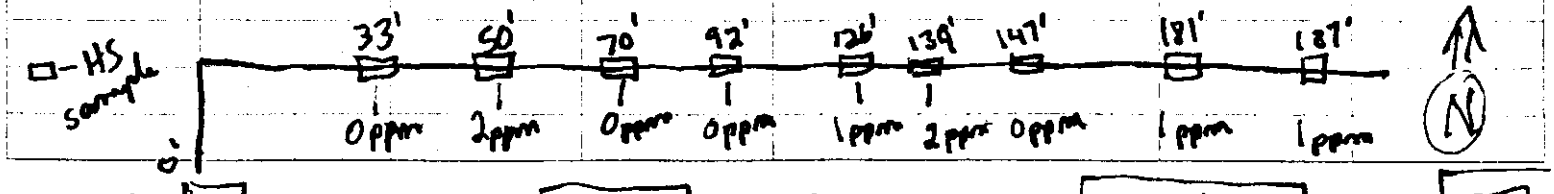
Mel (on excavator) removing soil from fuel distribution pipeline running west from valve box (see 86ppm reading @ 53'7" on p. 26) Excavation now 5' x 10' x 4'6" ← Bob took Ensys sample Dave will run Ensys sample 8/18/97. Headspace = 0ppm oc

1630 oc Note: QP = FAA residential area marker ~~4'6"~~ on fuel dist. PIPELINE. ~~TAL9755047T+~~

1700	TAL9755047QP	9'6 on Pipeline	DRO/BTEX	87.67g
1705	TAL9755048QP	100'6" on Pipeline	DRO/BTEX	87.65g

→ P = Pipeline Measurements are linear Feet from beginning (@ Water Treatment Plant - unless otherwise noted.

1715 Bob & Dave take additional headspace samples on fuel dist. system pipeline running E-W and located north of building #204 (See p. 22) Starting point is tank @ BLM bldg



BLM 204 ~~FATE~~ shed ST.

(35) Dave Corbett 8/17/97

Chris/Pete - inerting tank / prepared barricades @ 15-D-001 / prepared for tank cleaning.

Todd ordered additional plastic tarp.

Bob/Dave label samples from Bldg 104/15-B-018 (Q8 location designator)

Sample	Time			
TAL97SS049Q8	1115	East Wall	DRO	
TAL97SS050Q8	1116	North Wall	DRO	
TAL97SS051Q8	1117	West Wall	DRO	
TAL97SS052Q8	1118	South Wall	DRO	
TAL97SS053Q8	1119	Center Floor	DRO/BTEX	87.59g
~~TAL97SS054Q8~~	~~1120~~	(not taken)		

All work performed in LEVEL D.

Bob 12 hrs

Dave 12 hrs

Dave Corbett 8/18/97

0610 Breakfast WTX - clear 24°F

0640 Dave begins spill reports / Bob @ work site 1st LEL = 20.6% O_2 = 20.2

0700 H&S Mtg: Bob/Todd/Mel/Pete/Chris/Nick/Bryan

0730 - Setup @ Tank 15-B-001 (Shop) to expose top of tank. Mel moves tanks that have been excavated to tank farm area to be cut up. Top of 15-B-001 exposed. OHM inerting 15-0-001 (8K Gas tank on Airport Rd). Dispense Headspace sample @ 3' bgs (@ fill pipe >1000) Fill pipe vent @ South end. ~~Vent~~ pipe was rubber hose protected by Steel pipe (6" dia.)

Headspace 3' bgs dispenser vent = 0 ppm.
3' bgs fill wall = >1000 ppm
3' bgs dispenser vent wall = 0 ppm

0825 - Mel setup to excavate/remove Tank 15-B-003 @ Bldg 204.

Headspace: 2' bgs fill end = 92 ppm 5½' bgs Northside 3 ppm.
Stockpile from top of tank = 45 ppm
4' bgs north side = 41 ppm

Note: Spill report for Bldg 30 FAXed 8/14/97; Bldg 105 8/15/97

0850 - Dave faxed spill reports for: (TO: Mike Drewett/ANC)

0850 hrs
- Bldg 205 Tank # 15-B-002
- Bldg 300 Tank # 15-B-007
- Bldg 600 Tank # 15-B-009
- Bldg 600 Tank # 15-B-010

1130 hrs.
- Bldg 106 Tank # 15-B-019
- Block 3 lot 2 Tank # 15-B-013
- Bldg 104 Tank # 15-B-018
- Bldg 100 Tank # 15-B-006
- Bldg 101 Tank # 15-B-005
- Bldg 102 Tank # 15-B-004

0850 Bob/Mel @ bldg 204 - pull tank 15-B-003 - clean out hole & take Headspace

Headspace @ bldg 204
- West Wall = 2 ppm
- East Wall = 0 ppm
- South wall = 286 ppm
- North wall = 15 ppm
- East ~~wall~~ Floor = 2 ppm
- West Floor = 8 ppm

0855 After inerting LEL = 27% O_2 = 2%
Setup to excavate Tank 15-B-001

Headspace Samples:
5' bgs west side of tank = 1 ppm
Continually inerting tank LEL = 18 O_2 = 2.4
OHM cut hole in 15-B-001

(37) Dave Corbett 8/18/97

1000 Bob/Mel @ Bldg 204 Tank 15-B-003 clean out excavation for Ensys samples.

Headspace Samples @ Bldg 204:

South Wall 5' bgs = 8ppm

North Wall 5' bgs = 2ppm

West Floor 6' bgs = 8ppm (Permafrost)

1025 Bob collected Ensys samples Bldg 204

South Floor 6' bgs

North Floor 6' bgs

North Wall 5' bgs

Addition excavation @ Bldg 205

West Wall 8' bgs = 0

East Wall 8' bgs = 0

N. Floor 10' bgs = 0

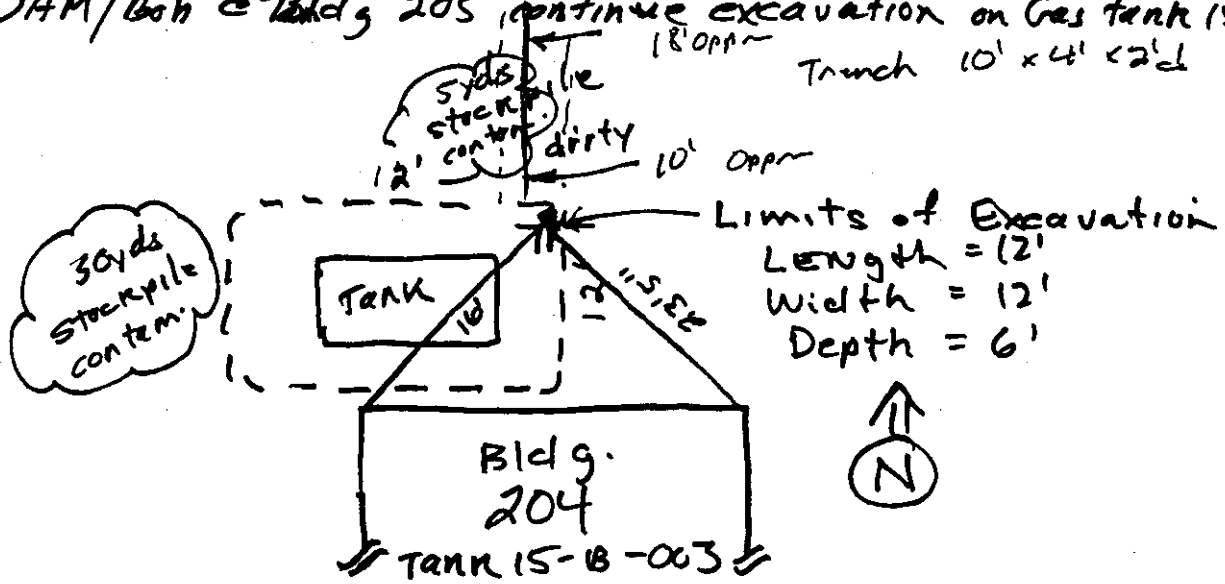
S. Floor 10' bgs = 123ppm

utility pole issue

excavated to 12' - Bryan stopped ex

1045 Bob @ Tank farm Tank 15-B-016 LEL = 0; O_2 = 20.8

1050 OHM/Bob @ Bldg 205 continue excavation on Gas tank 15-B-001



1145 Dave called Mike Drewett - left msg.

1150 Photo #11 see photo log in back of this notebook.

1200 Met w/ Bryan -

Mel digging @ Gas dispenser @ Bldg 205 - Bryan concerned about nearby utility pole - est. depth 10' - directed CH to stop @ this point.

1210 Lunch

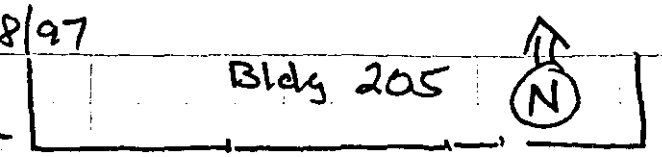
1240 Bob/Dave collect samples @ Bldg 205 Tank 15-B-001 (S1 = location)

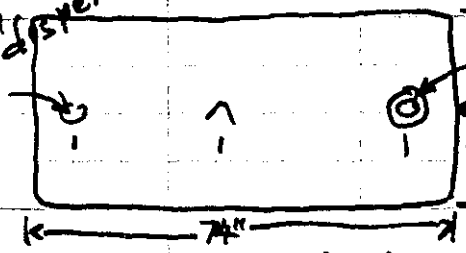
	Time	Location	Analysis	bottle weight	
TAL97550545I	1300	S. Floor	GRO/BTEX	87.37g	12' bgs
TAL97550555I	1301	Center Floor	GRO/BTEX	87.82g	12' bgs
TAL97550565I	1302	West Wall	GRO/BTEX	87.36g	8' bgs
TAL97550575I	1303	East Wall	GRO/BTEX	87.45g	8' bgs
TAL97550585I	1304	North Wall	GRO/BTEX	87.46g	8' bgs
TAL97550595I	1305	South Wall	GRO/BTEX	87.41g	8' bgs

4

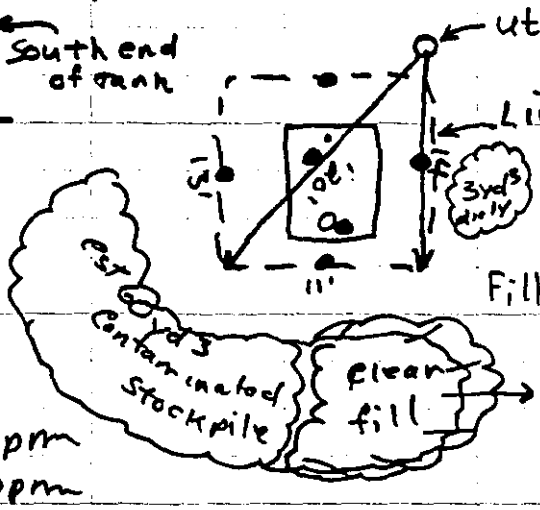
Dave Corbett 8/18/97

1300 Mel @ Bldg 205 end of excavation @ 12' bgs due to close proximity of utility pole - Bryan stopped excavation





Sandy/soft silt ↑ 9'
Gravel @ 9' bgs
Length = 74"
Diameter = 44½"



Headspace Samples:
South Wall 5' bgs = 1 ppm
North Wall 5' bgs = 2 ppm
East Wall 5' bgs = >1000 ppm
West Wall 5' bgs = 8 ppm
North Floor 7' bgs = 7 ppm; South Floor 7' bgs = 492; continue excavation

Concern on Utility Pole Bryan stop excavation.

1350 Bob collects confirmational sample on Tank Farm distribution line 53'7" west of Value box on 2" Line (see p. 26)

1400 TAL97SS060TF 1400 53'7" Tank Farm dist. Line DRO/BTEX 87.45g

1405 Mel backfilling Bldg 205 Tank # 15-B-001 with imported clean fill/also compacting.

1415 Rich backfilling fuel dist system trench where over-excavated and confirmational sample were collected (see 1350-1400 hrs above). ~~42'-72'~~ Portion of trench beenfilled was from marker 42' to marker 72' on tank Farm trench (see. p 26).

Chris/Pete cutting up tanks 15-B-016, 15-B-015 (See p. 18)

1500 Bob has bad cold/Dave/Mel @ Bldg 102 over excavating @ ~~257'~~ marker of fuel dist system. Overexcavate 1' deeper

687' Headspace ~~257'~~ marker = 0 ppm MD 8/18/97

1515 Mel (excavator) Dave taking headspace samples @ Mel overexcavates @ Bldg 102 - Tank 15-B-004. Cleaning out bottom of excavation.

Headspace Samples - 7' bgs center bottom = 344 ppm
5' bgs South wall = 567 ppm
5' bgs East wall = 342 ppm
7'6" bgs West Floor = 286

• - confirmational sample location

(39) Dave Corbett 8/12/97 Pipeline trench synonomous w/ Fuel Dist. System.

1530 Per discussions w/ Bryan - @ Bldg 102 Tank 15-B-004 OHM will excavate until sloughing is a problem or gravels are encountered @ the bottom of the hole.

Continue Headspace Samples @ Bldg 102

7'6" bgs East Floor = 348 ppm

5' bgs East Wall after over excavating 3' to the east = 557 ppm.

1600 Dave Met w/ Bryan - OK to over excavate to the east @ Bldg 102

Contaminated stockpile from pipeline trench moved west to other contaminated stockpile (from Bldg 102).

Pete/Chris continue to cut up Tank 15-B-015

1620 Bldg 102 overexcavated to 11'6"

Headspace Sample

11'6" bgs center of excavation = 90 ppm

East Wall @ 8' bgs = 851 ppm

North Wall @ 7'6" bgs = 255 ppm

North Floor @ 9' bgs = 482 ppm

1645 Over excavating another 3' to the east to a depth of 11-12'

South wall @ 8' bgs = 375 ppm

After 3' overexcavation to the East.

3' bgs ~~@ 3' h~~ East wall = 333 ppm

Gravel encountered @ 11'6"

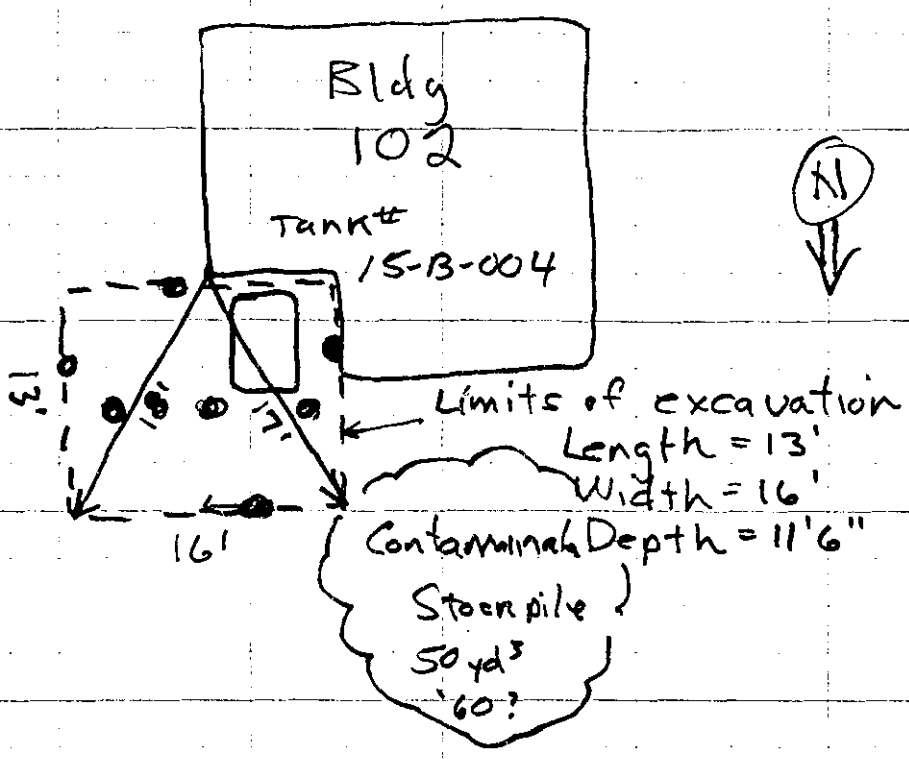
Bryan suggest 5 Floor confirmational samples.

time	Confirmational Samples @ Bldg 102:			Bottle WT.	
1700	TAL97SS061Q9	E. Floor	DRO/BTEX	87.74 g	
1701	TAL97SS062Q9	Center Floor	DRO/BTEX	87.77 g	
1702	TAL97SS063Q9	West Floor	DRO/BTEX	88.00 g	
1703	TAL97SS064Q9	North Wall	DRO		
1704	TAL97SS065Q9	South Wall	DRO		
1705	TAL97SS066Q9	East Wall	DRO		
1706	TAL97SS067Q9	West Wall	DRO		
1707	TAL97SS068Q9	East Wall*	DRO		(duplicate of TAL97SS066Q9

Pete in LEVEL B (supplied air) w/ Chris (Level B) - Pete inside Tank 15-B-016 cleaning sludge - pumping to 55 gal drum. Chris observing from outside. Same w/ Tanks 15-B-015 and 15-B-016.

duplicate of TAL97SS066Q9

Dave Corbett 8/18/97



1715 Finish Sampling, measuring.
Rich hauling imported fill to Bldg 102 - Mel backfilling & compacting

1730 Collected Ensys sample @ the 687' marker on the pipeline trench

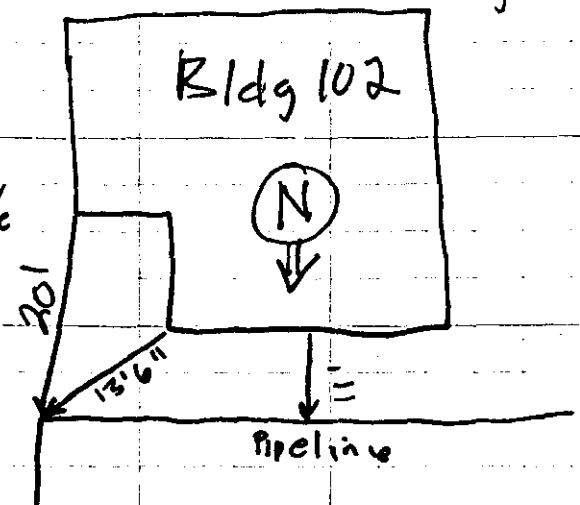
Pete/Chris cut Tank# 15-B-015 & 016 in half. 8/18/97

1800 Met w/ Bryan - spill reports for 15-B-001 and 15-B-003 will be faxed by Dave Corbett to CH2/OH/ANC in the morning 8/19/97

1815 Rich hauling imported backfill to Bldg 102/Mel backfilling/compacting

1830 GHM done

2000 + 2130 Dave labels samples/update notes.



● - Confirmational samples

(41) Dave Corbett 8/19/97

0615 - Breakfast - WTX - Clear Low 20°F

0700 H & S mtg - OHM Todd, Mel, Rich, Pete, Chris

Meeting - CH_2 Bob Trebble, Dave Corbett, Tom Wolfe

Dave/Bryan/Tom - FAA rep. Bryan Carey

ER workplan part of New (Final) Proj WP.

Alternatives to NDB for langfarming - SW

To do: (1) Tie fuel supply line capped end to State Bldg. Cap where line nears St. property. Remove clean fill that was inadvertantly covered.

(2) 15-D-001 (8K @ Airport road - remove - NO excavation.

(3) Start @ Fuel Dist. system behind Bldg 204 → STATE.

(4) Pump (60) 95' North of Eng Gen Bldg. (by 55 gal drums).

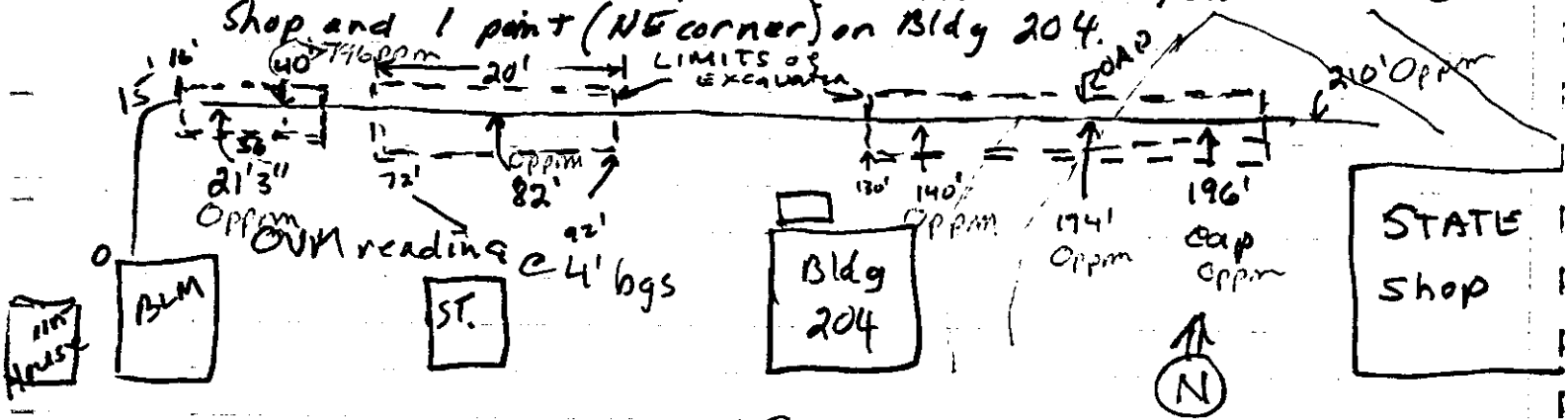
(5) Jim Swalling contacted Larry Pelagrini on profile for 15-D-001 (@ Airport Rd).

(6) CH_2OH get est on additional $ needed to exceed the 500yd³ limit.

0730 Bryan/Tom/Dave discuss alternative new tank location @ shop (Bldg 205) including moving pipe storage rack to East side of shop

Dave/Todd - OHM obtaining ≈500 yd³ of additional fill today

0740 OHM consolidating contaminated soil excavated from fuel dist. supply system pipeline running E-W between BLM bldg (near Bldg 204) and State shop. 0' starting marker is @ the site of the former AST (removed previously) located @ the BLM ~~Bldg.~~ Bldg. and running E toward the STATE shop. At the 196' 6" the pipe will be cut/capped and locator lines from 2 points (NW & NE corner) on the State Shop and 1 point (NE corner) on Bldg 204.



See p.37

Overexcavation 1-1½' deeper (4' bgs) than pipeline (12"-24"), 36' wide

0800 Bob/Dave mark pipeline for excavation

0815 Mel excavating from 196' 6" back to BLM Bldg (heading W.

Dave Corbett 8/19/97

0915 Met w/ Bryan - he ~~does~~ doesn't want any more excavation done until he receives approval to exceed the 600yd³ limit. OHM could install temporary fuel supply @ 1-55

0930 Pete/Chris cutting 15-B-015.

0950 Met w/ Tom Wolf - gave him 4 rolls of film for development.

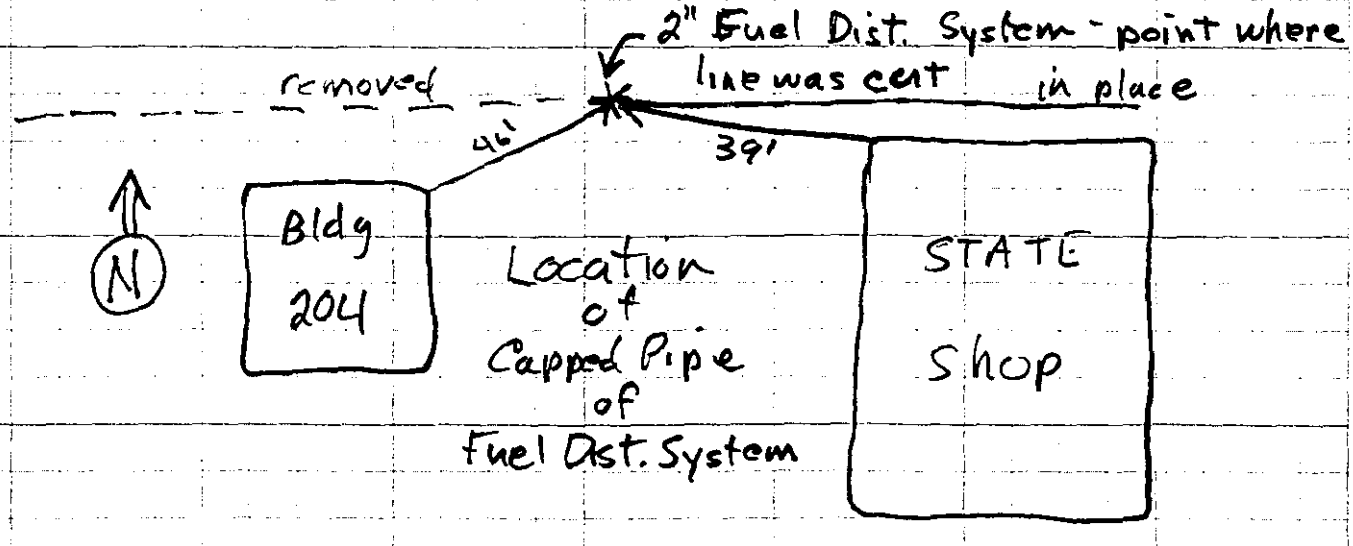
1010 Bob/Dave collect PID in Pipeline trench between BLM bldg and STATE Shop (see p. 41).

1045 Bob/Dave collect Ensys/confirmational samples. Dave met w/ Bryan - Dave/Bob will take samples, when sample are taken OHM can backfill (before Ensys samples are run). Bryan - OK.
Ensys Samples @ Pipeline (runs E-W; BLM Bldg → STATE SHOP N side)

210' marker =
196' marker =
174' marker =
140' marker =
82' marker =

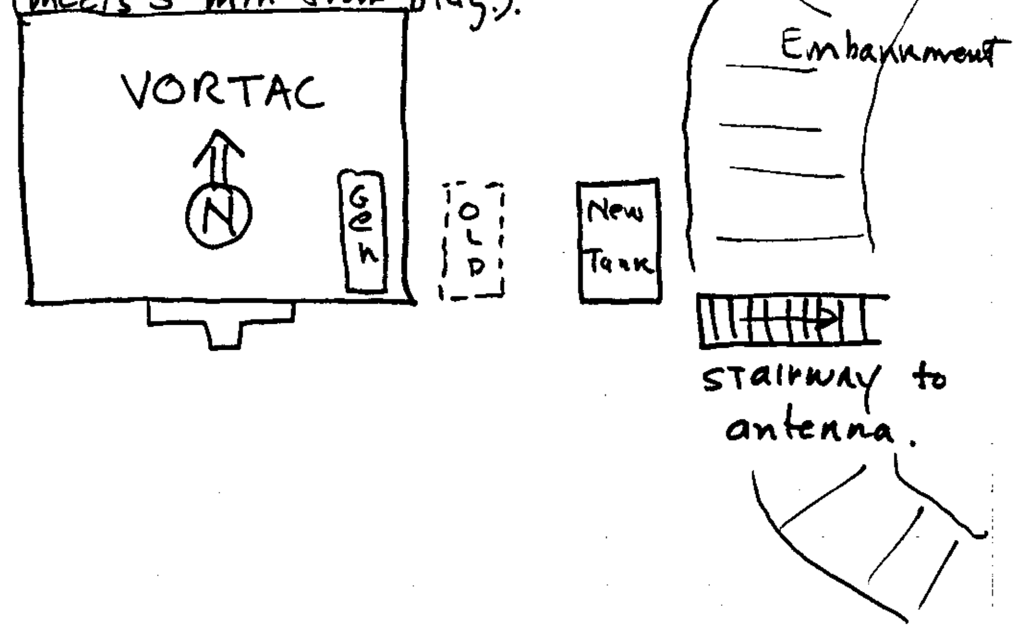
see p. 45

		Pipeline Trench	BLM Bldg → STATE Shop (North side)	
1100	TAL97S5069P1	210' marker	DRO/BTEX	87.45g
1101	TAL97S5070P1	196' marker	DRO/BTEX	87.76g
1102	TAL97S5071P1	174' marker	DRO/BTEX	87.44g
1103	TAL97S5072P1	140' marker	DRO/BTEX	87.98g
1104	TAL97S5073P1	82' marker	DRO/BTEX	87.73g



(43) Dave Corbett 8/19/97

1305 Arrived @ VORTAC w/ Bryan, Todd, Rick (FAA electrician)
- scoped out site for installation of temporary and new tank.
- Tank rotated 90° from drawing to allow installation @ bottom of embankment (meets 5' min from bldg.).



1350 Pete/Chris cutting tank 15-B-015

1430 on pipeline Met w/ Bryan & Todd: Walked compound to determine excavation
1) approval for an additional 500yd³ of excavated soil.
2) North line/Greenhouse line priority
3) Fuel pipeline between 106 (Bldg) & Bldg 100. Take 2 offsite lab sample from open pipeline trench (@ 515' marker and 520' marked section. Dig @ 571' marker.
4) Hold off on 105 Bldg; and Bldg 30
5) Line under road by shop NE of Greenhouse line.
6) Valve box off main line to TF. Dig - OK.
Change priority* → 7) Fill in 9'6" @ WTP; Fill in 100' 6" marker @ Bldg 103
Sample behind B (N) of Bldg 100; excavate
~~(450' - 536' marker)~~ DC 8/19/97
(560' → 630')

1445 Mel over excavating fuel system pipeline from the 560' marker (see p. 18) to the 630' marker

1500 Bob took to PID reading on the line going to Bldg 106 from the 2" supply line running E-W located North of Bldg 100 & 101 (See p. 18). Both reading >1000

Headspace Samples: Bldg 106 on the line from tank to Supply 2" pipeline

5' NORTH OF "T" to 106 >1000 ppm

15' NORTH OF "T" to 106 >1000 ppm

1530 After Mel overexcavated supply pipeline (560' marker to 630' marker) Bob took two confirmational samples: @ 1

1530	TAL97SS074P	515' marker on pipeline	DRO/BTEX	87.48g
1535	TAL97SS075P	530' marker on pipeline	DRO/BTEX	87.37g

Dave running Ensys:

	Ensys Reading
53'7" on Tank Farm supply line (53'7" west of Value Box) p.26	0.18
687' marker on pipe line (see ~~p.26~~ p.18)	-0.83
North Floor @ Bldg 204	0.09
North Wall @ Bldg 204	0.21
South Floor @ Bldg 204	0.04
STD -0.12	-0.12

1600 ~~Need to~~ Rich backfilled overexcavated area @ 9'6" on (H_2O Treatment Plant) supply line; also area by Bldg 103 (100'6" on pipeline).

1615 Mel overexcavating pipeline @ 740' mark to 768' marker
Headspace samples recorded below.

1630 Bob sample (confirmational) @ 575' marker on pipeline

1625 TAL97SS076QP 575' marker on pipeline DRO/BTEX 87.29g

Mel overexcavated on pipe line near 575' marker.

All work performed in LEVEL D.

1730 TAL97SS077QP 760' marker on pipeline (p.18) DRO/BTEX 87.88g

- Bob puts inst on charge / OWM secures compound

1800 - Met w/ Bryan to discuss tomorrows activities

2000 – 2100 > Notes/WP

(45) Dave Corbett 8/28/97 8/20/97

0615 - Breakfast - WTX overcast low 38° high 58°

0700 H&S Mtg - OKM: Todd/Mel/Pete/Rich/Chris
CH2M: Bob Trebble/Dave Corbett
FAA rep: Bryan
Issues: Cutting/torch safety - awareness of flopping tank sections
Backhoe/excavator safety
Trench safety

0715 Mel using ~~backhoe~~ excavator to move cut sections of Tank 15-B-05 to scrap ~~pile~~ pile. Rolled Tank 15-B-014 to cutting area.

Todd flying to Nenana to pick up new tanks/equipment - then Fairbanks - tanks/equipment will be flown to Tanana rather than barged.

Rich backfilling trench along pipeline leading from Greenhouse east to supply line, and trench for pipeline running north off supply line to Bldg. 106.

Bob getting ready to ship 1st cooler of sample (1000hr flight w/ Dale Erickson.

Dave running Ensys sample from North pipeline (BLM Bldg to STATE shop, E-W).

(See p. 22)

Ensys Samples		Photometer reading	
82' marker	pipeline BLM → STATE SHOP	0.31	ran 1000hrs - 1100hrs
140' marker		-0.06	
174' marker		0.31	
196' marker		0.19	
210' marker		0.14	
STD		-0.03	
687' marker main pipeline		0.18	

Dave collected Ensys sample @ main pipeline @ 678' marker after 1' over excavation (12'x3'x4' = 144 ft³ ≈ 5yd³ removed total)
Bob collected confirmational sample and duplicate DRO. 87.46g

0810 TAL97SS078QP 687' marker on pipeline DRO/BTEX ~~87.46g~~

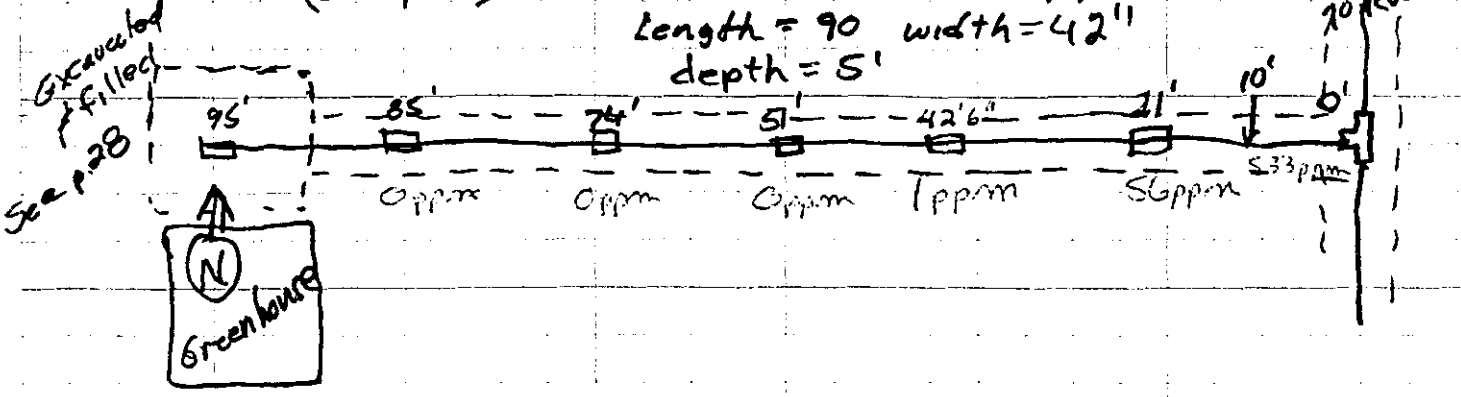
0811 TAL97SS079QP 687' marker on pipeline DRO duplicate of TAL97SS078QP

Pete/Chris cutting tanks @ tank Farm.

8/20/97

Excavator bucket = 42" wide

0815 Mel (excavator) overexcavating from Greenhouse to 2" supply pipeline (see p.19) Limits of excavation on pipeline
Length = 90 width = 42"
depth = 5'



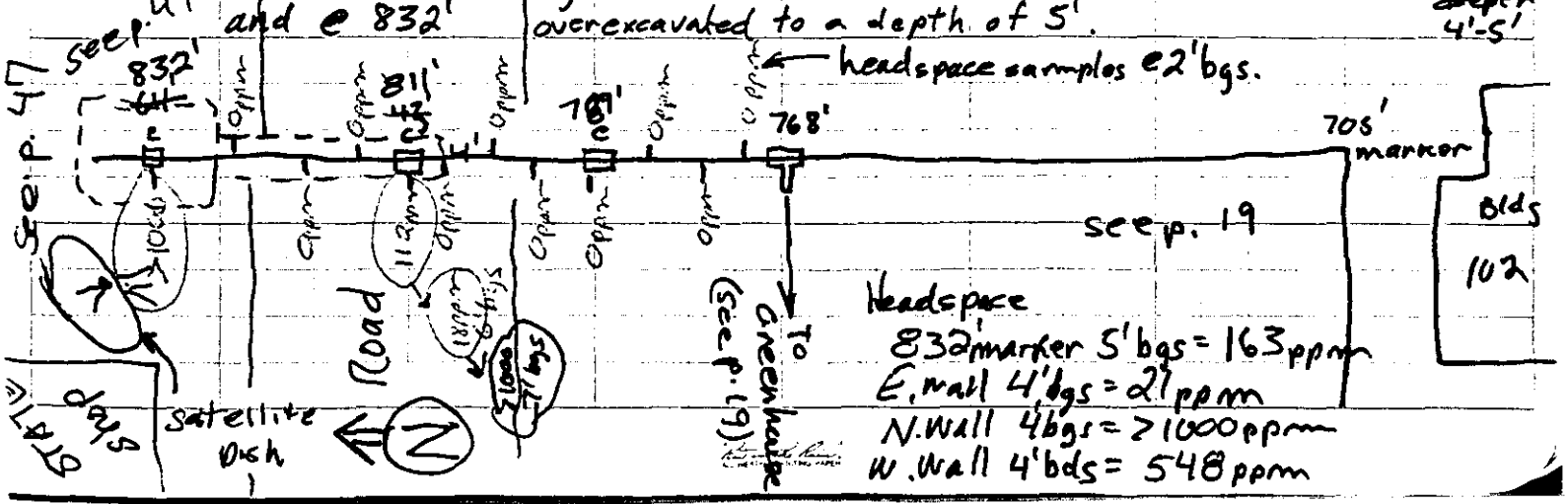
Bob/Dave collected confirmational samples (see p.44 for Ensys) @ Bldg 204. Bldg 204 = Q10

0900	TAL975508QQ10	North Floor	DRO/BTEX	87.49g
0901	TAL975508 1Q10	South Floor	DRO	
0902	TAL975508 2 Q10	South Wall	DRO	
0903	TAL975508 3 Q10	West Wall	DRO	
0904	TAL975508 4 Q10	North Wall	DRO	
0905	TAL975508 5 Q10	East Wall	DRO	

0915 Todd/Dave/Bryan - now @ 1000yd^3 - need 2nd approval to exceed excavation limit. Bryan will call powers to be.
Todd going to Fairbanks/Nenana to pick up equipment.
Rich backfilling pipeline trench N of Bldg 100 (Line leading from supply (2") to Bldg 106.
Also backfilling Bldg 204.

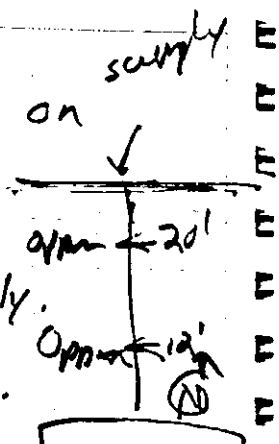
0930 Bob took 3 coolers to Dale Erickson for transport to LAB.

0945 Mel/Bob Excavating fuel system pipeline (North-South line from Bldg 102 To STATE shop. Over excavated @ 811' and @ 832' overexcavated to a depth of 5'. 811' deeper 4'-5'



(47) Dave Corbett 8/20/97

1100 Finished Ensys (see p.45)
Mel/Bob excavating (over excavating if high PID readings) on pipeline from 768' marker to 832' marker.
Headspace samples recorded on drawing on p.46.

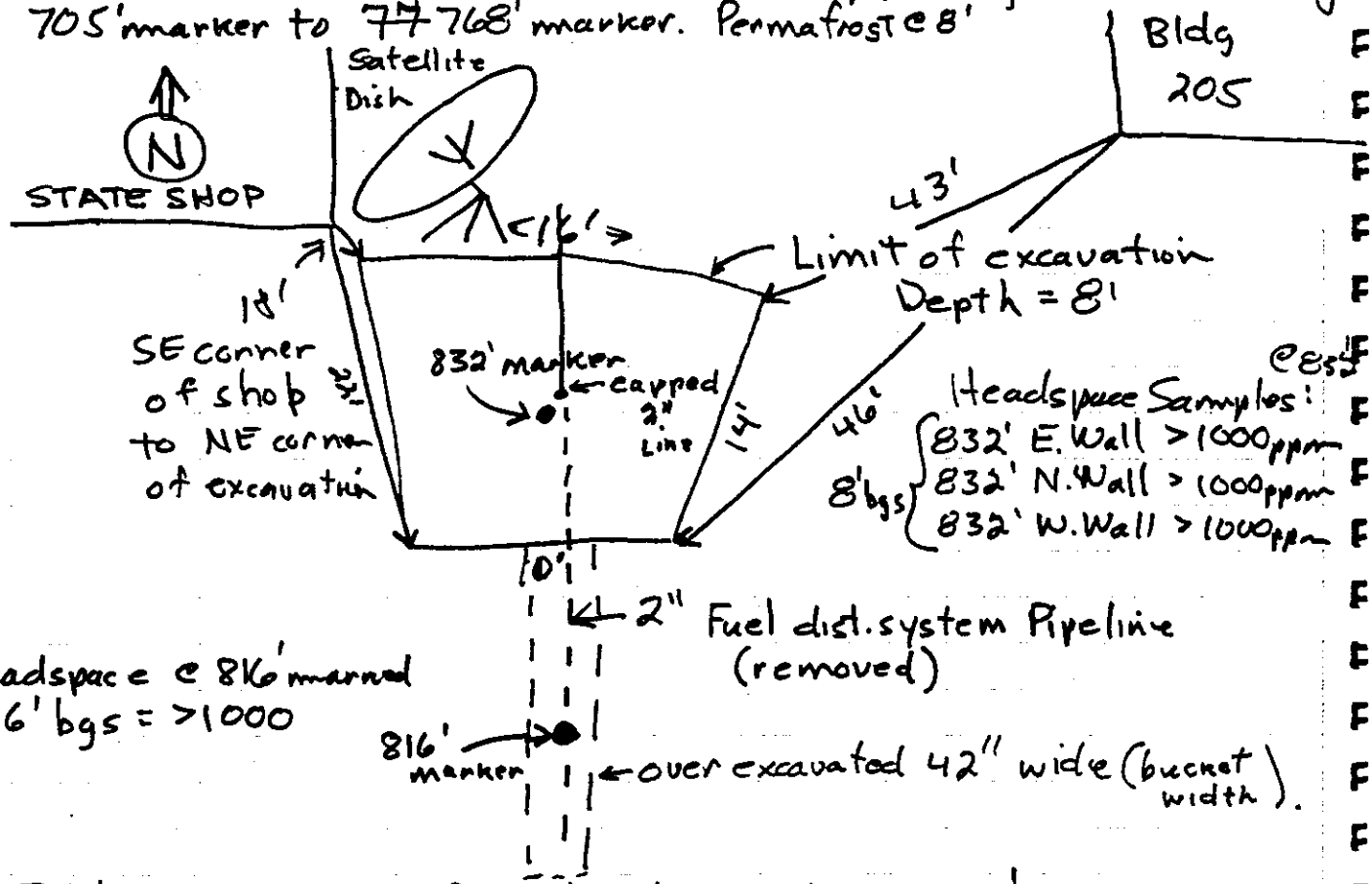


130 Rich exposed line from Bldg 204 to pipeline supply.
Headspace samples - from 204 supply line

145 Headspace samples from overexcavation @ 832' marker.

1200 Lunch

1230 Mel overexcavating @ 832' marker on pipeline; Rich backfilling 705' marker to ~~77~~ 768' marker. Permafrost @ 8'



1300 Bob/Dave collect confirmational sample @ 832' marker on pipeline (located SE of ~~State~~ State Shop; and @ 816' marker.

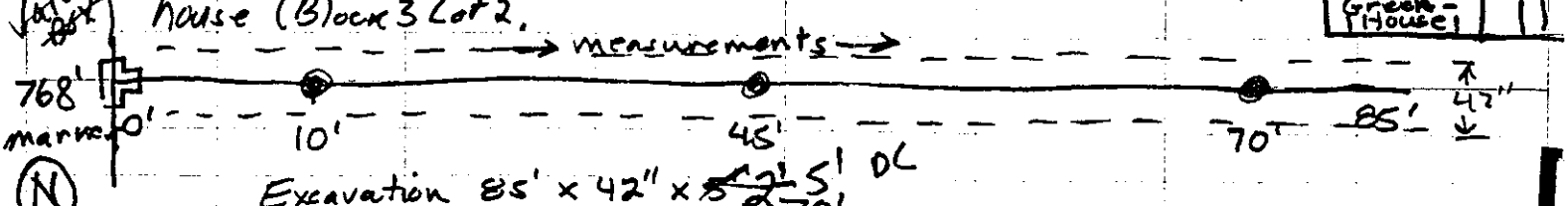
1300	TAL97550860QP	832' marker on pipeline	DRO/BTEX	87.61g
1301	TAL97550870QP	816 marker on pipeline	DRO/BTEX	87.44g

Pete/Chris cutting tanks @ tank farm.

• sample location for confirmational sample.

Dave Corbett 8/20/97 (48)

1330 Bob/Dave collect Ensys and confirmational samples @ pipeline running from 768' marker on pipeline West on supply line to Green-house (Block 3 Lot 2.



Excavation 85' x 42" x ~~5~~ 2 5' DC 70'

2 Ensys collected @ 45' and ~~75~~ 70' west of marker 768.

STD = -0.04
45' = 0.14
75' = 0.20

Permafrost @ 0 bgs - Greenhouse

See p. 46 for headspace readings

Collected Confirmational samples: Line running West to Block 3 lot 2

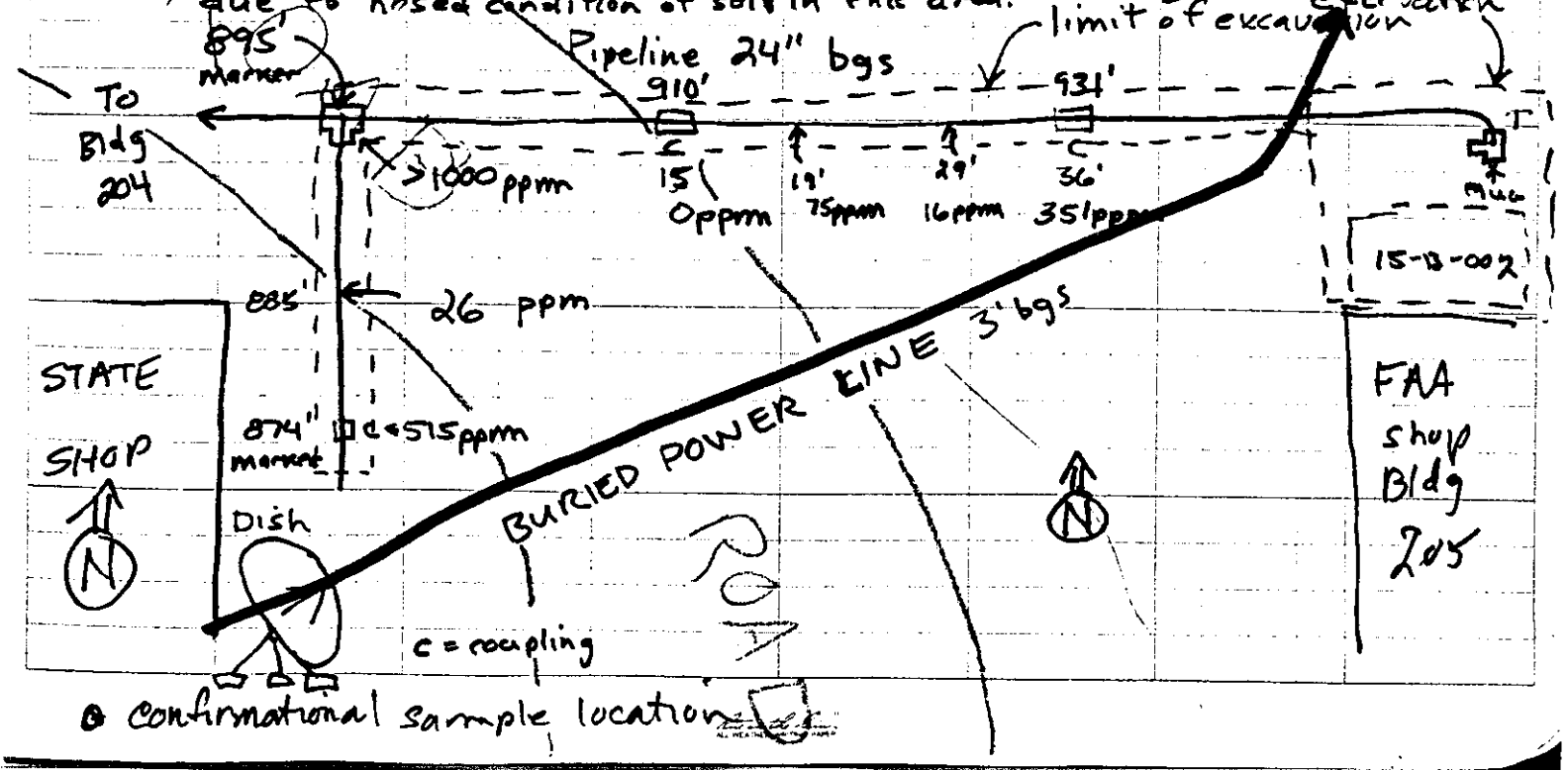
					BAT WT
1400	TAL97SS088QP2	45' west on supply line to Block 3 lot 2	DRO/GTEX	ESB	84
1401	TAL97SS089QP2	70' west on supply line to Block 3 lot 2	DRO/GTEX	87.46	9
1402	TAL97SS090QP2	10' west on supply line to Block 3 lot 2	DRO/GTEX	87.35	5

↖ Samples collected @ ~~5~~ 5' depth.

Rich (backhoe) backfilling excavation @ 832' marker.

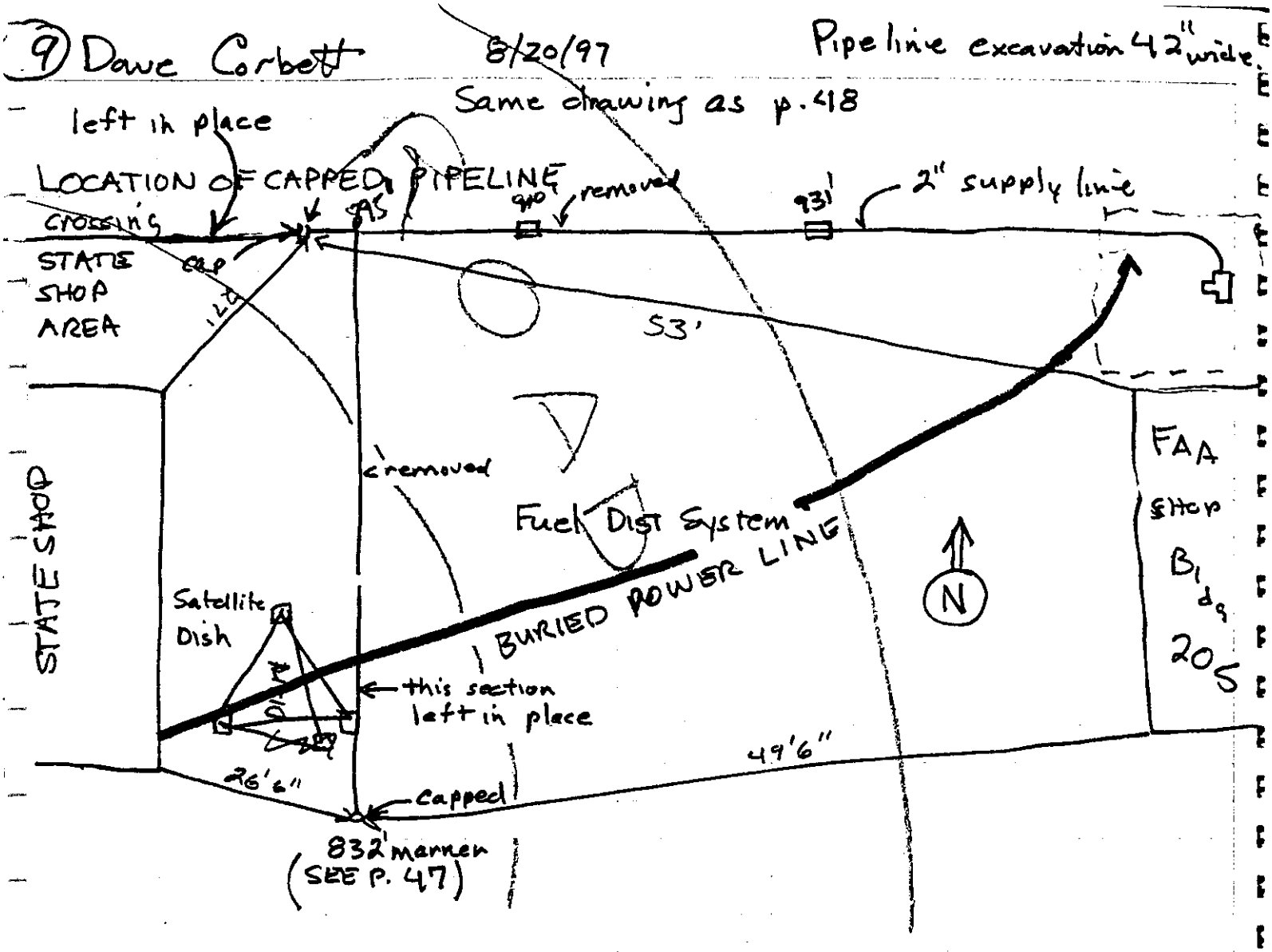
Mel excavating main 2" pipeline north side of satellite dish near STATE shop and east to Tank 15-B-002 @ Bldg 205 (tank removed 1030hrs) on 8-15-97.

1450 Bob/Dave take headspace samples on pipeline @ 874' & 895' markers. Bryan indicated that it's not necessary to excavate limits of Tank due to "hosed" condition of soil in this area.



(9) Dave Corbett 8/20/97 Pipeline excavation 42" wide.

Same drawing as p. 418



1540 Backhoe exhaust system broke... Mel/Rich doing maintenance also problems w/ power steering pump (seal leaking).

1600 Met w/ Bryan - suggested we dig test pits @ NDB site tomorrow - issue w/ property ownership - priority.
Tests include TOC, moisture content, gradation, ? grnd H_2O
Tomorrow will remove line between bldg 300 & bldg 207.
Bob sampled (confirmational) @ 3' bgs @ 895' marker on pipeline

1620 TAL97550910QP 3' bgs @ 895' marker on pipeline DRO/BTEX 87.22g
hand dug to 3' bgs (was excavated to pipeline) (pipeline 24" bgs).

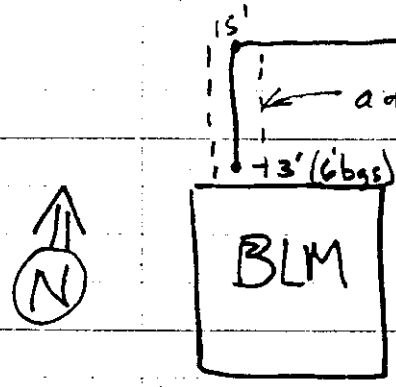
1635 TAL97550920QP 3' bgs @ 874' marker on pipeline DRO/BTEX 87.55g

1640 TAL97550930QP 3' bgs @ 910' marker on pipeline DRO/BTEX 87.26g

Backhoe power steering pump seal out - backhoe down 'till parts arrive. Mel will talk to Todd (in Fairbanks) tonight.

8/20/97 Dave Corbett (50)

1650 Mel (excavator) over excavating North of BLM Bldg. (see p. 22)



Headspace
3' North of BLM bldg @ 6' bgs = 58ppm.

All work performed in level D

1715 Rec'd Final WP, gave copy to Bryan, Bob.
Stopped excavating for the day
Bob charging instruments
OHM barricading work area.

1730 End of shift

1900 - review final
200 WP/EIC/IC
notes

Dave Corbett

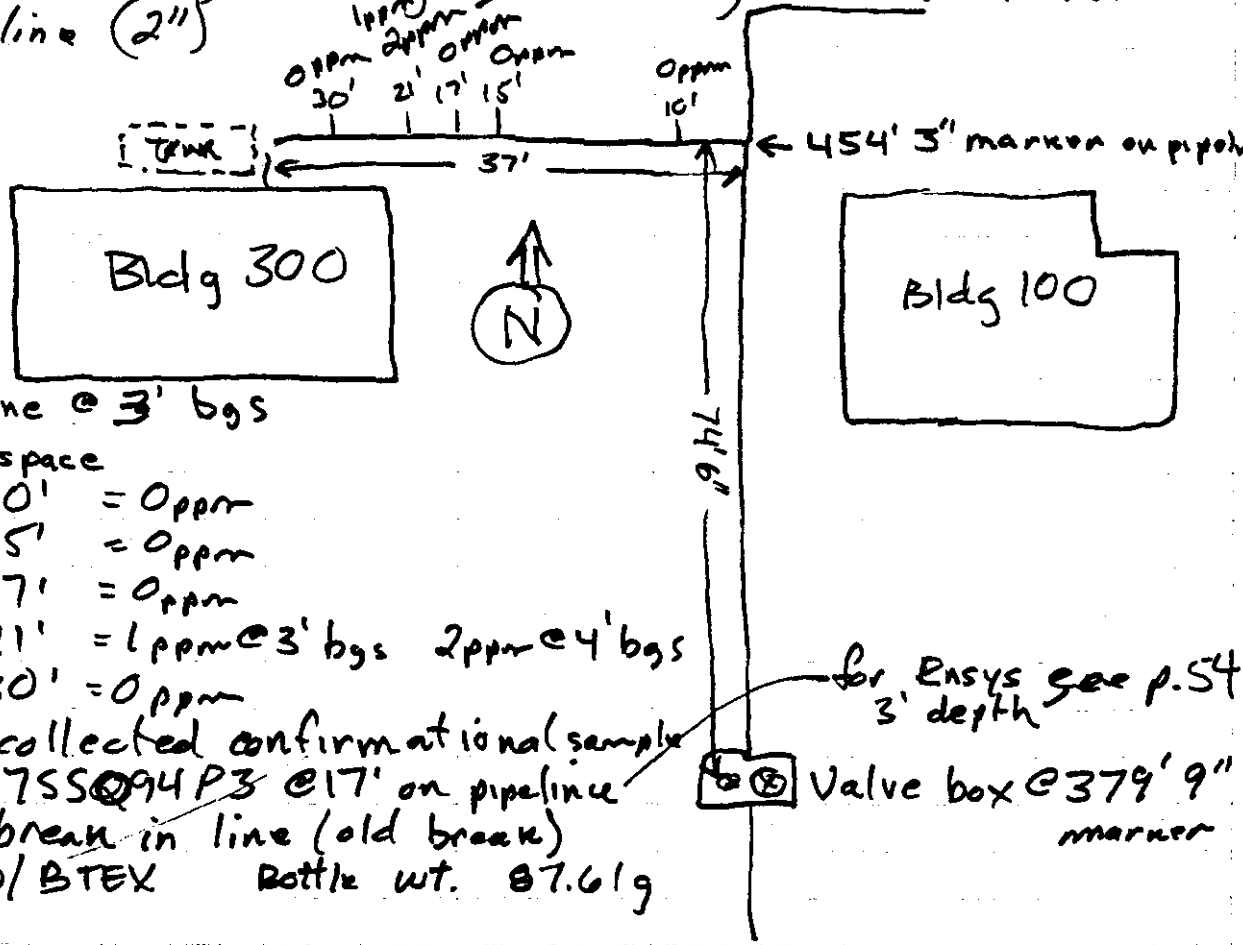
(51) Dave Corbett 8/21/97

0615 Breakfast - WTX - rain 50° F

0700 H&S mtg: OHM - Mel/Pete/Rich/Chris
Chem Hill - Bob/Dave
FAA rep - Bryan
Issues: - Walking around excavator
- General safety issues - trenches/entering trenches.
Discussed activities for the day:
1) out of acetylene - Pete/Chris will remove supply/return lines from residences
2) Mel will excavate line between Bldg. 300 & Bldg 600
3) Dave - Ensys

0720 Pete/Chris - removing supply/return line from each residence and tank site.

Mel (excavator) removing line running from fuel dist pipeline (2") ~~@ 3' bgs~~ @ 4' bgs



Pipeline @ 3' bgs
Headspace
10' = 0ppm
15' = 0ppm
17' = 0ppm
21' = 1ppm @ 3' bgs 2ppm @ 4' bgs
30' = 0ppm
Bob collected confirmational sample for Ensys 3' depth see p.54
0900 TAL9755Q94P3 @ 17' on pipeline @ break in line (old break)
DRO/BTEX Bottle wt. 87.61g

Pete/Chris removing supply/return lines

Mel moved to BLM bldg to continue excavation /Bob. Dave Corbett called Mike Orenetl - major item is limiting further excavation due to extensive contamination.

1000 Mel/Bob over excavating North of BLM Bldg.

Headspace samples @ BLM

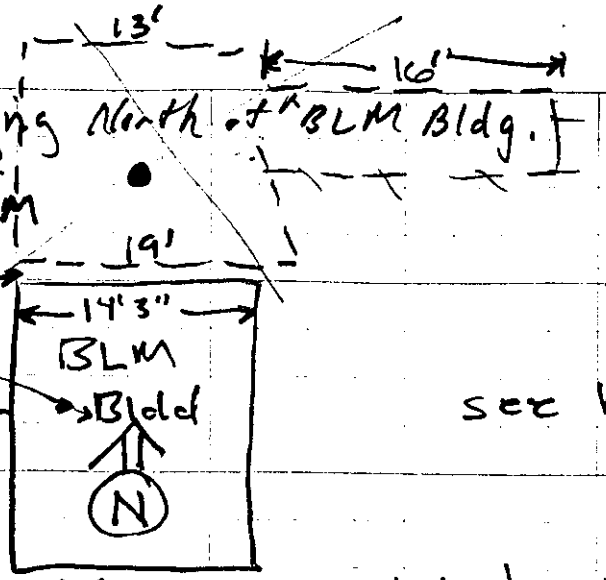
Depth = 8'

8' bgs center floor = 0ppm

6' bgs S. Wall = 42ppm

6' bgs E. Wall = 0ppm

6' bgs W. Wall = 2ppm



see below

Over excavated additional (see drawing below) in trench.

Bob collected Ensys samples @ BLM Bldg @ center floor, east wall, & west wall.

Ensys samples

8' bgs STD =

BLM bldg. Center Floor =

BLM 6' bgs East Wall =

6' bgs West Wall =

Bob collected confirmational sample

1010 TAL97550950211 8' bgs 10' N. of BLM Bldg. DRO/BTEX 87.64g.

Trench @ BLM Bldg

Trench headspace

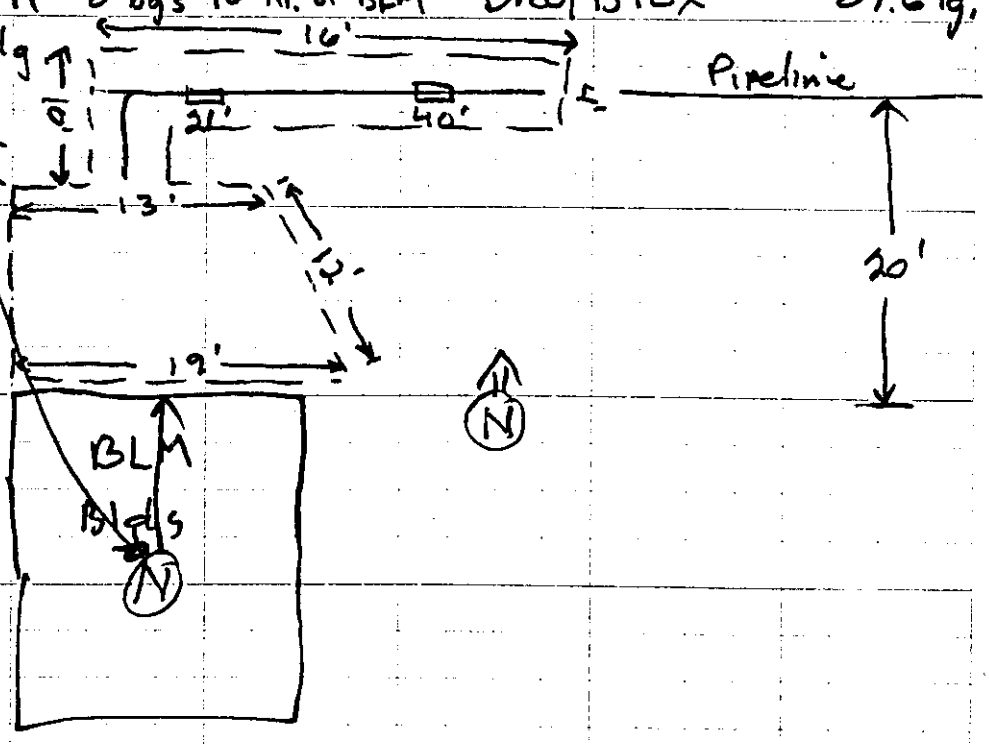
5½' bgs @ 21' marker = 0ppm

5½' bgs @ 40' marker = 15ppm

over excavate To 6-7' bgs @ 40' marker.

6.5' @ 40' marker = 0ppm

Collected Ensys in Trench @ 21' & 40'



1030 Finish over excavation @ BLM bldg and Trench (see above)

Mel/Bob move to 105 bldg to over excavate.

● Confirmational sample location

(53) Dave Corbett 8/21/97

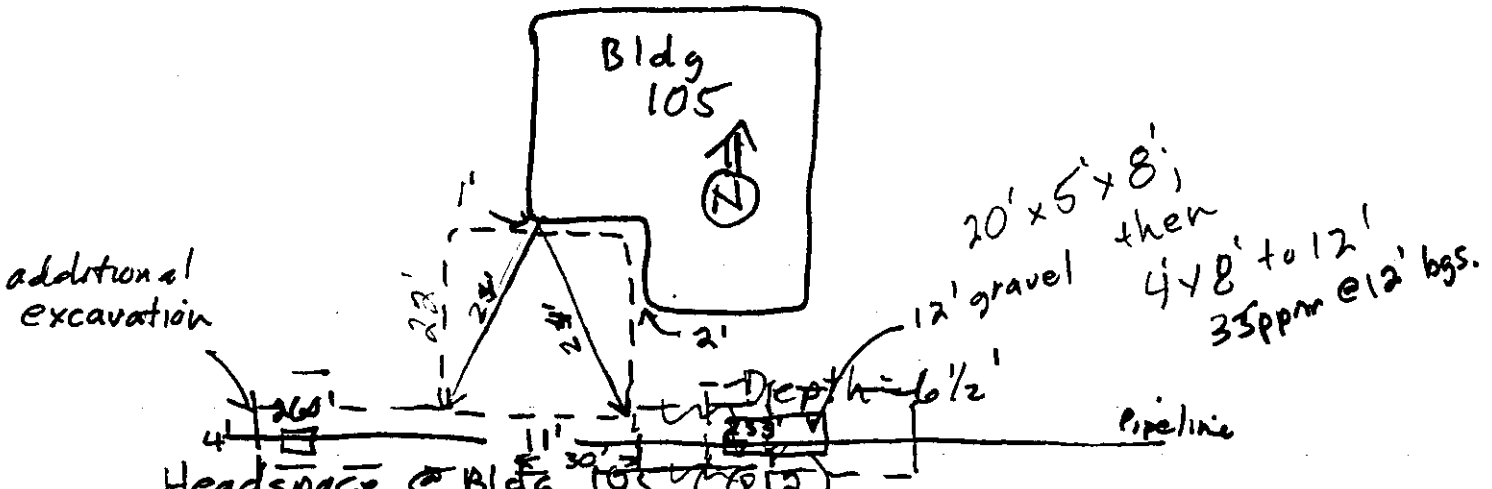
1145 Dave Ran Ensys on BLM Bldg excavation & Trench @ BLM Bldg.

Ensys

21' in pipeline trench	0.09
40' in pipeline trench	0.18
8' bgs Center-Floor	0.21
6' bgs East Wall	0.26
6' bgs West Wall	0.22
STD	= -0.11

See p. 52.

Bldg 105 overexcavation:



Headspace @ Bldg 105 (Q12)

E. Floor	= 0 ppm	@ 6'6" bgs
W. Floor	= 0 ppm	@ 6'6" bgs
N. Wall	= 0 ppm	@ 5' bgs
E Wall	= 0 ppm	@ 5' bgs
W. Wall	= 0 ppm	@ 5' bgs
S Wall	= 0 ppm	@ 5' bgs

Bldg 105 Samples:

1120	TAL97550960Q12	West Floor	DRO/BTEX ←	87.68g
1125	TAL97550970Q12	West Floor	Duplicate BTEX ←	87.30g
1126	TAL97550980Q12	East Floor	DRO	
1130	TAL97550990Q12	East Wall	DRO	
1135	TAL97551000Q12	West Wall	DRO	
1140	TAL97551010Q12	North Wall	DRO	
1145	TAL97551020Q12	South Wall	DRO ←	
1150	TAL97551030Q12	South Wall	DRO duplicate of	102Q12

1200 Lunch

1240 Head to work area

Met Bryan discuss pipeline to 105 & West along trench

1300 Mel (excavator) over excavating pipeline trench from Bldg. 105, west, to Tee to bldg 30, and trench to Bldg 30. (see below)

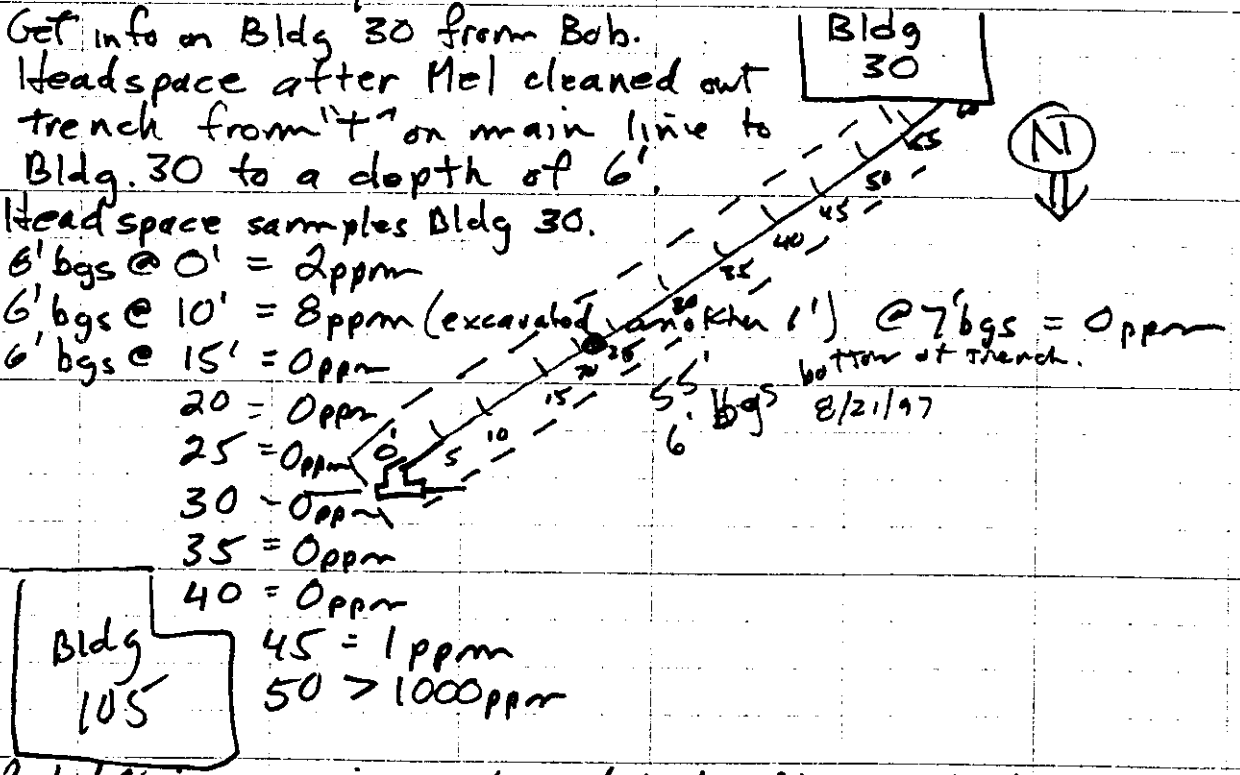
1330 Dave runs Ensys samples
Near Bldg 300 @ 17' on supply pipeline (0 @ Bldg 300 toward main pipeline
4 sample from excavation @ Bldg 105.

Ensys:

3' bgs @ 17' marker Bldg 300 (see p. 51)	=	0.18
Bldg 105 West Floor 6'6" bgs	=	0.23
Bldg 105 East Floor 6'6" bgs	=	0.51
Bldg 105 W. Wall 6' bgs	=	0.02
Bldg 105 E. Wall 6' bgs	=	0.31
STD. (Standard)	=	-0.01

1410 Finish Ensys

Get info on Bldg 30 from Bob.
Headspace after Mel cleaned out trench from "T" on main line to Bldg. 30 to a depth of 6'.
Headspace samples Bldg 30.
6' bgs @ 0' = 2ppm
6' bgs @ 10' = 8ppm (excavated another 1') @ 7' bgs = 0 ppm
6' bgs @ 15' = 0ppm
20 = 0ppm
25 = 0ppm
30 = 0ppm
35 = 0ppm
40 = 0ppm
45 = 1ppm
50 > 1000ppm



Pete/Chris covering contaminated stockpiles w/plastic tarp.
Ensys collected @ 21' in Bldg 30 trench
Confirmational Sample collected @ 21' in trench
1330 TAL97551041P12 6' bgs @ 21' marker DRO/BTEX 87.81g

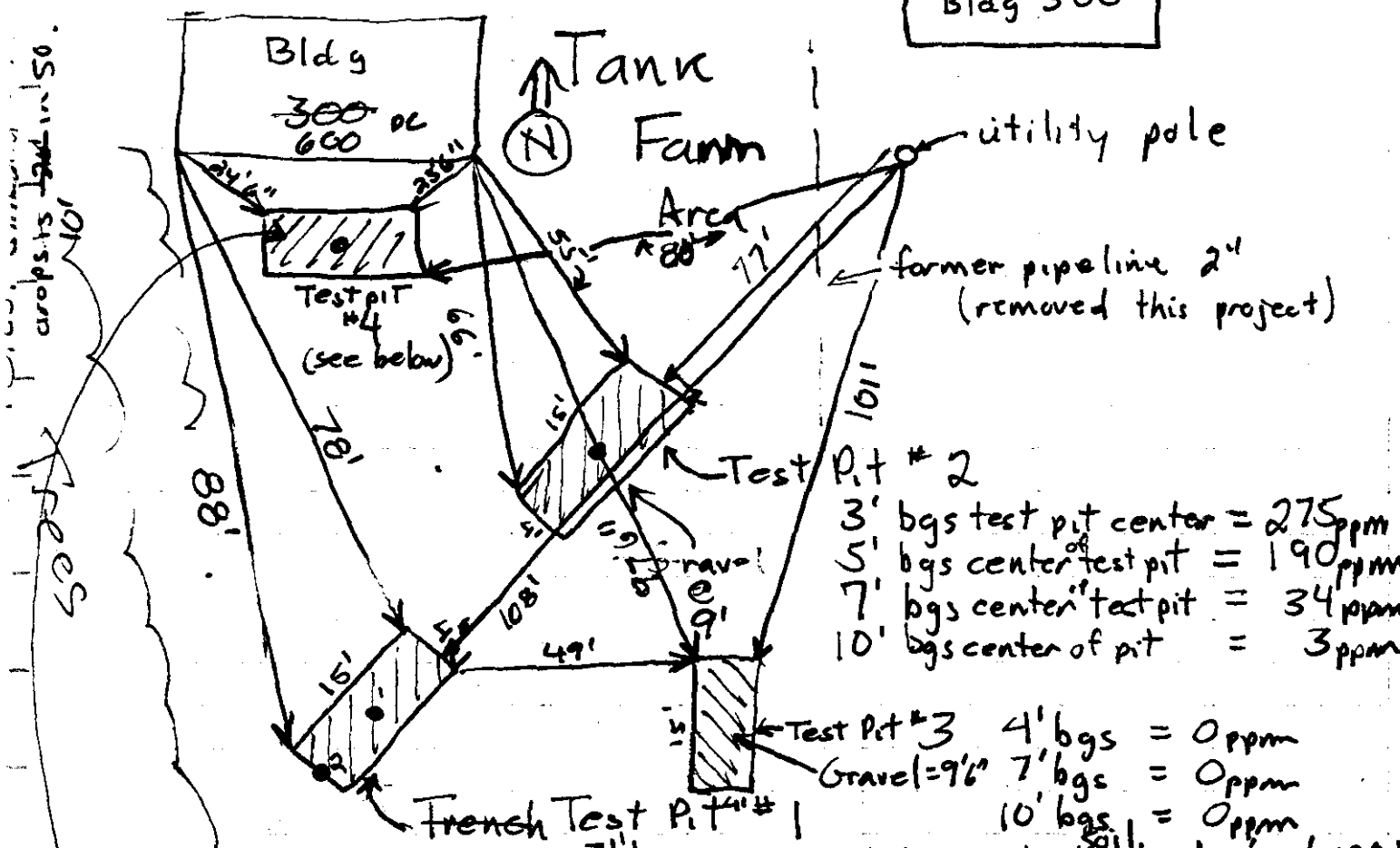
Mel moved to 233' mark and excavated to 12' (no change in width)
10'6" bgs @ 233' = 13ppm 12' bgs @ 233' marker = 35 ppm.
Bryan decided to stop excavation - hole big enough.

• - confirmational sample location.

(55) Dave Corbett 8/21/97

1130 Mel (excavator) moved to Valve box area (380' marker on pipeline) to remove pipe left in place near power line (@ 393' marker) headspace @ 393' = 334 ppm.
headspace @ 398 = 2 ppm.
No further excavation because this area will be remediated along w/ Valve box.

1600 Mel moved to Tank Farm area to dig test pits.



Test Pit #2
3' bgs test pit center = 275 ppm
5' bgs center of test pit = 190 ppm
7' bgs center of test pit = 34 ppm
10' bgs center of pit = 3 ppm.

Test Pit #3 4' bgs = 0 ppm
7' bgs = 0 ppm
10' bgs = 0 ppm

Trench Test Pit #1
3' bgs center of test pit ~~soil~~ stained = 198 ppm
5' bgs center of test pit = 0 ppm
1½' bgs SW wall test pit = 392 ppm
Soil

Strong odor in first few bucketfuls.

Test Pit #3 backfilled w/ clean soil from same excavation

1700 Test Pit #4
4' bgs = 633 ppm
6' bgs = 375 ppm
10' bgs = 251 ppm

At test pit 4', the 1st 4' was fill material (original surface slopes down to the west toward relatively steep embankment drops 15' ~~20'~~ in ~~+~~ 50'.

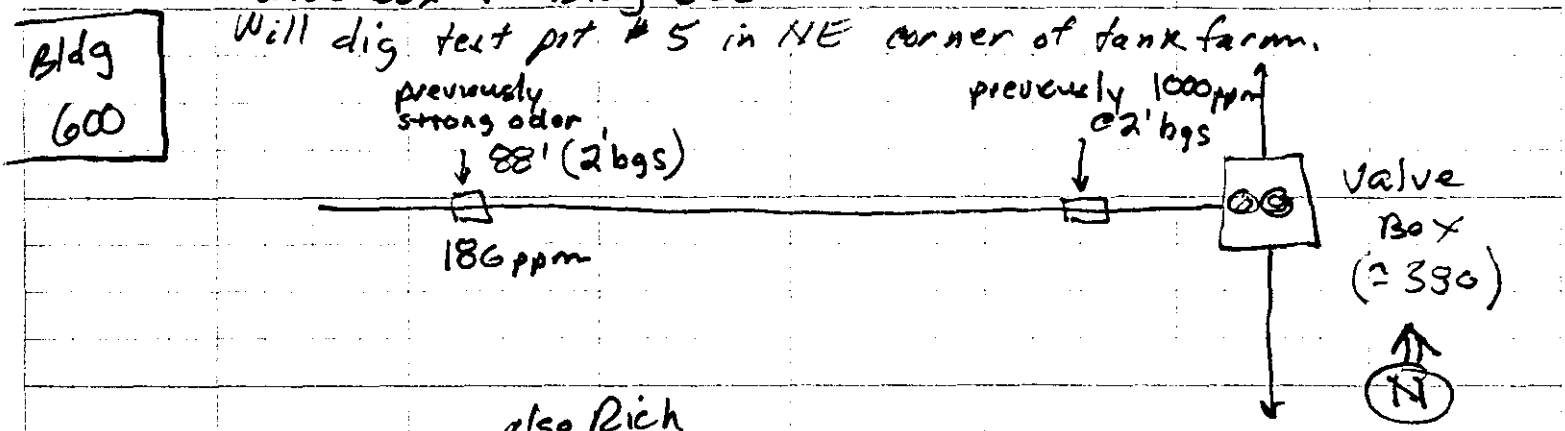
Mel covered Test Pit #2 w/ steel plate from Tank 15-B-014
All work performed in Level D.
Bob charged instruments
OHM secured compound w/ caution tape. 15-B-01

1800 - end of shift
1900 - Met w/ Bryan to discuss schedule/tomorrows activities Spill Report. 15-B-003

Friday 8/22/97 Dave Corbett

0615 - Breakfast - WTX: Partly cloudy Temp 45-55°F
0700 - H&S Safety Mtg. - backhoe safety, trenches, torches.
0715 OHM inventory of supplies that arrived last evening. (Mel) after
Chris/Pete cutting on Tank 15-B-014, also 500gal tanks. by
Bryan wants another test pit in tank farm area - east Bob.
of test pit #4 - closer to pipeline (which was excated
excavated only 2'bgs.

0800 Bryan talked w/ Jim Swalling about sampling ASTs (ie T-15-B-009, T-15-B-010
only 1 sample @ 1' bgs - use samples more effectively @
test pits. Take confirmational @ line running west from
Value Box to Bldg 600
Will dig test pit #5 in NE corner of tank farm.



0915 Chris/Pete also Rich cutting tanks./Bob taking pictures
Chris/Rich/Pete setting up to clean out 500gal tanks.
0930 OHM brings 55gal drums to tank farm area for cleaning
500gal tanks.

Bob taking LELs of 500gal tanks.
0945 Mel pressure washing 500gal tanks

DC
1105 ~~1100~~ a ~~TALSSI~~ TAL97SS105P13 3'bgs @ 88' manner on Bldg 600 supply line DRO/GRO 87.68g
1100 TAL97SS106P13 3'bgs @ 11' manner on Bldg 600 supply line DRO/GRO 87.77g

LELs on tanks: Tank Farm Area.

15-B-~~014~~-018	LEL 000% O_2 20.8%	Note: Initial LEL
✓ 15-B-017	LEL 000%; O_2 20.8%	taken in cool 50°
✓ 15-B-004	LEL 000%; O_2 20.8%	early morning
✓ 15-B-006	LEL 000%; O_2 20.9%	
✓ 15-B-007	LEL 000%; O_2 20.8%	Will recheck
✓ 15-B-013	LEL 000%; O_2 20.9%	before cutting

57 Dave Corbett 8/22/97

✓ 15-B-005 LEL = 000%; O_2 = 20.9%
✓ 15-B-019 LEL = 000%; O_2 = 20.9%
✓ 15-B-002 LEL = 000%; O_2 = 20.9%
✓ 15-B-003
✓ 15-B-008

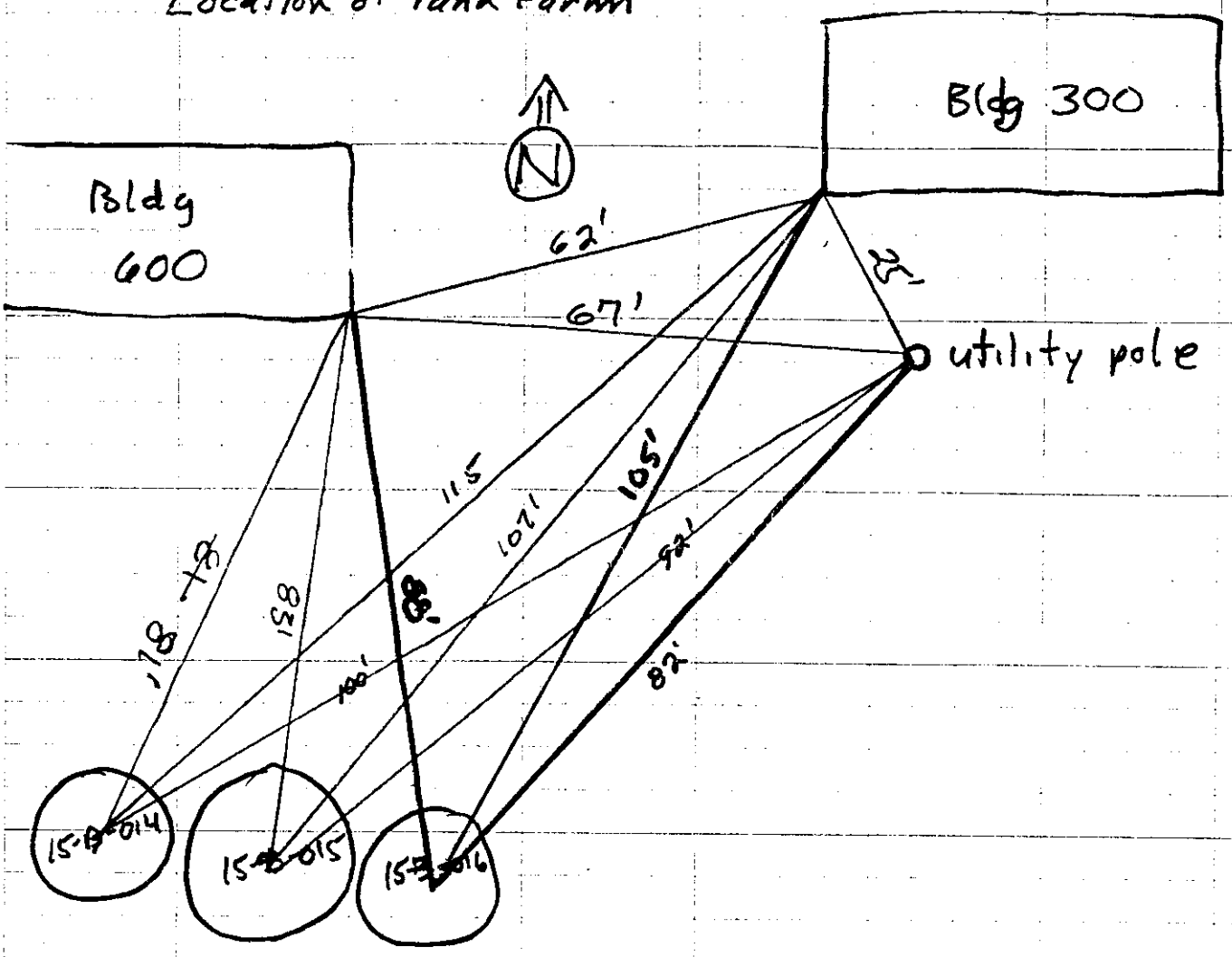
1000 Todd returns to site.
Mel to get H_2O for cleaning tanks.
Blow out on other pick up -
Bob/Dave prepare Shop paint chips sample
0840 TAL97 PC107S Paint chips from Bldg 205 roof Pb paint
↖ Time collected

Tank 15-B-014 Paint Sample
0820 TAL97ST108T Steel w/paint Tank 15-B-014 Pb(EPA 7421) paint
0835 TAL97ST109T Steel w/paint Tank 15-B-015 Pb(EPA 7421) paint.
0825 TAL97ST110T Steel w/paint Tank 15-B-016 Pb(EPA 7421) paint.

1100 Bob getting LEL on Tank 15-B-003
Tank 15-B-008
Tank 15-B-011
Rich/Mel maintenance (replace pwr steering seal) on backhoe

1125 Pete/Chris prepare to cut T-15-B-017
1130 Bob photographs 15-B-017
Bob rechecks LEL on 15-B-017 due to Temp increase (60°F)
1135 Chris/Pete begin cutting T-15-B-017
Todd/Mel checking equipment stored @ airport.
Bob/Dave photograph tanks / get ice for samples
1200 Lunch
1330 Mel moving cut up tank parts to scrap pile.
Bob takes LEL of 15-B-004 LEL=0; O_2 = 20.9%
Dave to FSS to check activities @ tank 15-C-001

Location of Tank Farm



Measurements to Center of Tank

Chris/Pete - cutting tanks @ tank farm - Bob, LELs, photos
Todd/Mel - pumping tank @ FSS
Rich backfilling & line between BLM → FAA shop
1330 Met w/Bryan - he suggested field screening underneath T# 15-B-014, 15-B-015, 15-B-016.

Fax - unsuccessful will try again later
- spill reports for 15-B-001 and 15-B-003

1430 Call to Mike -
1) Update current status - all tanks/pipe in Quarters area removed - backfilling/cutting/tanks/pumping @ FSS.
2) Sampling under ASTs - OK also field screening
3) discussed Test pits in Tank farm ± slope on west side of TF.

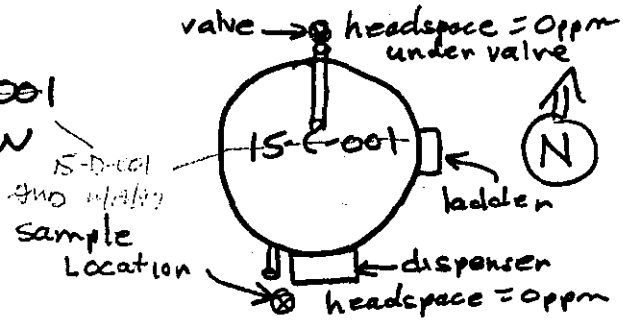
59 Dave Corbett 8/22/97

Bob/Dave - prepare to collect soil sample from 8K gas tank @ Airport Rd. Tank ~~#15-C-001~~ 15-D-001 and 11/19/97 for rapid turnaround for Pb in soil. EPA 7421

1500 TAL97SS111 8K Tank ~~15-C-001~~ 15-D-001 and 11/19/97 GRO/BTEX/Pb EPA 7421
- sample taken in ~~stained~~ stressed vegetation area in front (Rd side) of tank
- expedited to Anthony Renino via Dale Ericrson
- collected 3 location (No visible staining)

Met w/ Todd re King Cab trucks for FAA Big Shots. 10am - 1pm 8/22/97.
Met w/ Bryan re sampling under ASTs - Mike OK'd.

Tank ~~15-C-001~~
Top View



see Photo log

— ROAD —

1530 Chris/Pete cutting tanks / Bob photographing tanks.
Cutting tank in half.
Rich backfilling @ pipeline trenches.

Bob diggings (post hole) to 2'-3' @ center of Tank 15-B-014
Tank 15-B-015
Tank 15-B-016

1605 Mel installing temporary fuel supply @ FSS.
Todd/Mel @ FSS

8/22/97 Dave Corbett (60)

1625- Called Mike Drewett -
1) No pad (gravel) @ FSS required
2) ADEC - Eileen Olsen (ADEC) gave approval for soil excavated from test pits to be placed in hole where excavated - Bryan/Mike agree.

1635 - OHM begins cut up of tank

1700- Mel moving scrap tank parts to scrap stockpile 15-B-005

1720- OHM - Rich backfilling trenches - Chris (securing site) - Todd/Mel working on temporary fuel supply @ FSS. Bryan out to FSS.
Bob charging nst. -
-working late -slightly - 1800/1830
-Pete assisting Chris

1730 Dale's truck (for storage) contains 4 diesel tanks/1 gas.

1800 - Met w/ Bryan - to discuss tomorrow's activities

2000 get info from pipeline notes to Bryan

2200 end of shift

-(6) 8/23/97 Dave Corbett

0615 - Breakfast - WTX - Partly sunny Low 45°F - high 60°
- H&S mtg - see Bobs notebook Dave/Bob/Mel/Pete/Chris/Rich/Bryan
0700 - Chris/Pete cutting tanks / Bob photographing (no Todd)
0715 Mel/Rich get H_2O
0730 Bob collects 8' bgs DRO/BTEX @ 15-B-014, 15-B-015, 15-B-016
0745 TAL 97 ST 112 16 Center of tank 2' bgs DRO/BTEX 87.57g
0750 TAL 97 ST 113 15 Center of Tank 2' bgs DRO/BTEX 87.33g
0755 TAL 97 ST 114 14 Center of tank 2' bgs DRO/BTEX 87.69g

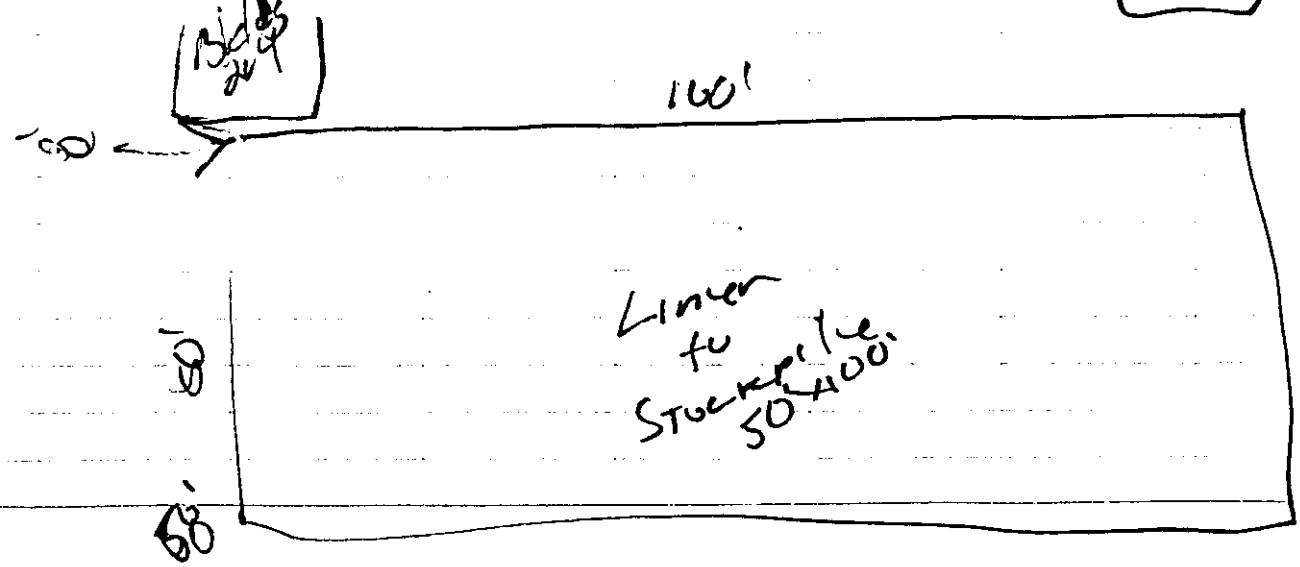
0800 Chris/Pete cutting tanks.
Todd on phone
Rich/Mel

0805 Bob collected confirmational samples from Tanks 15-B-014
↓ 15-B-015 - 15-B-016 approx. 2' bgs @ center of tanks
0845 Headspace @ 15-B-014 = 2' bgs = 0 ppm.
@ 15-B-015 = 2' bgs = 77 ppm
@ 15-B-016 = 2' bgs = 1 ppm

Confirmational samples @ 15-B-014, 15-B-015, 15-B-016.
0850 - Gravel load from City of Tanana - arrived - dumped
(for storage @ Bldg 206 for pad.).

0915 Pete/Chris cleaning/cutting tanks
Mel/Rich coordinating gravel pad construction @ VORTAC.
Bob/Dave calibrating LGR

1000 Bryan/Dave/Mel - setting up property corners for liner on Stockpile area @ Bldg 204

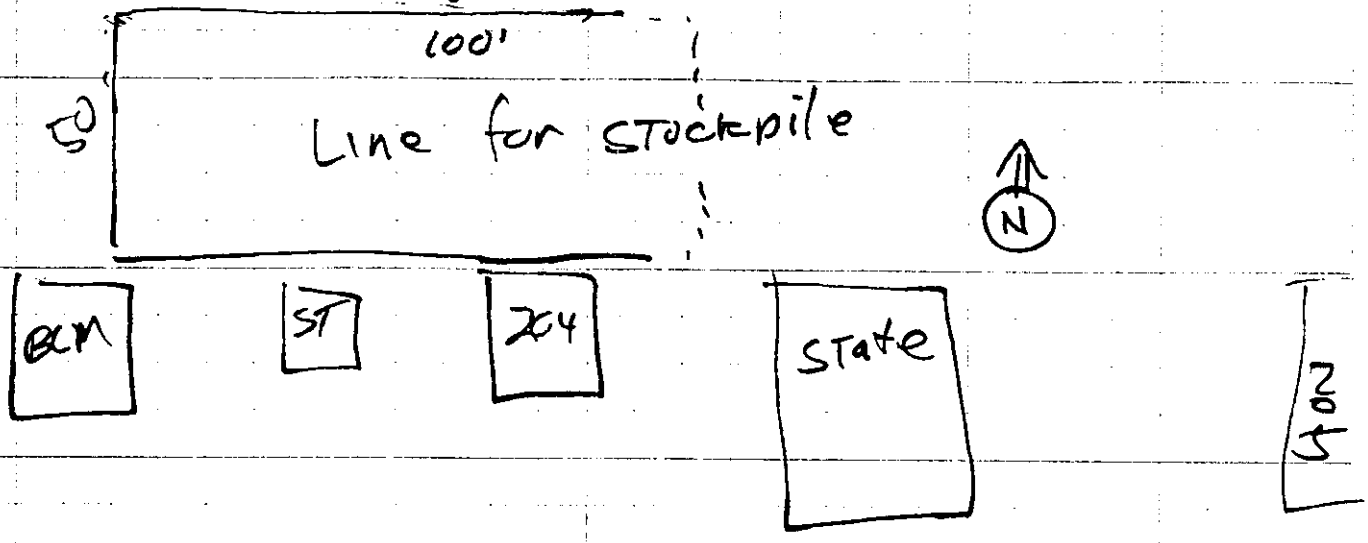


8/23/97 Dave Corbett

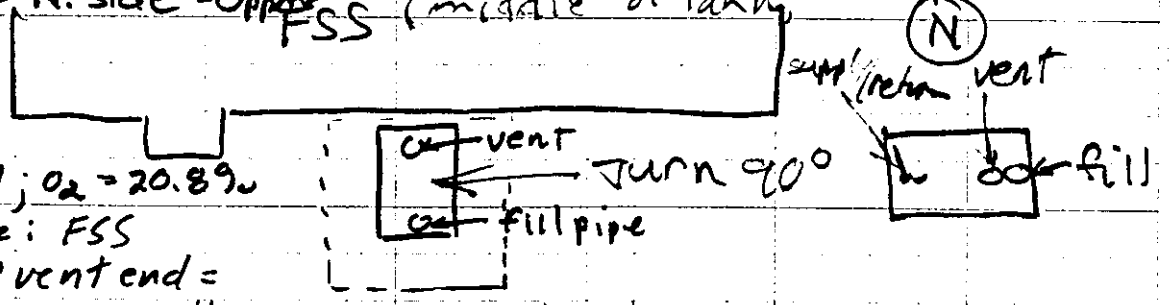
1045 - Pete/Chris cutting T 15-B-003
Bob/photographs T-15-B-003

1100 - FSS

1105 - Rich spreading liner N. of bldg 204



1300 - Mel (excavator) @ FSS exposing tank 15-C-001 @ FSS.
Chris/Pete cutting tanks @ tank Farm.
Exposed tank 15-C-001: 2.5' to top of tank.
Headspace samples.
2'6" fullend top of tank = 557 ppm. Vent 67 ppm @ 2'6" bgs
4' bgs @ N. side = 0 ppm FSS (middle of Tank)



LEL 007; O_2 = 20.8%

1330 Headspace: FSS
2' bgs @ vent end =
Headspace @ FSS 4' bgs = 0 ppm North End
" @ FSS 6.5' bgs = 717 ppm East Side
11/19/97

1400 - Called Mike Drewett - 907-694-0483

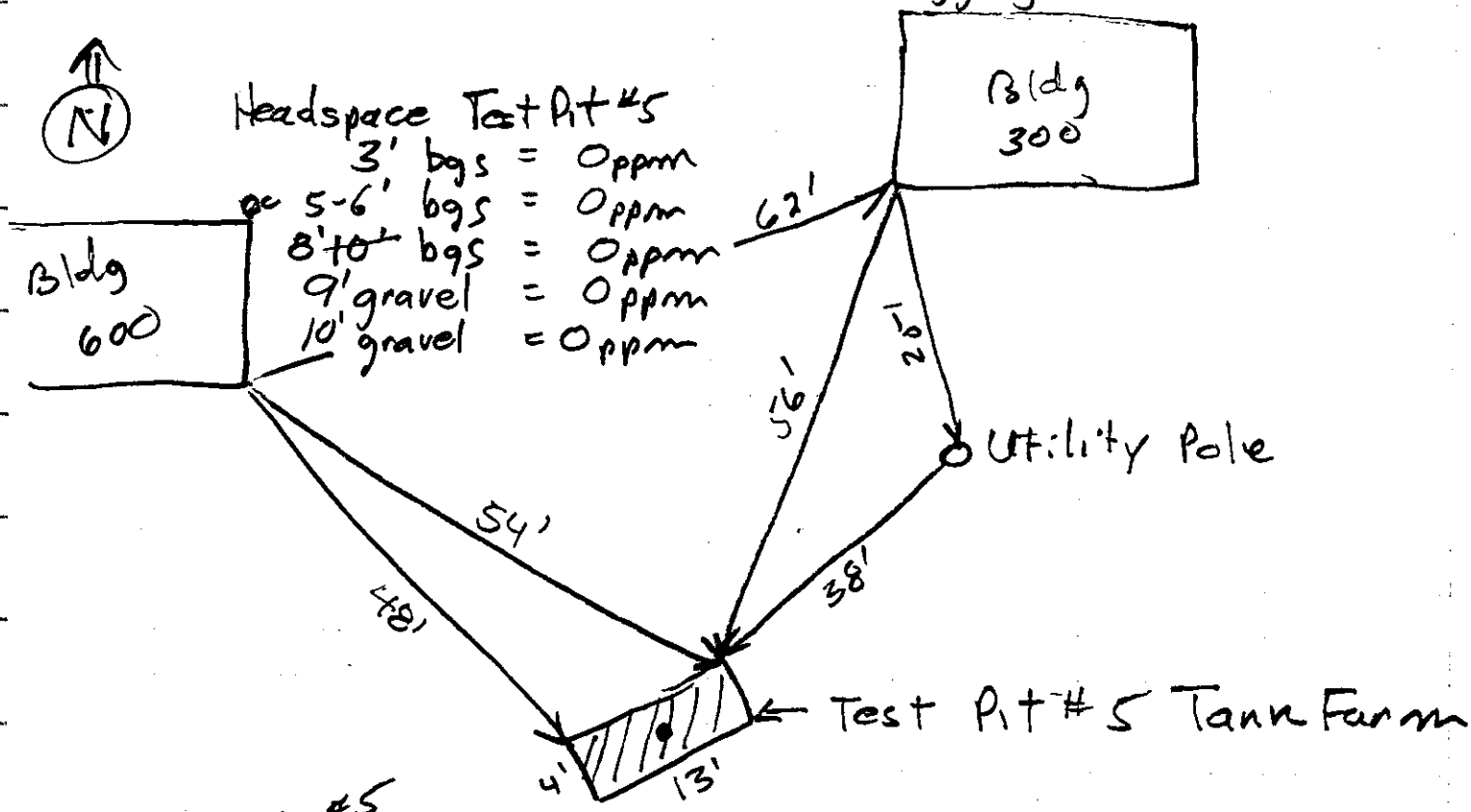
Waiting for fill before over excavating/backfilling

1430 Secured area around tank w/ barricade fencing.
1445 Rich goes to FSS to bring ~~15-B-00~~ 15-C-001 to tank farm.
1500 Rich w/ 15-C-001 @ Tank Farm

(63) Dave Corbett 8/23/97 recheck LEL in tanks sitting in sun.

1505 Chris/Pete cutting tanks. LEL in 15-B-011 = LEL 0002
O_2 = 20.8

1530 Test Pit #5 in Tank Farm - digging



Test pit #5 backfilled w/ material excavated per Bryans' approval from ADEC (Tank Farm area only).

1600 Mel backfilling Test Pit #4
Rich moving contaminated soil & stockpile N. of Bldg 204.

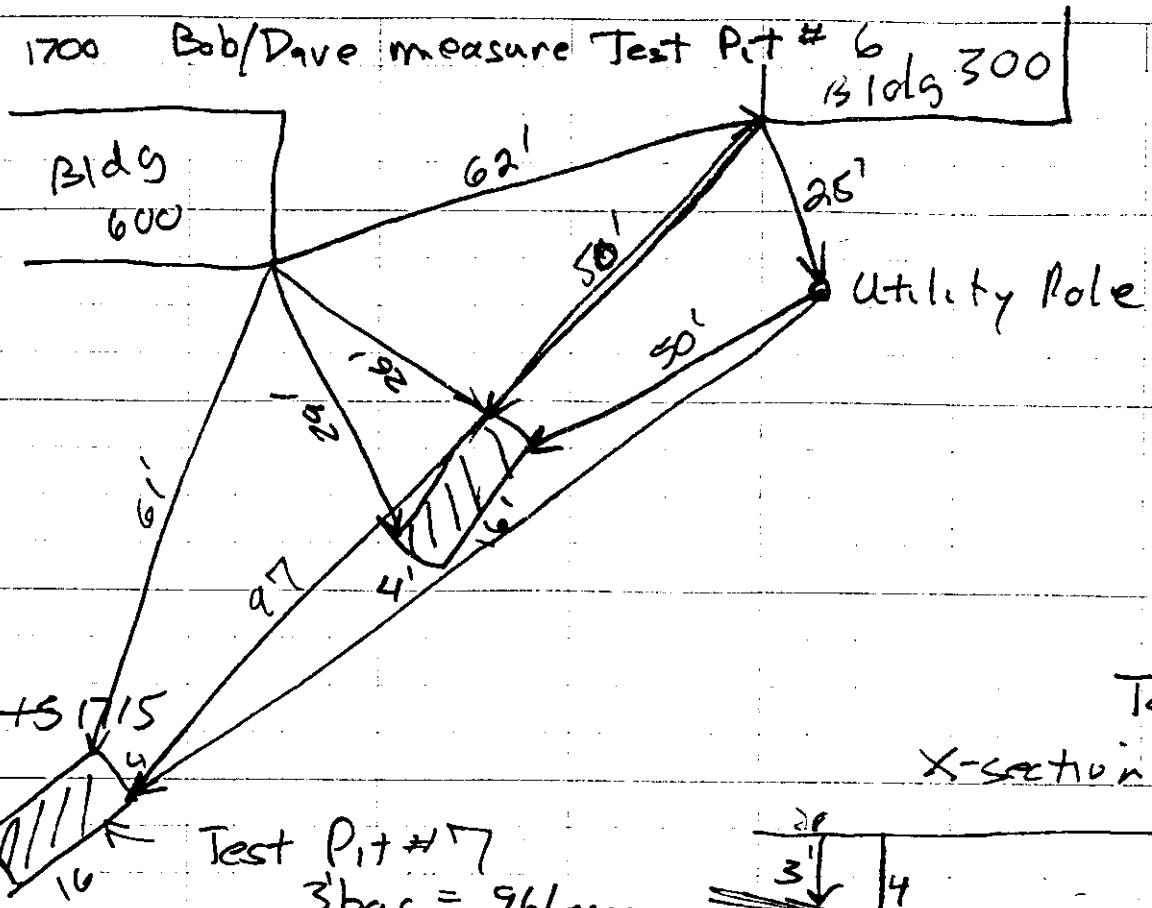
1615 Bob/Pete collect paint samples from telephone poles North of shop. (Painted Red & White, Pb sample.

Need fill for 105, Greenhouse, FAA shop

1630 Mel backfilling all test pits in tank farm area.

1645 Test Pit #6 excavated
Headspace: 3' bgs = 40 ppm
6' bgs = 634 ppm
10' bgs = 755 ppm

1700 Bob/Dave measure Test Pit # 6

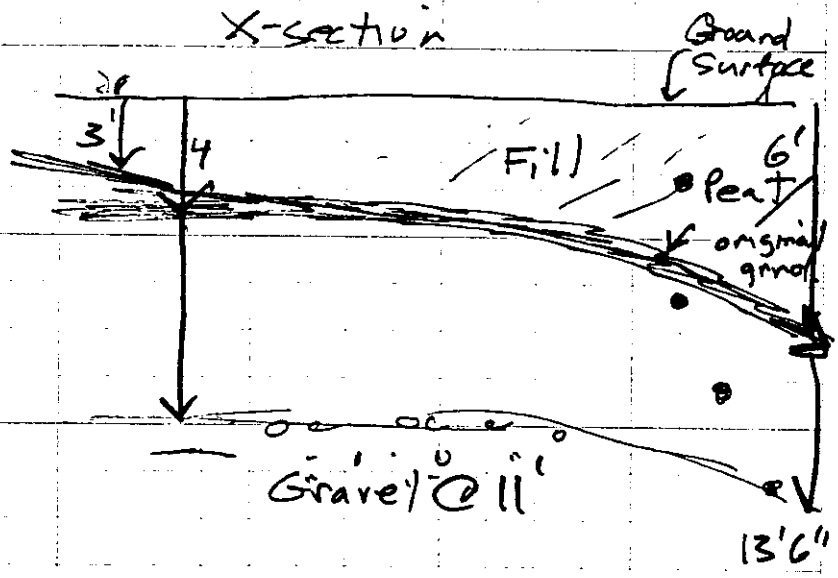


Test Pit #7

3' bgs = 961 ppm
6' bgs = 60 ppm
10' bgs = 75 ppm
13'6" bgs = 6 ppm

Test Pit #7

X-section

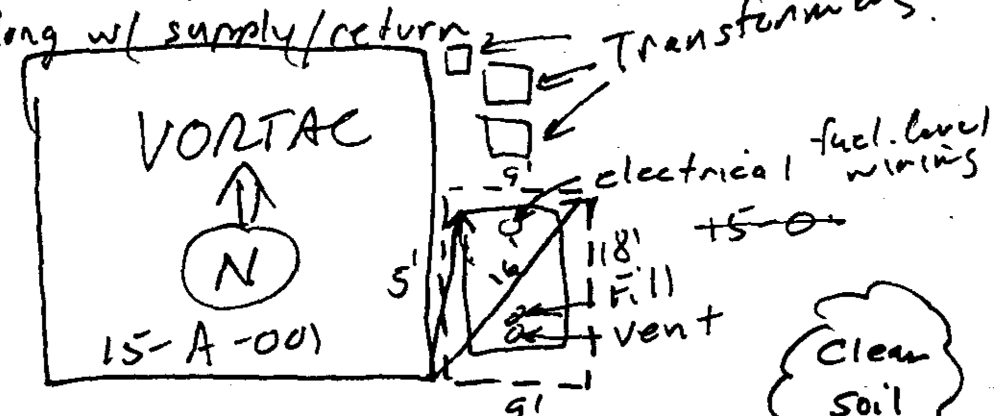


1730 Mel backfilling
1800 Dave measures
met w/ Bryan
1900 end of shift

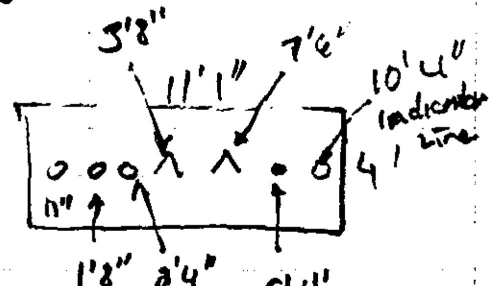
03 .MM 8/24/97

0615 - Breakfast - WTX: Low 40° high 56°
- 0835 Mtg - backhoe safety; pumping tank @ VORTAC issues
  OHM - Todd / Mel / Rich / Chris / Pete
  CH2MHILL - Dave / Bob
  FAA Rep - Bryan
- Rich backfilling
- Rich / Mel (excavator / backhoe up to VORTAC
Bob take Headspace @ VOR; LEL =
  6" bgs @ VORTAC = 0ppm Fill end
  6" bgs @ VORTAC = 0ppm Vent end
  3rd line along w/ supply/return

Length = 18'
Width = 9'
Depth = 5'



Fill & Vent on South end of tank 15-A-001
Mel / Chris / Pete - set up temporary fuel @ VORTAC
0900 - Trouble starting compressor to pump tank. (2nd contaminated soil)
Bob gets jumper cables.
- Mel in crawl space removing supply return line, + 3rd line.
- no air pump on compressor - broke down compressor
LEL 15-A-001 = 4% LEL; O_2 = 20.8
1000 Tried to fix compressor
1100 Used small trash pump/portable generator to remove fuel from tank 15-A-001 - put into 1000 gal temp. storage
1145 Finished fuel tranfer
1200 Lunch
1230 Excavating 15-A-001 @ VORTAC
Bob taking headspace samples.
  2' bgs east side of tank = 0ppm
  3.5' bgs fill (east side = 0ppm
  4' bgs middle of tank = 0ppm
  1.5' bgs southend (fill) = >1000ppm
  3' bgs south end (fill) = 0ppm
  5' bgs below tank 15-A-001 = 0ppm



1½" vent
2" fill
2" indicator line

Dave Corbett 8/24/97 (66)

Headspace @ VORTAC 15-A-001

1340 South Floor = 0ppm 5' bgs
North Floor = 0ppm 5' bgs
South Wall = 0ppm 4' bgs
Middle Floor = 0ppm 5' bgs
North Wall = 0ppm 4' bgs
East Wall = 0ppm 4' bgs
West Wall = 0ppm 4' bgs

Tank loaded on OHM pickup for transport to Tanner Farm.

Ensys sample STD = -0.12
South Floor = 0.14

Pete/Chris collecting/picking up lead paint chips @ Bldg 205.

1400 Confirmational Samples: VORTAC 15-A-001

1400	TAL 9755115V	South Floor	DRO/BTEX/GRO/Pb	87.78g
1401	TAL 9755116V	Mid North Floor	"	87.60g
1402	TAL 9755117V	~~North~~ North Wall	"	87.58g
1403	TAL 9755118V	S wall	"	87.71g
1404	TAL 9755119V	E Wall	"	87.69g
1405	TAL 9755120V	W wall	"	87.55g
1406	TAL 9755121V	South Floor (duplicate)	"	87.87g

→ duplicate of south Floor.

1500 OHM brought saunatubes for bollards.

Met w/ Todd/Bryan - discuss location of AST @ VORTAC.

OHM setting up Flex hose for lines - partially backfilled excavation @ VORTAC

1600 Chris picking up Pb paint chips from area around Bldg 205.

1700 OHM working on install @ VORTAC

1800 end of shift

(67) Dave Corbett 8/25/97 Monday

0615 Breakfast - WOX overcast low 38 - high 56° F.

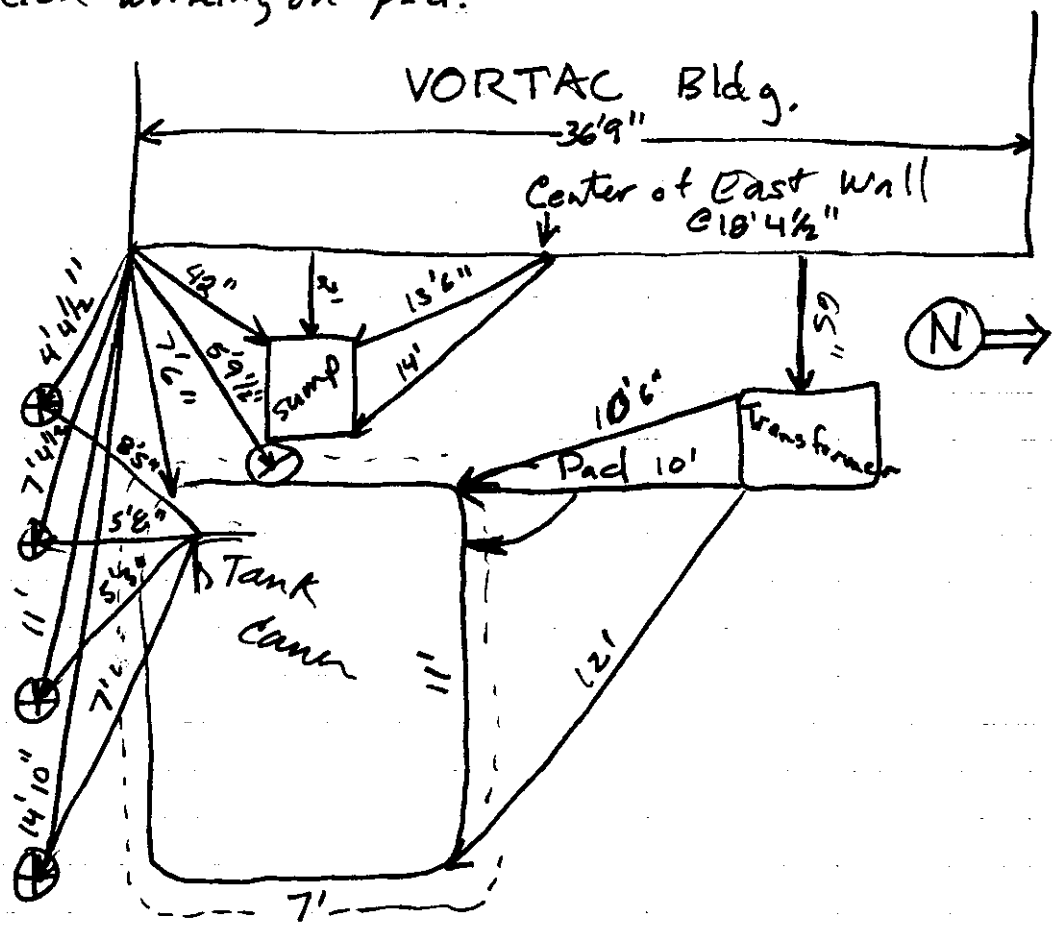
0700 H&S Mtg. - Bob/Dave/Todd/Mel/Rich/Pete/Chris/Bryan
LEL = O_2 =
Pete/Chris cutting tank 15-A-001
Bob called Anthony Penino
- followup on Bentonite

0815 TAL97IS122Q30 Bldg 30 interior paint P6

0830 Todd/Mel backfilling around bollard tubes/old tank and compacting w/ ~~Mikasa~~ compactor, Mikasa MVC-77 5800vpm

0900 Mel constructing pad 6"h x 10' x 7'.

0930 Mel/Rich working on pad.



0950 Todd/Mel bring out NEW 500gal Tank - place on pad.

1000 Bob (w/ post hole digger) taking headspaces on 5' grid west of Bldg 205 18" deep done 11/20/97

Chris ~~Pete~~ Placing Pipe back onto pipe rack - moved to eastside 205 Bldg

1015 Mel excavates last bollard

Monday 8/25/97 Dave Corbett (68)

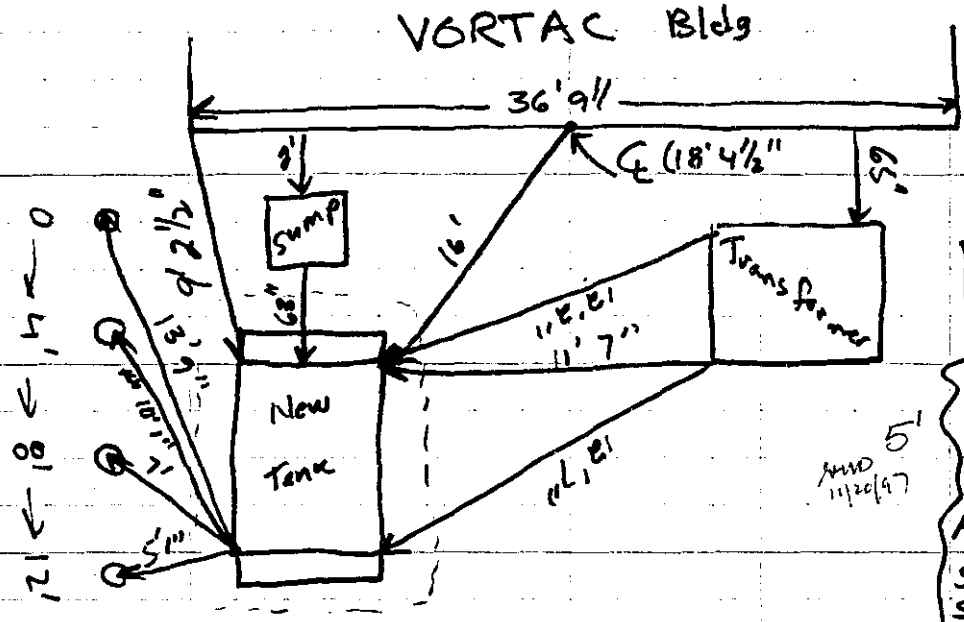
1100 Pouring concrete around fuel Line support post. 16" tube
8' post - buried 4'.

1130 Pouring concrete on bollards. 4' centers / 5' from tank.

1200 Lunch

1240 Bob excavating @ Bldg 205 - based on Posthole OVM (18" depth).

1300 Pouring remainder of bollard concrete.

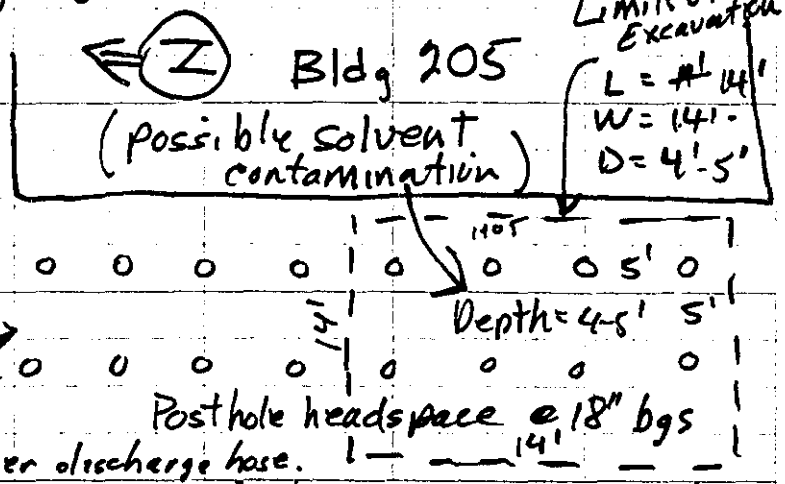


Headspace @ Bldg 205
4' bgs:
N. Floor = 359 ppm
Mid Floor = 450 ppm
S. Floor = 280 ppm
S. Wall = 204 ppm
N. Wall = 397 ppm
W. Wall = 310 ppm

1400 - Mel/Pete preparing New VORTAC tank for pressure test.

Headspace samples @ Bldg 205

2.5' bgs
S. Floor = 311 ppm
M. Floor = 690 ppm
N. Floor = 356 ppm
N. Wall = 499 ppm
S. Wall = 371 ppm
E. Wall = 14 ppm
W. Wall = 408 ppm



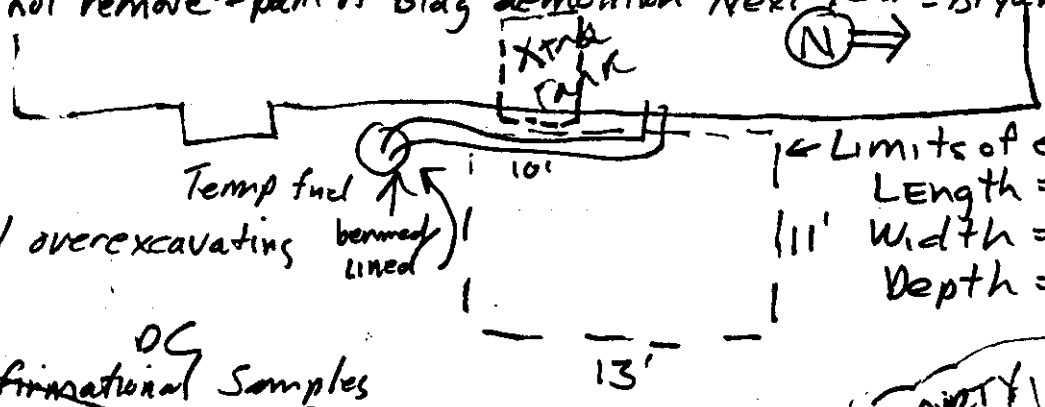
1430 Bryan - "RI @ 205."
55 gal drum (on-side) under discharge hose.

1500 Bob / Dave / Rich Bldg 600 west side - need excavator.
2' bgs @ 2' W. of Wall = 5 ppm
4' bgs @ 2' W. of Wall = 1 ppm
Move 2' West: 2' bgs = 0 ppm
4' bgs = 27 ppm
STOPPED wait for excavator.

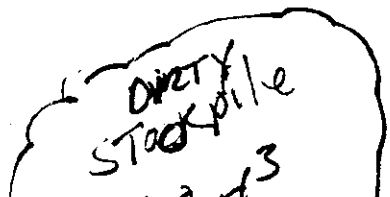
30 yd3 contam from Bldg 205

(69) Dave Corbett 8/25/97

1545 Mel brought excavator to FSS - overexcavating
Found another 500gal tanne SW corner of excavation
Under Bldg. (End flush w/ bldg.(5' bgs E-W)
Will not remove - pantex Bldg demolition next year - Bryan.



OC
~~Confirmational~~ Samples
TAL97SS123F FSS N. Floor
S. Floor



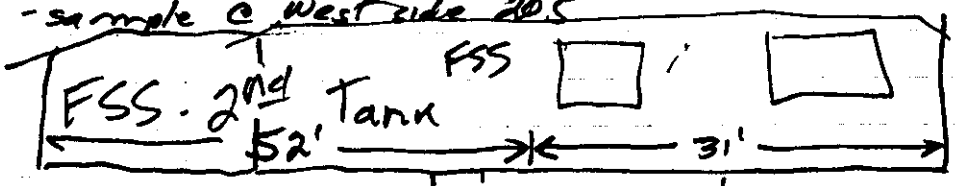
.615 Bob collected 2 ENSYS samples.
Headspace Samples @ FSS. 8' bgs Mid SF = [illegible]ppm 8' E. Wall = 26ppm
8' bgs NW Floor = 6ppm 12' bgs NE Floor = 0ppm 8' N Wall = 0ppm
8' bgs NE Floor = 13ppm 8' bgs SW = >1000 E Wall 8' bgs = 26ppm
W. Wall 8' bgs = 93ppm

Confirmational Samples @ FSS

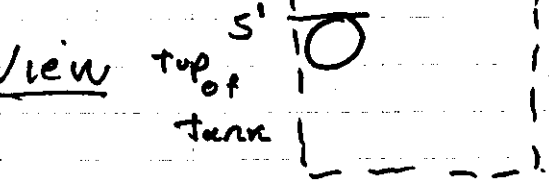
1700	TAL97SS123F	FSS	South Floor	DRO/BTEX	87.63g
1701	TAL97SS124F	FSS	North Floor	DRO/BTEX	87.89g
1702	TAL97SS125F	FSS	N-South Wall	DRO/BTEX	87.76g
1703	TAL97SS126F	FSS	N. Wall	DRO	
1704	TAL97SS127F	FSS	E. Wall	DRO	
1705	TAL97SS128F	FSS	W. Wall	DRO	

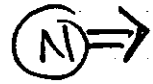
1715 Mel backfilling @ FSS.
Met w/ Bryan / Todd
Plan for tomorrow - Remove/cut up 15-C-001 @ Airport Rd.
- pressure test @ VORTAC, backfill @ FSS.
- sample @ west side 20.5

15-D-001 Signed 11/13/97 BK



Side View top of tank





8/26/97 Dave Corbett (70)

0615 - Breakfast WTX - rainy possible clearing Low 40° high 56°F.
0700 - H&S Mtg: General issues - today activities Pete Level B.
0730 Pete & Chris - set up LEVEL B for tank cleaning @ airport Rd. 15-C-001. LEL = 0%; O_2 = 21 OK to proceed. D 8W01 11/20/97

Rich consolidating stockpiles @ Quarters.

Dave Sp. 11 Reports FAXed 15-B-001
103, 105, Tank Farm 205 (S) FSS, VORTAC

Bldg-30 → Met w/ Robert Parker/E.J. Bouncore from Asbestos Abatement - working
0830 Bob collected confirmational samples @ West of Bldg 205.

0830	TAL97SS129S	North Floor	DRO/BTEX/8260	87.6 lg
0831	TAL97SS130S	South Floor 5'bgs	DRO/BTEX/8260	87.43 g
0832	TAL97SS131S	South Floor 5'bgs	DRO/BTEX Dup.	87.47 g
0833	TAL97SS132S	South Wall 4'bgs	DRO/BTEX	87.68 g
0834	TAL97SS133S	North Wall 4'bgs	DRO/BTEX	87.29 g
0835	TAL97SS134S	East Wall 4'bgs	DRO/BTEX	87.79 g
0836	TAL97SS135S	West Wall 4'bgs	DRO/BTEX	87.57 g

0900 Dave - called Mike/Tom/SEA/CVO/SPK

0930 Dave met w/ ER (Asbestos Abatement Co.)

1000 Bryan/John Lovett and 4 FAA folks @ Quarters area. John L. mentioned FAA/Pitts/Air Force may co-ordinate. and possibly bring in soil burner due to volumes needing remediation.

1030 Bob/Dave - COC's/pack cooler starting @ TAL97SS115 → TAL97SS135S
Rinsate Blank: 8/26/97 Bob collected rinsate blank.
1700 → TAL97RB+~~36~~002 DRO/BTEX/8260/Pb
← Time is 1700 8/26/97

1100 Met w/ Todd - schedule (Todd - should be done 9/2-3 if supplies arrive.
1130 Asbestos Abatement - removing shell of Bldg 30

1145 Bob - LEL @ 15-C-001 8W01 11/20/97 D BK on Airport Rd. LEL = 0; O_2 = 21.0

(71) Dave Corbett 8/26/97

-1145 Pushed 15-E-001 8K @ Airport road over toward NE. Support column full of gas - will need another LEL. Gas dripping inside tank.

1200 Lunch

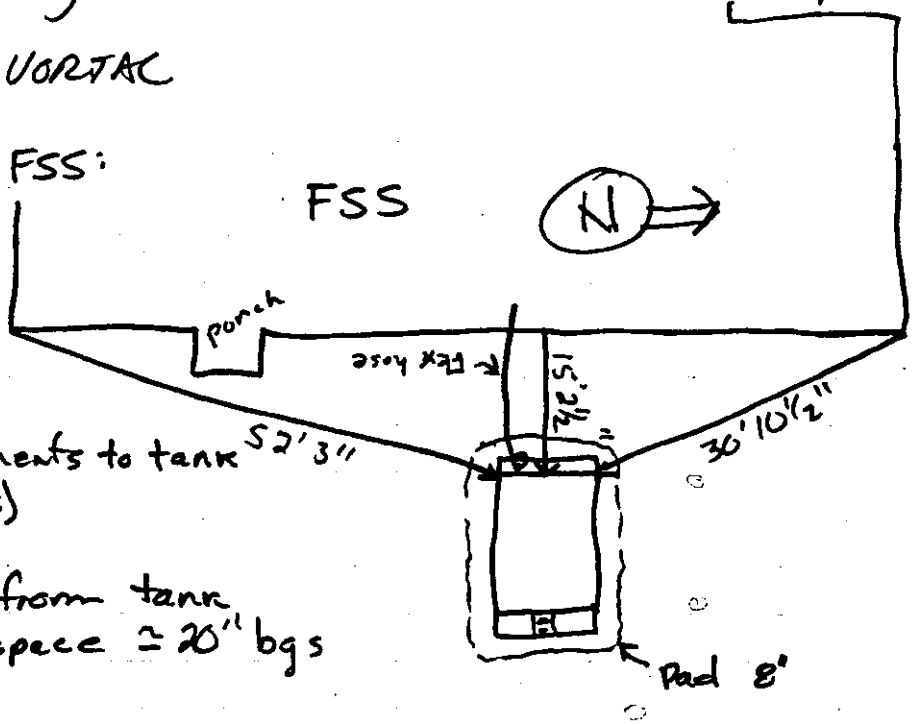
Bob died rinsate blank @ Bldg 100 (1030 hrs today).

1000 TAL97PS136PP Power (Antenna) Poles - Pb paint
yes 1000 hrs. behind shop (3)
Red paint/wood 1 stand @ Quonset Hut
2 laying N. of 205

Bob taking cooler to Dale Erickson for transport.

1300 ~~Dave~~ Bob to VORTAC

1300 Dave @ FSS:



All measurements to tank (not skids)

Flex hose from tank to crawl space ≈ 20" bgs

1330 Bryan - no further excavation on trench to bldg 205 (from the west - along main supply line (E-W) to shop. No place to stockpile soil. need liner

1330 Todd/Pete pressure testing VORTAC (new) tank.

1345 Rich (when done stockpiling behind Bldg 204) will go to VORTAC to backfill around bollards.

1400 ER work continuing by Asbestos Abatement - removing fiberboard sheathing.

1430 1st half of pressure test complete (held 5 lbs/sq in for 1hr.

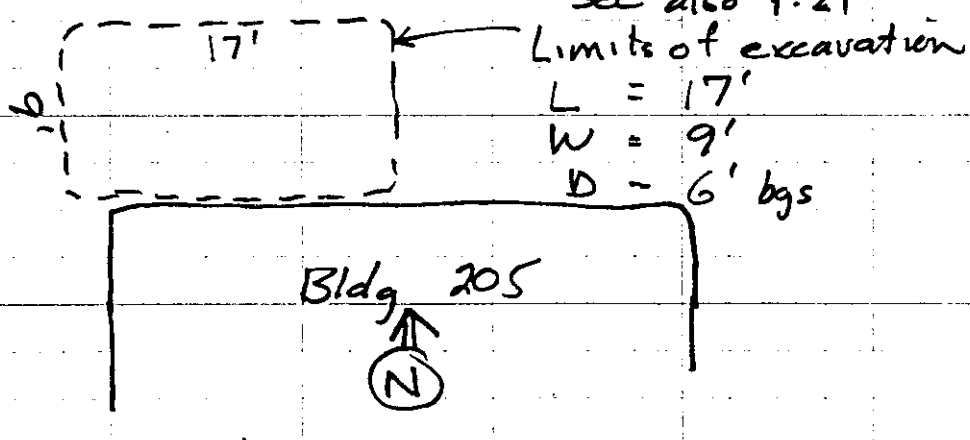
1500 Bare/Pete - measure Tank & bollards @ VORTAC

1515 Mel excavating 3' east @ Bldg 205 FAA shop - in direction from Bryan. Soil volume excavated still an issue - limited over excavation.

1530 Bob/Dave collected confirmational samples @ Bldg 205.
2nd half of pressure test - ~~5 psi~~ 4 psi in tank/interstitial space.

1530	TAL97SS137S	E. Floor	6' bgs	DRO/BTEX	87.49g
1531	TAL97SS138S	W. Floor	6' bgs	DRO	~~87.65g~~
1532	TAL97SS139S	S. Wall	4' bgs	DRO/BTEX	87.65g
1533	TAL97SS140S	E. Wall	4' bgs	DRO	
1534	TAL97SS141S	W. Wall	4' bgs	DRO	
1535	TAL97SS142S	N. Wall	4' bgs	DRO	

See also P. 21



1600 - Met w/Bryan/Todd to discuss moving bldg 204 South 100'.

Bob collecting - confirmational samples. @ over excavation @ 680 bldg.

Shop/Power/Storage

1700	TAL97SS143S	DRO/BTEX	87.58
1705	TAL97SS144S		87.75
1710	TAL97SS145S		87.36
1715	TAL97SS146S		87.46
1720	TAL97SS147S		87.85
1725	TAL97SS148S		87.51

8/27/97

0830	TAL97LS149Q30	Pb sample
0835	150Q30	
0840	151Q30	
0845	152Q30	

(73) Dave Corbett 8/27/97

0615 Breakfast - WTX - Overcast Low 38° High 58°F.
0700 H&S Mtg - CH Dave/Bob; FAA Bryan; OHM: Todd/Pete/Chris/Mel/Rich; Asbestos Abatement: Robert Parker, E J Bouncore General/hechoe/Asbestos
0730 Pete pressure testing @FSS
Chris/Rich moving cut tank parts 15-C-001 @ Airport Rd.
Robert/E.J. Bouncore @ Bldg 30 removing sheathing from N-side of Bldg 30.
Mel @ shop setting up fuel supply/return lines.
0830 1/2 of pressure test OK @ FSS
0900 Mel @ shop (Bldg 205) - fuel lines
0930 Chris/Rich @ Airport Rd.
1000 2nd half of pressure test OK @ FSS.
Bob called ANC
- need footprint from 15-C-001 D 8K @ Airport Rd.
- need 8260 out of stockpiles @ Bldg 205.
- need samples from Bldg 205 solvent stockpiles
- Diesel stockpile - 1500 yd³ - every 50 yd³ DRO (3L)
- every 5 highest PID - BTEX plus PAH.
1100 Mel w/excavator demolishes Bldg 602

Robert Parker/E J. Bouncore (Asbestos Abatement) - siding removed/piled on 10mil tarp - waiting for boxes - removing last of yellow painted items from Bldg 30.

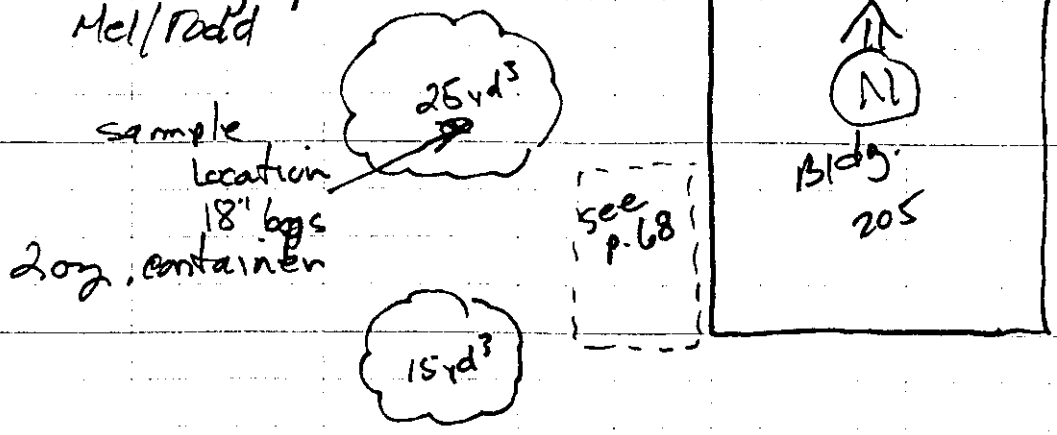
Todd/Pete setting up pressure test @ Bldg 205.
Bob collected samples from footprint of 15-C-001 D (8K @ Airport Rd.)
Bob - sending out sample coolers.

Samples: 15-C-001 D (8K @ Airport Rd)
1130 TAL97ST153M1 Center of 15-C-001 D 1.5' bgs Pb/DRO/GRO-BTEX 87.48
~~1131 TAL97ST154M1~~ DC 8/27/97 ~~DRO~~
~~TAL97ST155M1~~ ~~DRO~~
1200 Lunch
1240 Bob/Dave collect 8260 samples from stockpile near alleged solvent area:
1315 TAL97PL154S South pile @ Bldg 205 8260 2 oz.
1320 TAL97PL155S North pile @ Bldg 205 8260 2 oz.

(See Next page)

8/27/97 see p.72 Dave Corbett (74)

1300 Cleaning up Bldg 602
Mel/Todd

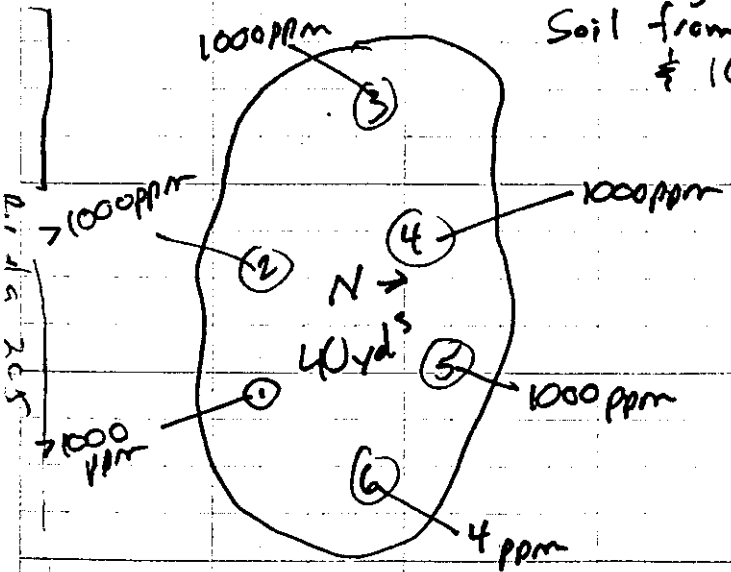


1330 Todd/Mel/Pete loading debris from Bldg 602.
Chris driving haul truck - rented Flatbed.
Dave ran Ensys on VORTAC, FSS (2) Bldg 30 @ 21'

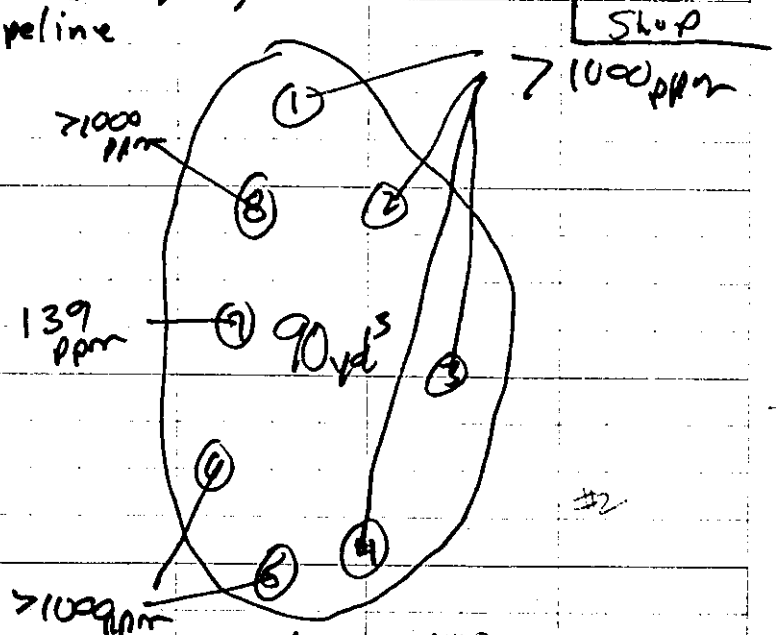
STD	-.03
VORTAC	0.20
FSS NF	0.01
FSS SF	0.06
Bldg 30 @ 21'	0.

Mel loading steel to haul to dump
Bob collected headspace samples from unconsolidated stockpiles.

Stockpile behind Bldg 205 (40 yd³) @ 1.5' below surface



Soil from pipeline @ 102



Asbestos Abatement working on Bldg 30

#1 SMD 11/26/97

STATE shop

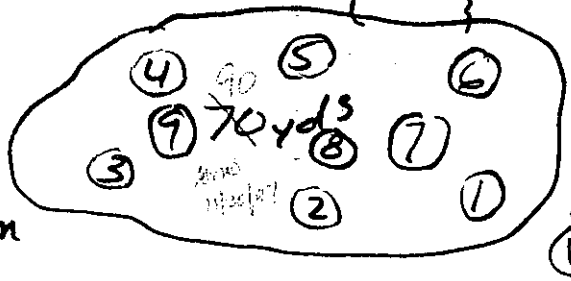
(75) 8/27/97 Dave Corbett

OC Bob/Dave headspacing soil stockpiles before consolidating @ Bryans suggestion (talked w/ ADEC).

Headspaces @ stockpile south of Bldg 104

#3 BMD 11/20/97

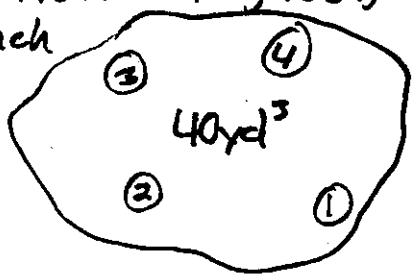
1 = 6ppm
2 = 204ppm
3 = >1000ppm
4 = 450ppm
5 = >1000ppm



6 = 4ppm
7 = 688ppm
8 = >1000ppm
9 = 731ppm

Stockpile headspaces from piles NE of Bldg 30. (Soil from Bldg 105.) 1.5' depth. end of trench

#4 BMD 11/20/97

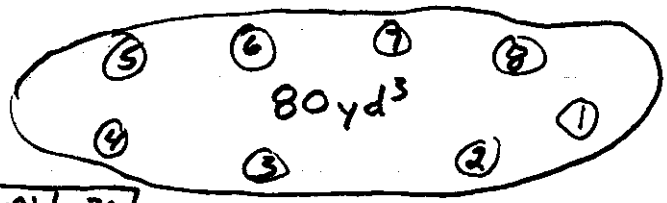


1 = 2ppm
2 = 6ppm
3 = 209ppm
4 = 7ppm
5 =

Stockpile from trench to Bldg 30.

#5 BMD 11/20/97

1 = 19ppm
2 = 54ppm
3 = >1000ppm
4 = >1000ppm

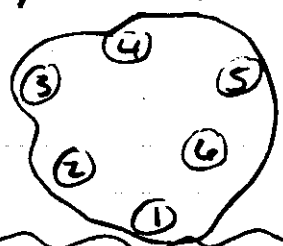


5 = 11ppm
6 = 205ppm
7 = 294ppm
8 = 32ppm.

Headspace Samples @ stockpile South of Bldg 300. Soil came from pipeline trench

#6 MD 11/20/97

1 = 549ppm
2 = 397ppm
3 = 32ppm
4 = 995ppm



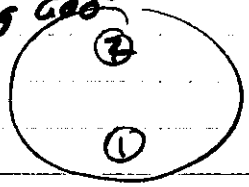
5 = 637ppm
6 = >1000

N MHD 11/24/97

Stockpile N. of Bldg 600 (220yds³) soil came from West end of Bldg 600

JFF/BMD 11/24/97

1 = >1000ppm
2 = 23ppm

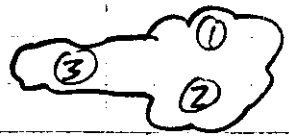


Dave Corbett 8/27/97

1645 Soil Stockpile between Bldg 100 & 106 (≈ 10 yds³) DC
Headspace: 1 = >1000ppm

#8 MP 11/24/97

1649 Soil Stockpile between Bldg 100 & 101 (30 yd³)

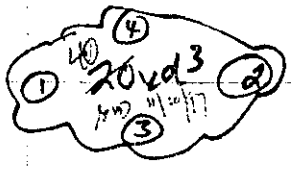


1 = >1000ppm
2 = 43ppm
3 = 2ppm

#9 MP 11/24/97

1655 Soil Stockpile N. of Bldg 101

1 = 2ppm
2 = 0ppm



3 = 2ppm
4 = 0ppm

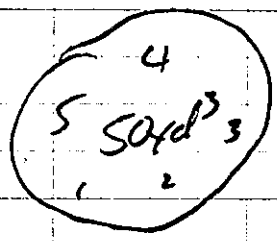
#10 MP 11/10/97

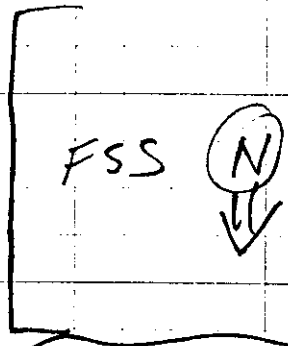
Bldg 101

1700 - Stockpile notes
1830 - end of shift

8/28/97
0730 TAL97PL1565 Duplicate of TAL97PL1545 @ Bldg 205
0800 Todd/Rich/Chris constructing bollards @ FSS
0830 Mel/Bob - trying to pull casing on well North of Bldg 600 (60')
0900 Bob/Dave collect headspace @ FSS

1 = 114ppm
2 = 697ppm
3 = 700ppm
4 = 84ppm
5 = 286ppm





#11 MP 11/20/97

"Rite in the Rain®"

ALL-WEATHER

FIELD

SPIRAL MAXI-NOTEBOOK

No. 353-MX

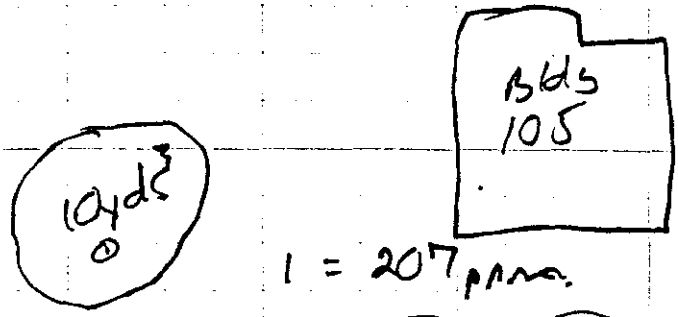
FAA - Tanana, AK
142314. Al. F9
August 28, 1997
Notebook #2

8/28/97 Dave Corbett (76) (77)

0900 Bob/Dave collect headspace samples from FSS/and quarters area stockpiles.

Todd/Mel/Pete/Chris - installing bollards/tank @ FSS. Pipe compound Permatex Part No. 510 - black joint compound.

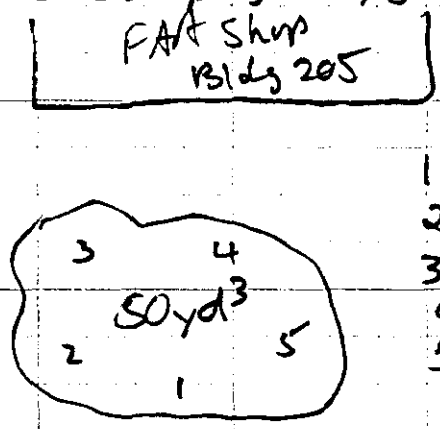
Stockpile headspace samples @ West side of Bldg 105 (10yd³) = 207 ppm



= 207 ppm.

#12 sent 11/20/97

xxo Stockpile headspace samples @ 15-B-001 South of Bldg 205.

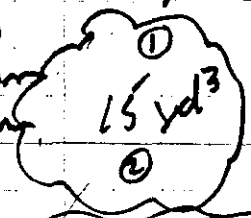


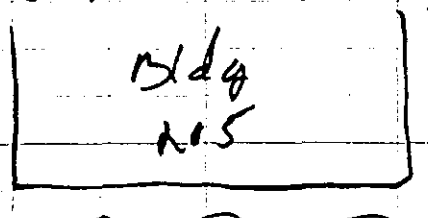
1 = 1 ppm
2 = 13 ppm
3 = 10 ppm
4 = 11 ppm
5 = 1 ppm.

#13 sent 11/20/97

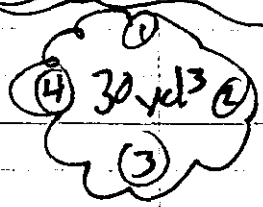
Stockpile headspace samples West side Bldg 205

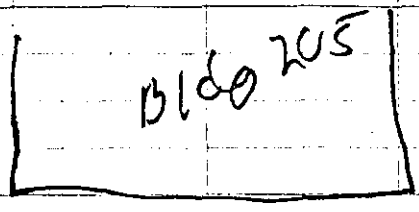
(South Pile)
1 = 705 ppm
2 = 450 ppm





1 = 466 ppm
2 = 628 ppm
3 = 451 ppm
4 = 458 ppm





(78) Dave Corbett 8/28/97

1015 Tried to FAX stockpile headspace results to Mike D. no success - FAX @ ANC busy.

Pete/Chris/Rich hauling tank steel to landfill.

1100 Todd/Mel piping @ FSS.

1130 Tried FAXing again - busy

1140 Rich/Chris cutting/hauling tanks to landfill.

Mel/Todd piping @ VORTAC - valves on top of tank in return/supply lines (1½") valves in sump - eliminated 2 sets of valves between tank & sump.

1330 Asbestos abatement crew finished - boxes loaded w/ Pb paint fiberboard wrapped w/ plastic,

1400 Mel/Todd @ VORTAC piping in supply/return line

Bollards backfilled & capped.

1000 Excavated for Septic tank - NOT Found (removed previously

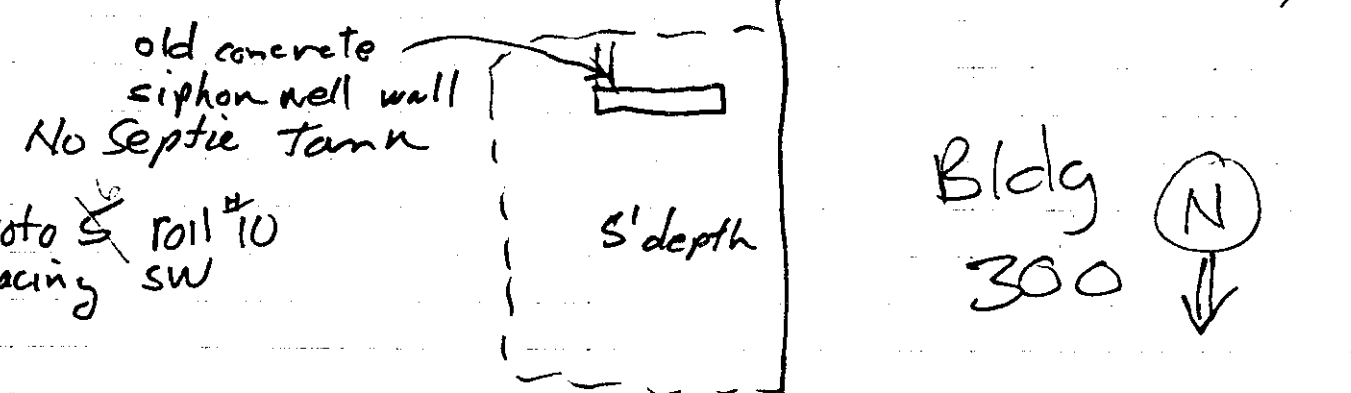


Photo 5 roll 10 facing SW

1700 Met w/ Bryan to discuss 8260 sample @ Bldg 205 - anticipated to get results 9/3.

1800 Met w/ Bryan to exchange info from lunch - post on site drawing that Bryan has. - 2 copies 1 for C.I.2.

8/29/97 Dave Corbett

0615 - Breakfast WTX overcast low 36° hzgl 46°.

0700 H/S mtg - OHM: Todd/Pete/Mel/Chris/Rich
CH Dave/Bob
FAAresp - Bryan
Discussed activities for today
- Pete/Rich/Chris - finish steel hauling to landfill
- Pump out 2 sewer lift stations 20" in one (East) 12" in west station (≈ 200gal).
- Fill Well North of Bldg 600 w/ bentonite/concrete cap, remove backwash culvert - smooth area for stockpile liner (N of Bldg 600.
- Mel/Todd to finish piping @ VOR except for day tank.

0900 - Mel/Todd running piping thru floor @ VORTAC.

Bob stopped @ VORTAC - Pete/Chris/Rich finishing steel and debris hauling to landfill.

1000 Bob moved to well north of Bldg 600 - filled w/ dirt to within 1' of top of casing - Bob filled w/ Bentonite and covered w/concrete.
Rich backfilled valve box area 10-12yd³

1030 Rich/Bob prepare to pump out sewage lift station between Bldg 102 & 103. 20" water in 4' culvert.

1130 start pumping @ east lift station (102 & 103 bldgs).
Pete/Chris hauling steel and ~~debris~~ debris to landfill.
Mel/Todd pressure testing lines @ VORTAC

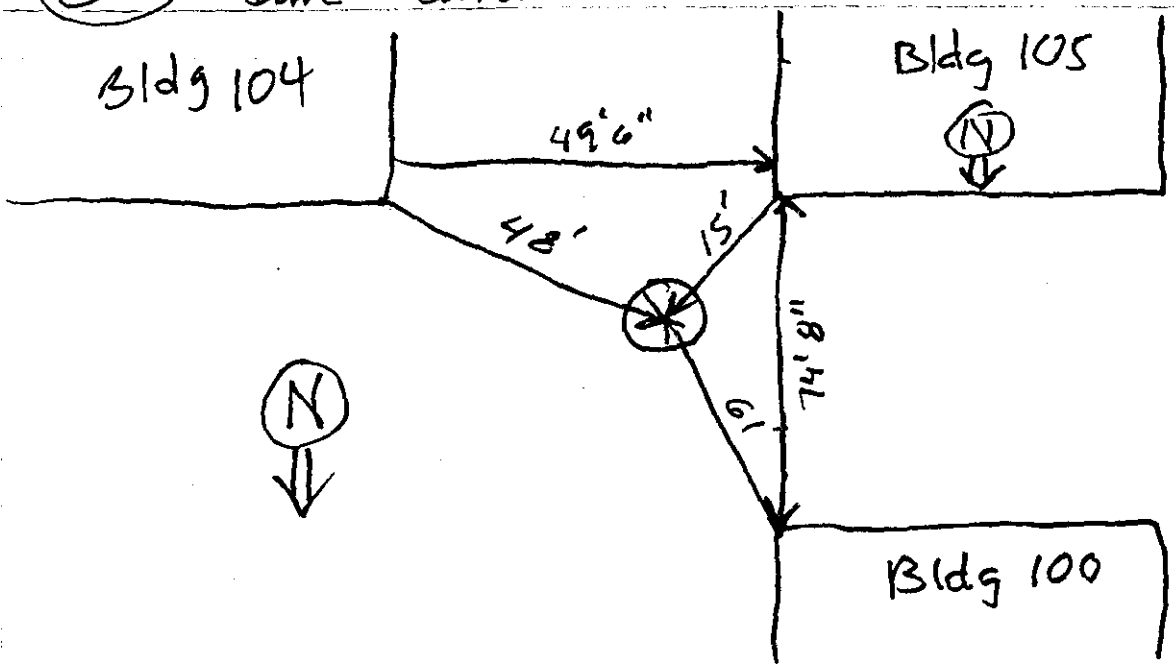
1200 Lunch

1230 Finish pumping 102 & 103 lift station - 185gal pumped.

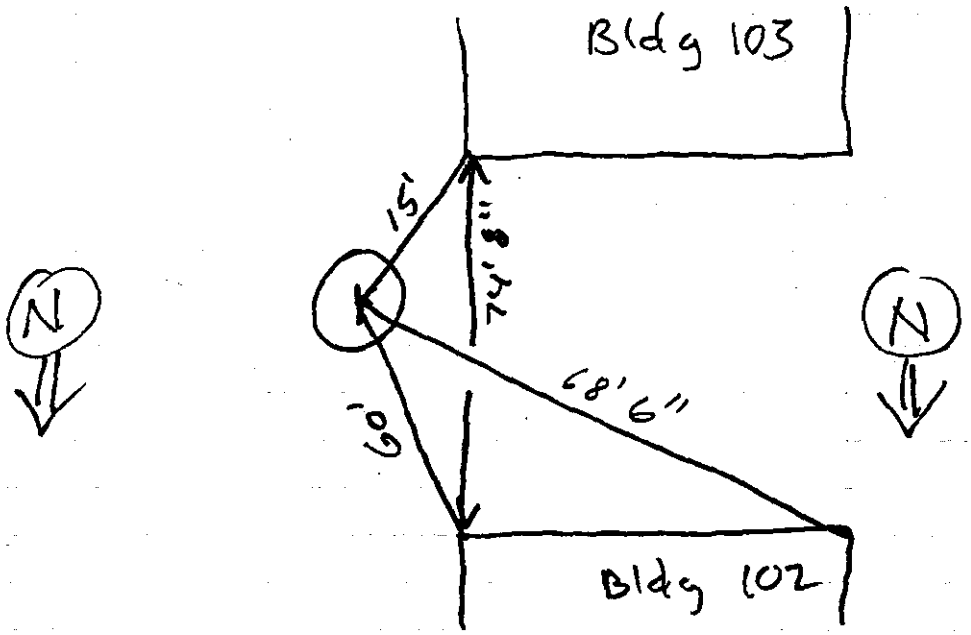
1340 Bob/Rich @ lift station - too much head for pump - Bob using small sump pump to empty station.

1300 Todd/Mel/Dave/Bryan @ VORTAC - Mel riveting rain guard on sump
Rich w/backhoe transporting pipe threader to shop storage area.
loading other equipment @ VOR to take to shop " ".

(CL) Dave Corbett 8/29/97



No backfill available 'till Saturday.



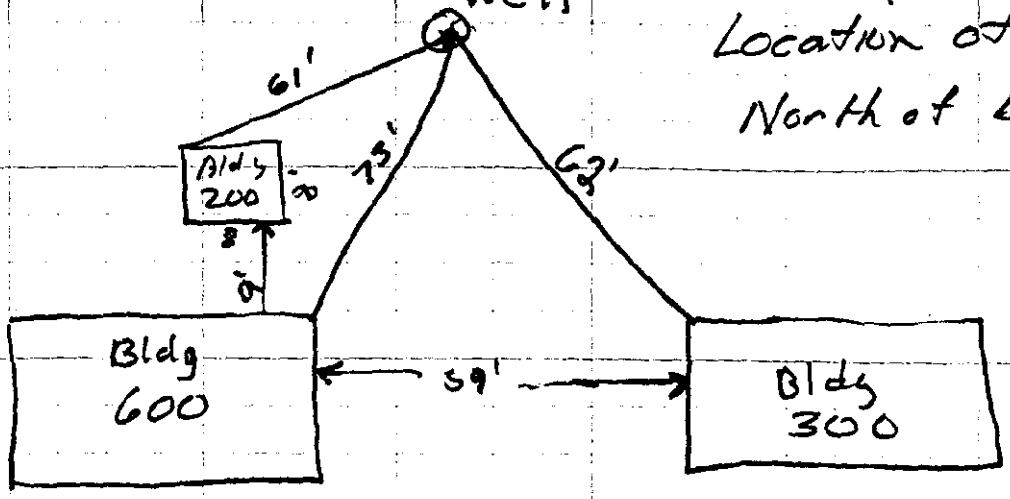
1400 Todd/Mel finish plumbing @ VORTAC (except for day tank) pack up equipment & move to Bldg 205 (shop) to plumb.

Bob/Dave measure sewage lift stations and well North of Bldg 600

1430 Mel plumbing Tank @ Shop.

8/24/47 Dave Corbett (81)

1500

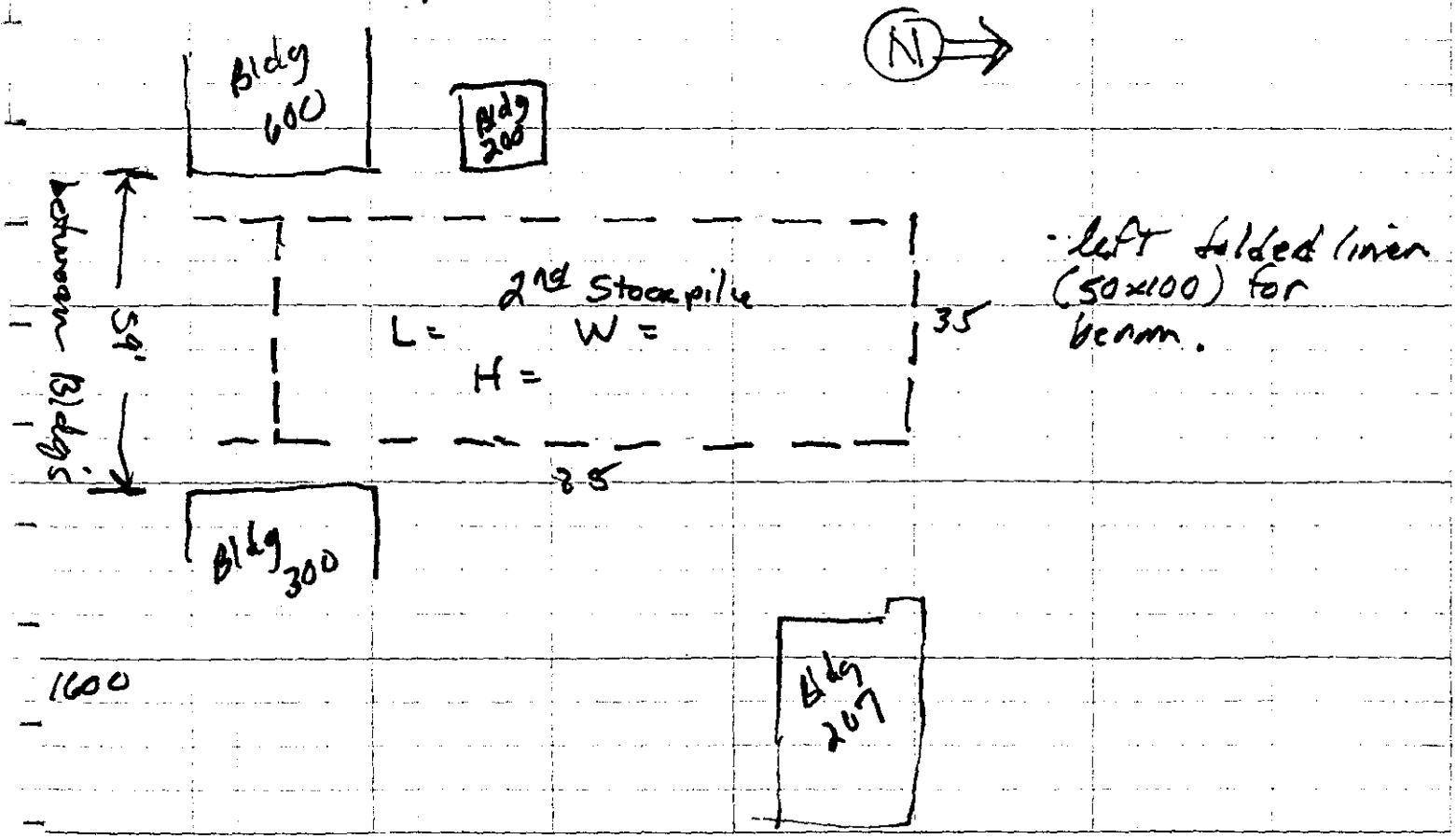


Location of well North of Bldg 600

1515 Todd/Bryan/Dave/Bob @ east sewage lift station discuss removing piping / backfilling (pushing top of culvert approx. 2' bgs backfill,

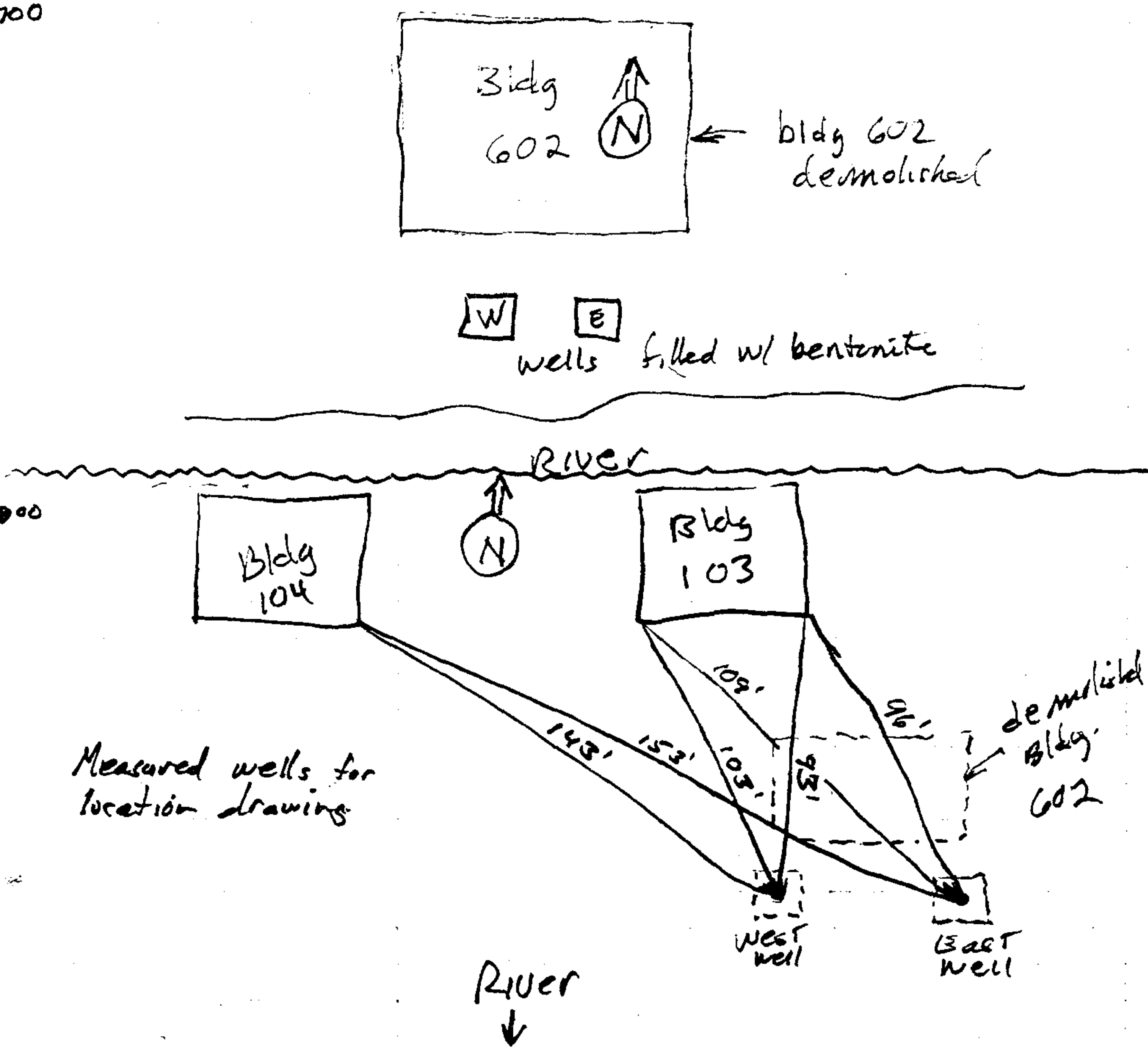
Chris/Pete pumping out west sewage lift station (near 105 Bldg)

1530 Todd on excavator/Rich on backhoe backfill excavation @ well N. of Bldg 600 and smooth out area for 2nd stock pile



) (o a) Dave Corbell 8/28/87

1700



1800

Measured wells for location drawing

8/30/97 Dave Corbett (83)

0615 - Breakfast - WTX rain/overcast Low 38° high 50°±
0700 - H/S Mtg - General safety

0715 Pete/Chris/Rich - grouting wells South of Bldg 602

-Rich backfilling excavation N. of Bldg 205
-City hauling backfill.

0800 Pete/Chris/Bob grouting wells ~~At~~ & South of Bldg 602 (2 abandon wells) see Notebook 1 p. for depths
9wt mud in casing - casing left in ground.

0900 Todd working on piping for Bldg 208 tunn.

Mel painting fuel supply lines @ Bldg 205.

1000 Pete/Chris/Bob grouting westernmost of the 2 wells South of Bldg 602.

Todd/Mel @ shop piping/painting lines

1100 Rich backfilling suspected solvent excavation @ Bldg 205

1200 Lunch

1240 Rich backfilling excavation S. of Bldg 104 & 105

Pete/Chris/Bob pumping bentonite in well (West one) S of Bldg 602

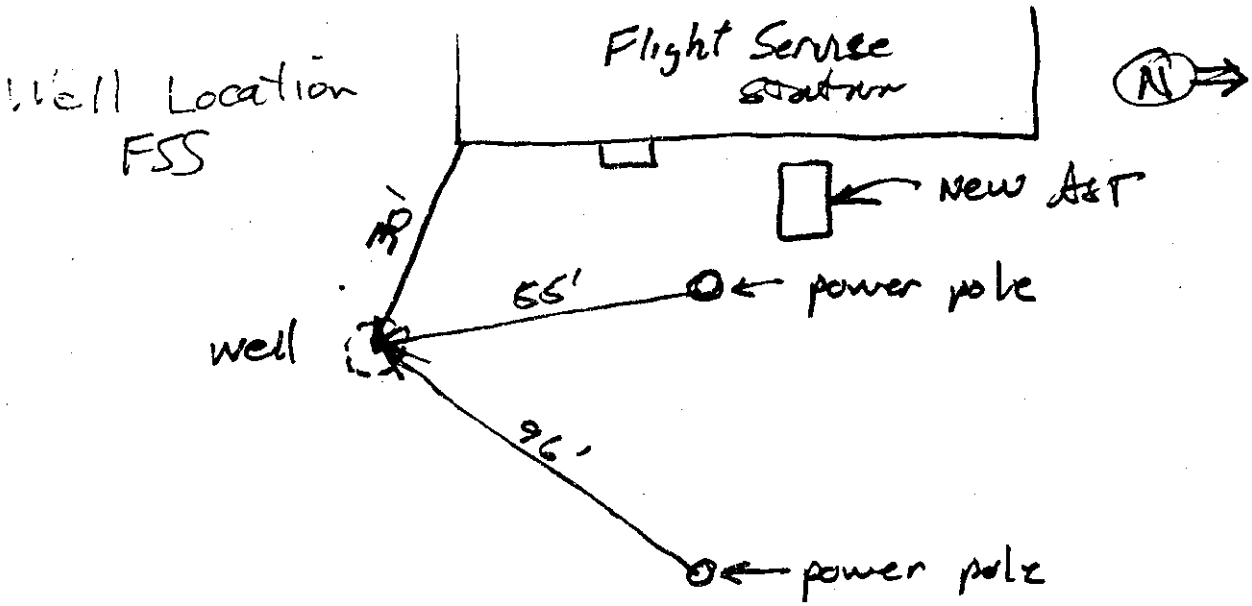
1330 Mel/Todd plumbing on FAA shop tunn.

1400 Rich backfilling excavation N. of FAA shop (#205).

New Tank prepared to be moved in to position N. of 205 centered on N. wall.

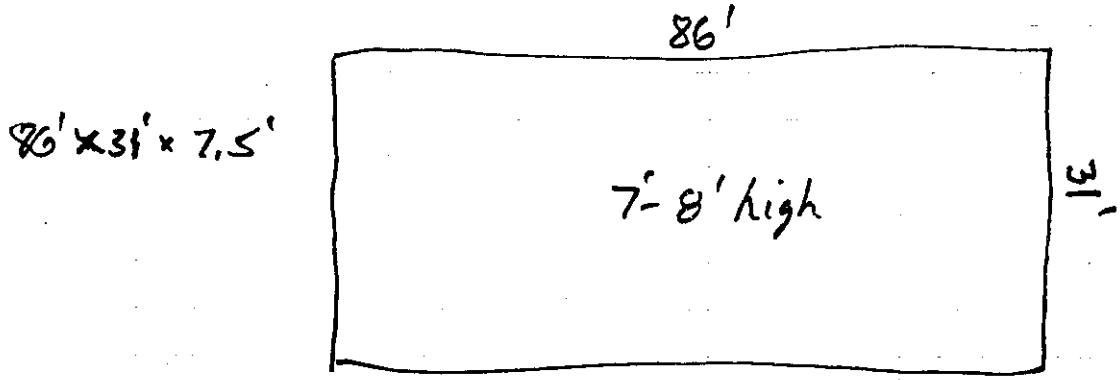
64 Dave Corbett 8/30/97

1500 Rich excavates @ FSS for dry well.



1530 Pad (Bldg #205) constructed - new tank moved onto pad.

1600 Rich/Bob/Bryan excavate west of FSS
2 attempts were made - Bryan concerned about buried cables - stops digging. Nothing found.
One attempt near rectangular bare spot - another south of same spot.
Stockpile North of Bldg 204



1730 Mel/Todd @ outfall of shop tank
Rick stockpiling

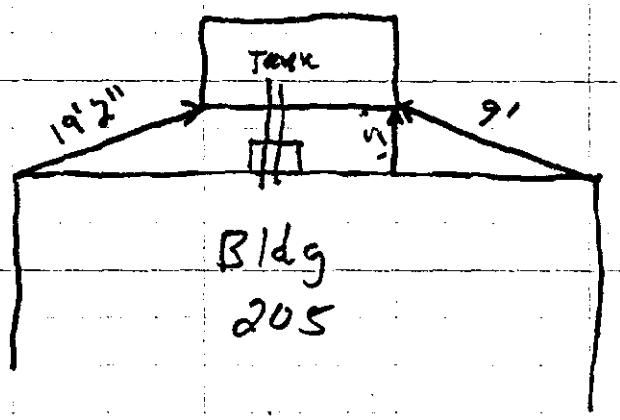
8/31/97 ~~8/30/97~~ Dave Corbett (85)

0615 - Breakfast | WTX: overcast rain fog low 40° high 50°F
H/S Mtg - General
- schedule: lay liner between Bldg 600/300
- haul soil from FSS (contaminated)
- plumb Bldg 205 Tank.

0715 Rich/Pete/Chris - roll out liner between Bldg 600/300.
Mel constructing unistrut support

0800 City trucks hauling contaminated soil from FSS to liner.

0830 Rich excavates for bollards @ Bldg 205
Pete cut saunatubes for bollards / double wrapped in plastic



0900 Todd/Mel hanging fuel line supports
Pete/Chris installing bollards
Rich loading liner w/ soil from FSS.

0915 City loader/trucks moving stockpile N. of Bldg 205 to liner @ Bldg 600/300.

1000 OHM pouring concrete around bollards @ Shop (T205)

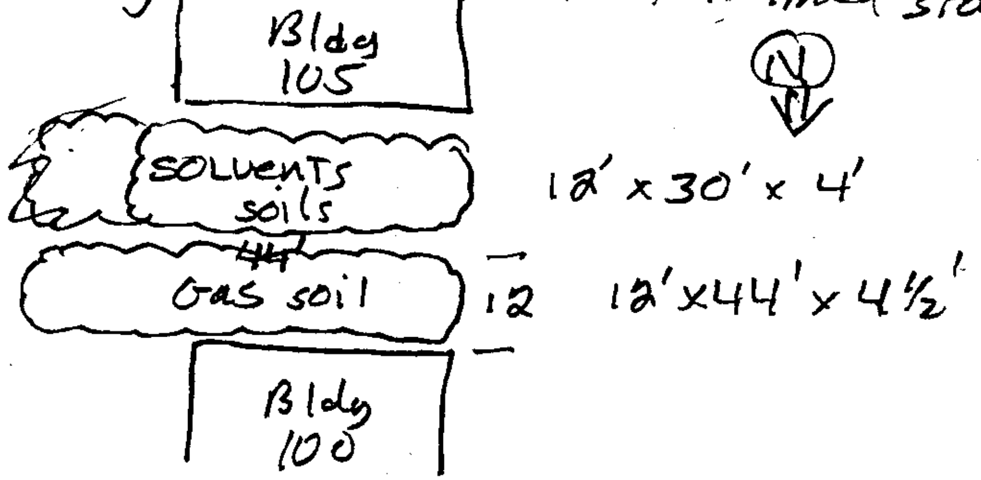
Consolidating stockpiles on liner between Bldg 600/300.

Plumbing Shop tank.

1200 Lunch

[illegible]

1245 Rich moving solvent suspected soil to lined stockpile



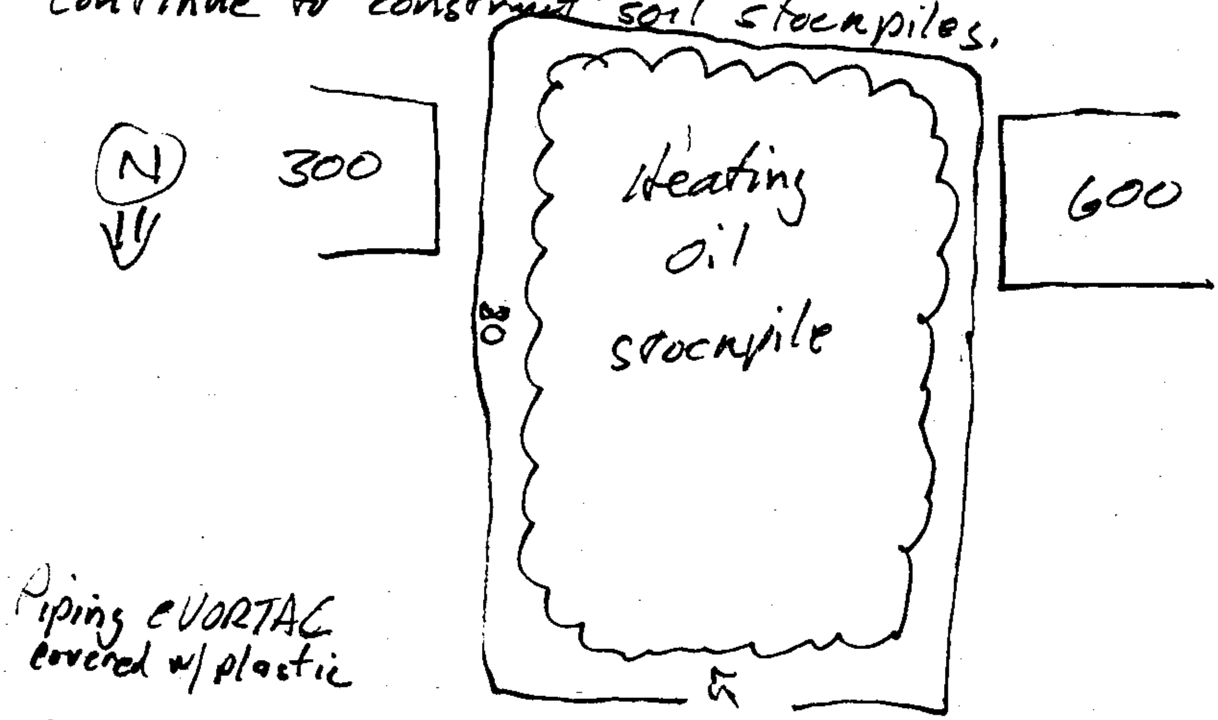
Rich moving gas contaminated soils to stockpile

Mel/Todd/Chris - started daytank installation @ VORTAC

Pete - setup pressure test on lines @ shop blds

1400 ~~Pete runs pressure test~~. Will run pressure test tomorrow

1500 Continue to construct soil stockpiles.



1630 Rich continues to construct soil stockpile also City loader/trucks moving soil to stockpiles

Mel/Todd/Chris - day tank install @ VORTAC

1745 end of shift

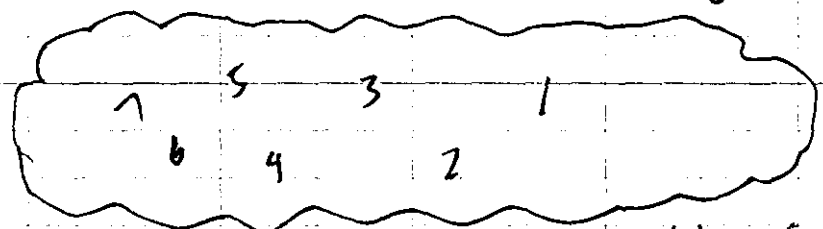
9/1/97 Dave Corbett (87)

0615 - Breakfast - WTX - overcast Low 38° - hi 48°F

0700 H/S Mtg / Schedule
- Rich finish soil stockpiles / bury concrete from Bldg 602 / cover wells N of Bldg 602
- fill sewage lift stations
Mel/Todd - finish day tank e VORTAC
Total stockpiles approx 1620 yd³. - Todd's estimate
Bob/Dave to sample soils from Bldg 600
- collect 32 samples + 1 dup for 20 yd³ excavated and stockpiled, also Gas soil stockpile
Gas Contaminated stockpile: Bldg 205 15-B-001 2-20z.

0800 TAL97 PL 157S West end GRO/BTEX — (87.85 GRO 87.82 BTEX
0805 TAL97 PL 158S Center GRO/BTEX — (87.69 GRO 87.46 BTEX
0810 TAL97 PL 159S East end GRO/BTEX — (87.55 GRO 87.34 BTEX
0815 TAL97 PL 160S duplicate of 158S (87.56 BTEX 87.47 GRO

Pete runs pressure test on liner.
Gas stockpile located between Bldg 100 & Bldg 105



#14 AND 11/19/97

0830 Headspace to determine sample location (cool morning) may yeild low OVM reading)
1 = 1 ppm
2 = 29 ppm
3 = 34 ppm sample 157
4 = 38 ppm
5 = 176 ppm sample 158
6 = 189 ppm (dup location) sample 159 & 160
7 = 91 ppm

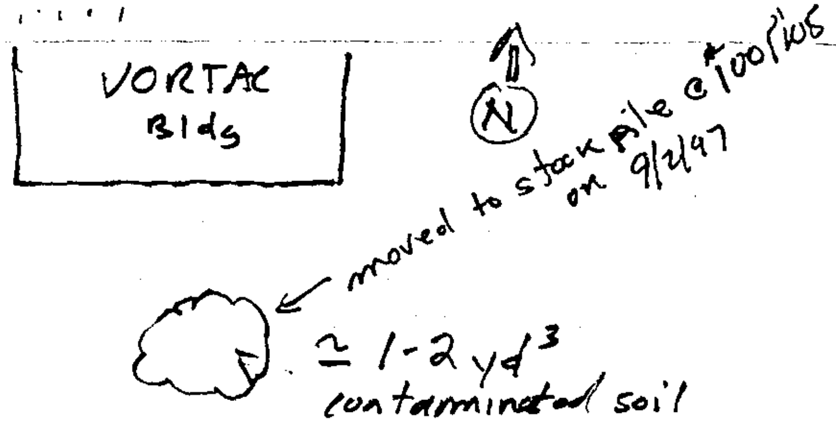
Bldg 100

Mel/Chris/Pete - plumbing @ FAA shop Bldg 205.
Rich stockpiling contaminated soil.

0900 Rich stockpiling contaminated soil
Mel/Todd/Chris/Rich @ install at Shop Tank.

0945 Pressure test on lines successful.

#15
11/21/97



PL = pile

VORTAC Stockpile:

0945 TAL97PL161V Vortac Stockpile (2yd³) (87.47 BTEX, 87.73 GRO)

0950 TAL97PL162V Vortac " " (87.67 BTEX, 87.80 GRO)

0955 TAL97PL163V duplicate of 162V (87.31 BTEX, 87.90 GRO)

Analysis for ↑ samples = GRO/BTEX/DRO/Pb.
12 containers

0930 Rich moving stockpile N of Bldg 205 to stockpile #1 (#204)
Pet compacting bollards @ shop. Rich adding 2' top of pile.

Mel/Todd leave to VORTAC

Bob/Dave goto VORTAC to sample contam. stockpile.

1015 Photographed Shop Tank install.

1030 Rich (backhoe) excavating hole to dispose of concrete from Bldg 602 excavation.

Mel/Todd/Chris @ VORTAC installing daytank.

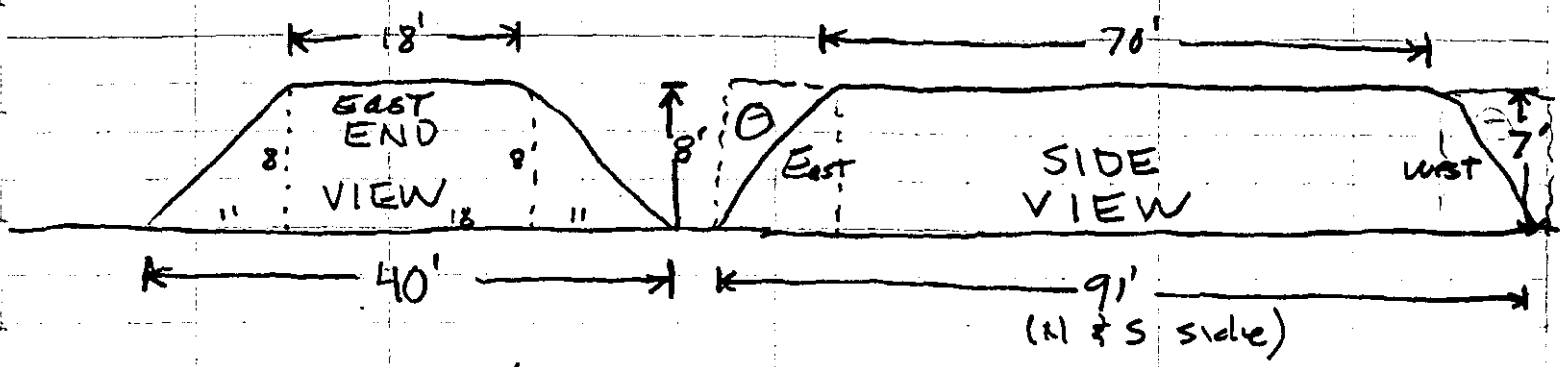
1120 Pete preparing to paint bollards.
Rich burying concrete from Bldg 602 wells.

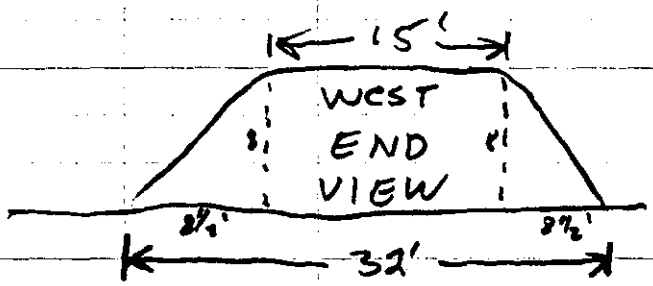
1150 Preparing to pressure test lines @ VORTAC.

1200 Lunch

9/1/97 Dave Corbett (89)

1300 Bob/Dave measure #1 Stockpile located north of Bldg 204





cross section of east end:

$A = \frac{1}{2}(11 \times 8)2 + (18 \times 8)$

$A = 232$ sq ft ~~x 91' L~~

$V = 232' \times 91'$

$V = 21112$ cu ft

$V = \cong 782$ yd³ corrected = 762

cross section of west end:

$A = \frac{1}{2}(8.5 \times 8)2 + (15 \times 8)$

$A = 68 + 120$

$A = 188$ sq ft.

$V = 188 \times 91$

$V = 17108$ cu ft.

$V = 633.6$ yd³ 613

-204 yd³ east end

1st calc. =	782	782
2nd calc =	633.6	634
		1416 ÷ 2 = 708

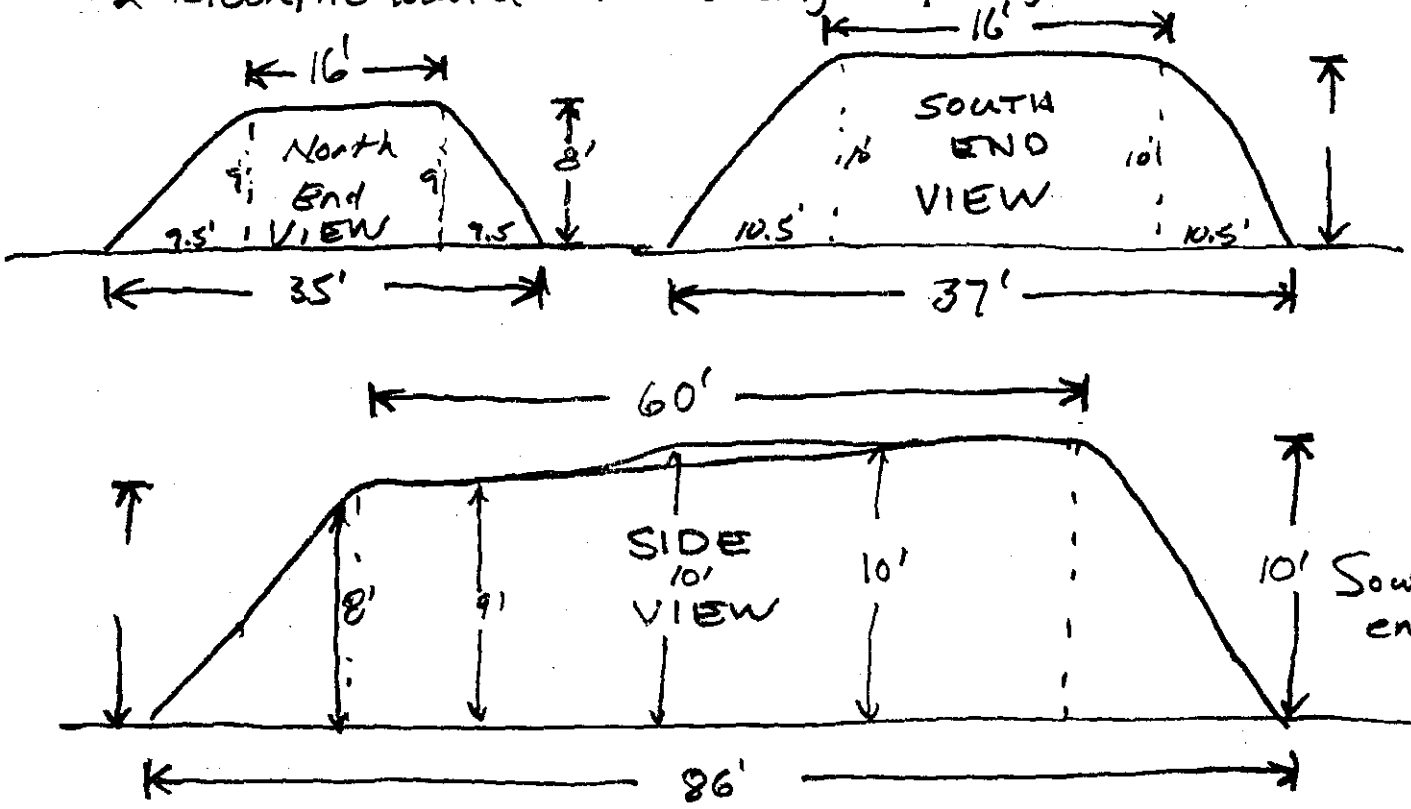
762 + 613 ÷ 2 = 687 yd³

1400 Pete painting piping @ Shop.
Mel/Chris @ VORTOC - finishing day tank install & pressure test.
Todd/w Dale Ericsson @ equipment storage/FSS.
Rich @ FSS - ~~ad~~ abandoning well located SE of FSS.
(see p. 84)

1430 Bob/Dave measure #2 Stockpile located between Bldg 600 and Bldg 300.
Bryan wants to loon further for dry well crib 90' west of FSS. (Further west near left station.

Dave Corbett 7/11/91

#2 Stockpile located between Bldg 600/Bldg 300.



North End:
x-sec A = 85.5 + 144
x-sec A = 230 sq ft.
V = 230' × 86'
V = 19780 cu ft
V = 733 yd³

South End
x-sec A = 105 + 160
x-sec A = 265 sq ft.
~~V = 265~~
V = 265' × 86'
V = 22790 cu ft
V = 844

788 yd³
− 50 yd³ (N-S end correction)
738 yd³

1500 Total in #1 & #2 stockpile est @ 1425 yd³.

Pete painting pipelines @ shop.
Mel/Todd/Chris/Bryan @ VORTAC - pressure testing and finishing day tank.

1525 Bob measures sewage lift stations
West (by Bldg 105 LEL = 0%; O_2 = 20.8 OVM = 0 ppm
East (by Bldg 103 LEL = 0%; O_2 = 20.3 190 ppm = OVM*

*When pumping lift station OVM put hose in that was used for fuel - sheen on H2O; fuel pumped into lift station from hose.

9/1/97 Dave Corbett (91)

1530 Bob/Dave sample stockpile (ER) from excavation on west side of Bldg 600.

1530	TAL97PL164S	Bldg 600 stockpile	DRO/BTEX	87.41g
1535	TAL97PL165S	duplicate of 164	DRO/BTEX	87.87g

Dave measured stockpile #2 toe (over highest point) to opposite toe - for liner dimensions of 50×100 - West to EAST = 48'.

1540 Mel/Chris/Todd @ VORTAC
Pete painting @ Shop ~~metal~~ debris from
Rich moving concrete ~~from storage area. store~~ FSS to dump.

1550 Pete painting @ FSS.
Rich flattening STOCKPILE #2 w/excavator.

1600 Bob/Dave head to VORTAC. Power steering pump in van went out - returned to owner (Dale Ericksen) tried to fix.

1700 Bob/Dave @ VORTAC - tank & piping (inside & out) passed pressure test

Day tank installed / Vent on bldg installed - minor (9") plumbing left to do on day tank.

Bollards painted / support post for fuel line painted.

OHM loading up equipment.

Mel working w/ swivel hose connections.

Installation of day tank to spec w/ 2 additional ½" Ball valves on ~~either~~ each side RAYCOR FILTER.

1730 Met w/ Bryan/Todd to discuss remaining schedule
✓ berm stockpiles (over lap cover on top of bottom line.
✓ demo Bldg 30
✓ Paint @ VORTAC/FSS
✓ Bldg 600 stockpile ER move
✓ sewage lift stations
✓ crib 90' west of FSS
✓ get Pb/8260 results.
- fed lines - landfill Hrs

✓ transfer fuel - spill reports / Report
✓ cut up ~~temp fuel storage~~ Tanks.
✓ remove temp fuel supplies (VOR, FSS, Shop)
✓ 1000 gal tank @ VORTAC remove
✓ smooth out work areas / clean up (houses)
✓ STOCKPILE screen/sample
JAI Friday 9/5/97

1800 - end

Margin notes: YOR I - Tom Wolff - soutar - proj - equipment - Concrete dump; ✓ Stairs @ houses; speed bump on road; clean house; pick up work area; VORTAC Floor clean; ENG BLDG caulking; Bldg @ Shop demo - Todd - How many - what are they.

Dave Corbett 9/2/97

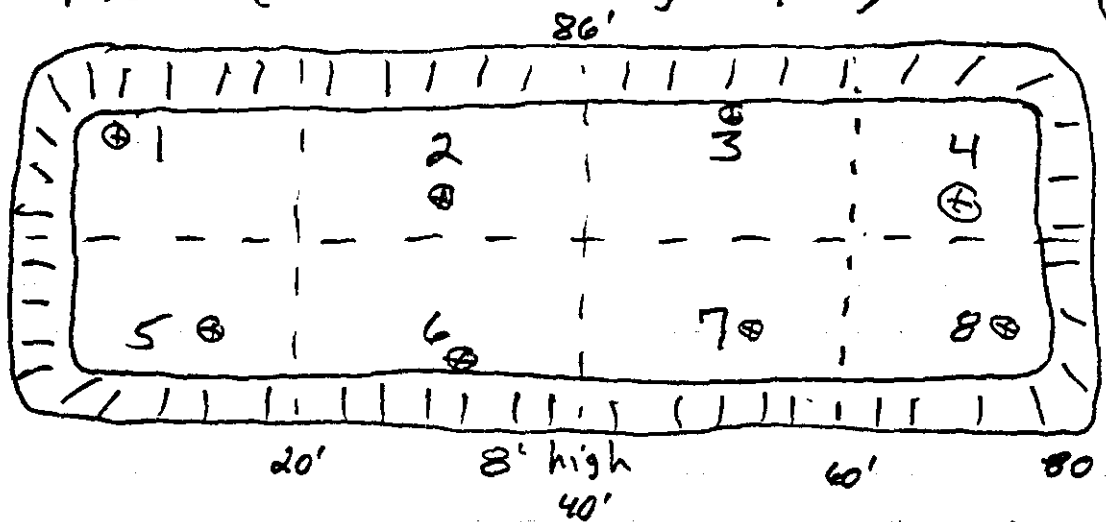
0615 - Breakfast WTX - overcast Low 37° high 48° F.

0700 H/S Mtg - OVM - Todd/Mel/Rich/Pete/Chris
- Clt_2 - Bob/Dave
- FAA - Bryan
- Bachoe safety - Level B in east lift station, IP OVM reading is high - LEL's in both lift stations.

0720 Todd/Mel/Chris to VORTAC to finish install, & painting
Pete painting
Rich moving 2yd³ of soil from VORTAC to soil stockpile.

Bob/Dave to sample #1 & #2 stockpiles.

0800 Stockpile #2 (located between Bldg 300/Bldg 600



See also p. 90

0930-1015 Headspace samples of Stockpile #2 taken @ 4' depth

1	= >1000 ppm	5	= 864 ppm
2	= >1000 ppm	6	= >1000 ppm
3	= 167 ppm	7	= 41 ppm
4	= >1000 ppm	8	= >1000 ppm

PL = pile O = OTHER

Lab samples: Stockpile #2

					Bottle WT.
1015	1	TAL97PL166O	4' @ location 1	DRO/BTEX	87.41g
020	2	TAL97PL167O	4' @ #2	DRO/BTEX	87.67g
025	3	TAL97PL168O	4' @ #3	" "	87.32g
030	4	TAL97PL169O	4' @ #4	" "	87.24g
035	5	TAL97PL170O	4' @ #5	" "	87.38g
040	6	TAL97PL171O	4' @ #6	" "	87.11g
45	7	TAL97PL172O	4' @ #7	" "	87.29g
50	8	TAL97PL173O	4' @ #8	" "	87.17g
055	8	TAL97PL174O	4' @ #8	DRO/BTEX Duplicate of ~~173~~ 173 @	87.32g

0900 Mel/Todd/Chris @ VORTAC installing (finishing) day tank. Pete painting @ shop. Rich moving backfill for left stations.

0915 Called Mike w/ Punch list (see p. 91)

0930 Bob/Dave begin screening/sampling @ stockpile #2.

1000 Met w/ Bryan/Todd - suggested we consolidate our punch lists @ end of day. Asked Todd to inventory waste drums (how many, contents, quantity). Info will be relay to Mike D.

1015 Todd inventorying drums. / Bob/Dave finish screening #2 stockpile. Rich moving ER stockpile @ Bldg 600. Pete painting. Mel/Chris @ VORTAC finishing day tank, painting

1030 Met w/ Bryan - he said go ahead on Test pits @ VOR/NDB. - discussed barging out OHM equipment / possibly swing deal w/ local equipment to demo Bldg. 30. Clean used houses.

1035 Bob & Dave prepare sample bottles/lables for Stockpile #2.

Met w/ Bryan - Dave/Bryan/Jim Swalling (FAA) to tour sites after lunch. Bryan suggested Rich work on crib 90' West of FSS today and test pits @ NDB/VOR.

1100 Todd gave Dave inventory of waste drums, as follows:

2 ea. drums	- 110 gals.	gasoline
3 ea. drums	- 165 gals.	diesel
1 ea. drum	- 1/3 full	gasoline sludge
1 ea. drum	- 1/3 full	diesel sludge
2 ea. polydrums	? size	tank rinsate (assumed full - DRC)
1 ea drum	- 1/2 full	diesel absorbents solid vs liquid
1 ea. drum	- 1/3 full	gasoline absorbents

These estimates do not include sludges/rinsate from temporary fuel storage tanks (15-B-009, 15-B-010, or tank from Bldg 602).

1130 Called Mike w/ waste drum inventory - left mmsg.

1135 Rec'd fax from Anthony. Phone rang - no fax came thru

1140 Left mmsg w/ Mike on punch list/schedule

1200 left mmsg w/ Mike on description of Pb paint samples.

1215 Lunch

1230 Met w/ Jim Swalling / Bryan - discussed site tour w/ Jim/Bryan/Dave

1240 Met w/ Todd - he indicated Marn Scanlon rec'd Pb paint (on interior) sample results - Pb present but @ low levels - below Level of concern.

(94) Dave Corbett 9/2/97

1245 Bob/Dave met Todd - discussed schedule of Test Pits, we will sample stockpile #1 before test pits.

1330 Called Mike/Anthony - discussed punch list / 8260 sample (out of temp specs) Pb samples.

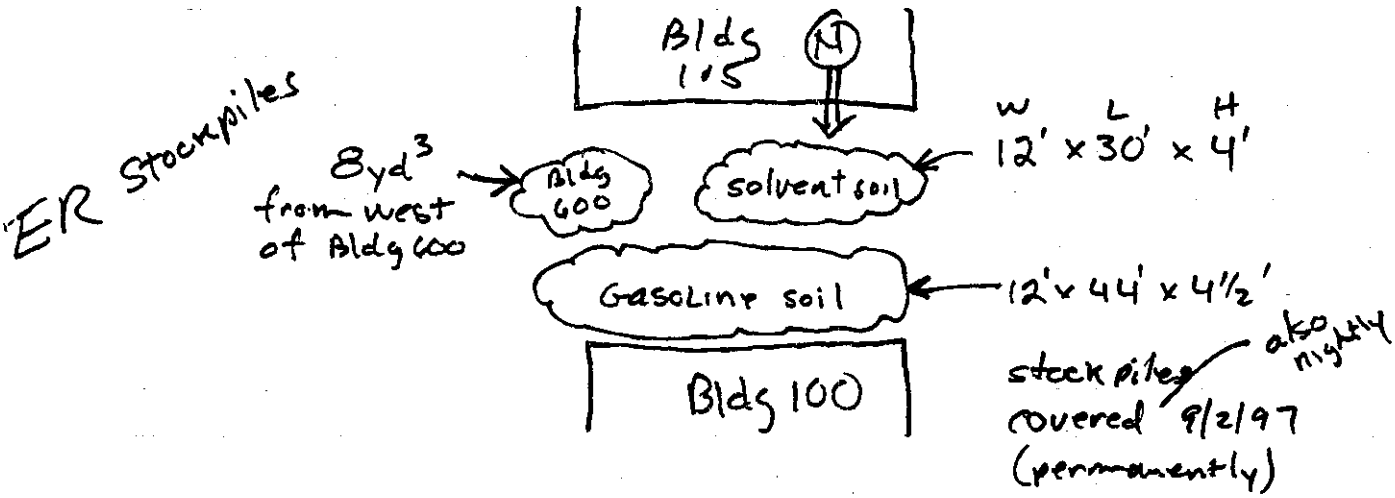
1345 Called Mike - schedule - OK to go to SEA / think about reporting for Umalahleet/Tanama. - DCorbett available.

1400 Resampled suspected solvent pile (earlier samples out of temp specs.). Analysis required = 8260.

1500	TAL97PL154S	Suspected Solvent pile from Bldg 205	8260
1505	TAL97PL155S	" " " " " "	8260
1510	TAL97PL156S	" " " " " "	8260

1520 Bob/Dave collected DRO/BTEX on suspected solvent pile from Bldg 205.

1520 TAL97PL175S Suspected Solvent pile from Bldg 205 DRO/BTEX 8756



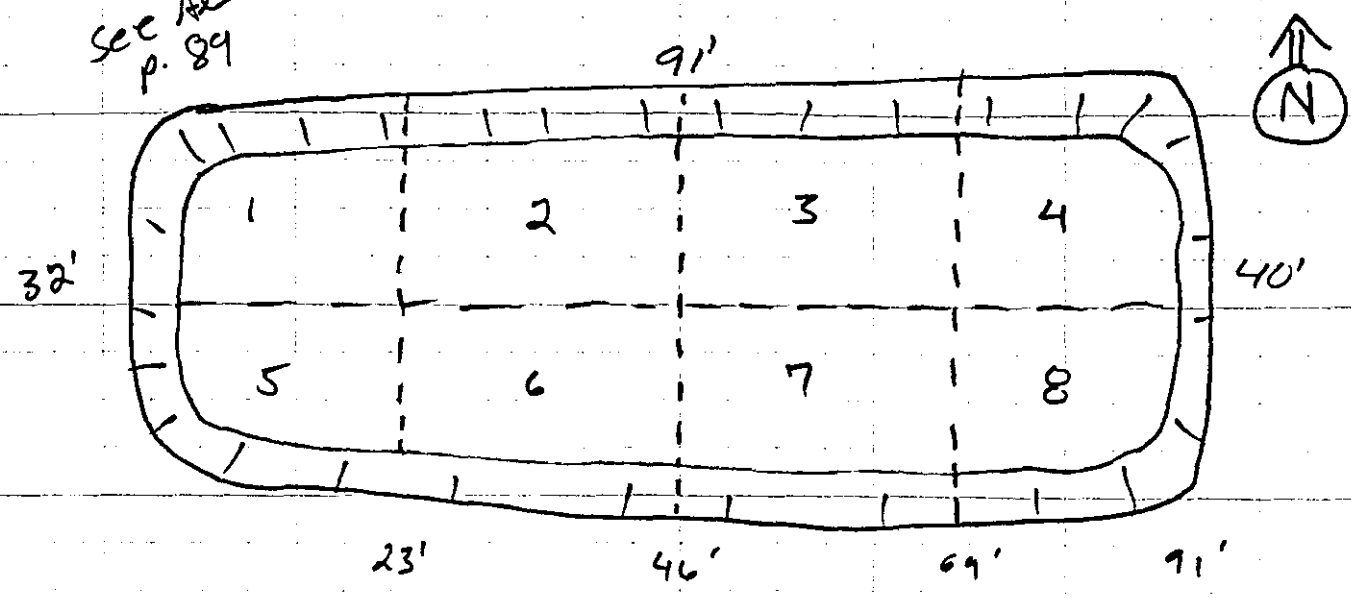
1525 Mel/Todd @ VORTAC
Bryan/Jim @ shop after tour
Rich/Chris covering ER piles.

Bob/Dave measure stockpile #1 for screening headspace samples and lab samples.

9/2/97 Dave Corbett (95)

STOCKPILE #1 - located North of Bldg 204

see Also p. 89



Headspace Samples Stockpile #1

1 = 47 ppm	5 = >1000 ppm
2 = >1000 ppm	6 = >1000 ppm
3 = 674 ppm	7 = >1000 ppm
4 = >1000 ppm	8 = 28 ppm

Field screening Samples Collected at depth of 4' bgs

Soil 11/20/97

See diagram above for sample location

TAL97PL1760	4' depth @ location #1	DRO/BTEX	87.37
TAL97PL1770	4' @ #2	DRO/BTEX	87.11
TAL97PL1780	4' @ #3	DRO/BTEX	87.13
TAL97PL1790	4' @ #4	DRO/BTEX	87.14
TAL97PL1800	4' @ #5	DRO/BTEX	87.24
TAL97PL1810	4' @ #6	DRO/BTEX	87.26
TAL97PL1820	4' @ #7	DRO/BTEX	87.41
TAL97PL1830	4' @ #8	DRO/BTEX	87.51
TAL97PL1840	4' @ #8 duplicate of 183		87.12

(96) Dave Corbett 9/2/97

1585 Met w/ Bryan / Jim Swalling

Issues:

✓ Fuel line penetration @ VOR / Bldg 600 any others.

✓ Tanks paint job - inspect - cover all. ~~b~~ fitting

✓ Tanks Decals H & D - label supply / return multiple locations (inside / out) 2 in / 2 out @ VORTAC.

✓ Shop door - replace bolt and clean shop

✓ Manifolds / MIKE - tank bottoms diesel mix w/ diesel = off spec. Not the same for gasoline. ANC vs. SEA

✓ Landfill letter - permission to use dump.

VORTAC Floor - Mop

9/8/97 ✓ VORTAC - pull old lines / ~~caulk~~

✓ Shop caulk wall penetrations ✓ cap end -

leave ✓ VORTAC - old fuel level (if not used by Willows) wall penetration - pull old wires back - leave box / conduit

9/8/97 ✓ VORTAC - return line from engine (small w/ ridges) how to connect. Hose clamp doubtful. Screw flex onto black hose.

Quarters - blade work area - use left over fill.

9/9/97 - seeding (hand scatter) Mel 9/8 9/9

- debris ✓ piping by tank farm

✓ behind shop

✓ - lift station

✓ - porches put back

✓ - plastic & sand bags.

- clean Bldg 100 #105

Helen

JAI / CAI - VOR engine start up. - Mechanic on Friday 4 hr. run.

VORTAC engine start - ~~Thursday~~ or Friday (9/4 - 9/5)

Willows - VOR / 3 days Shop / 2 days

Will ~~Stan~~ Santistevis

Red Lines - one CH_2OH / one to Jim

10 days after JAI second redline to Lillian

Red lines - tank location / valving / tank detail

leave copies

minute ✓ Stockpiles - secure sandbagged / roped.

removed from pole Bldg 600

· Antenna Pole sample results - will decide disposal ✓

✓ Bldg 30 - if sample results on foundation would cover w/ plastic.

NOB 9/6/97 ✓ VOR / FSS - rubber seals / envirotlex. caulked 9/6/97 9/6/97

✓ Dan Willows - will fix grnd ring @ VOR / ceilingometer @ FSS

✓ Backfill grey romex @ FSS

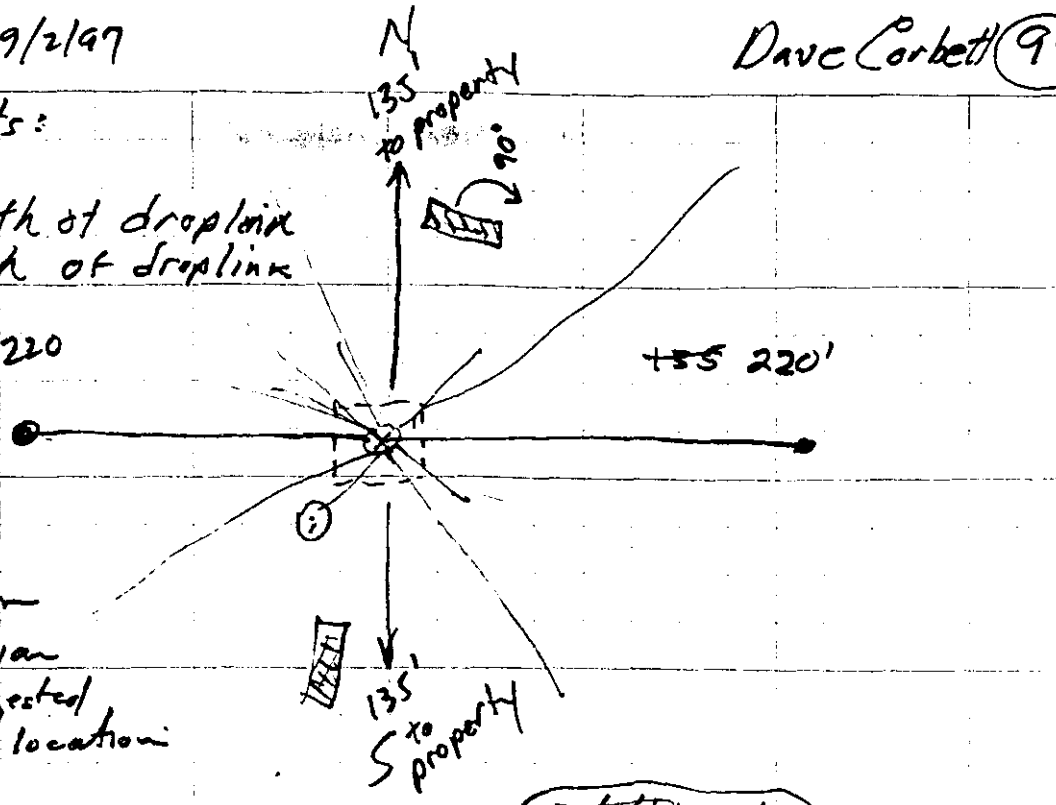
1600 ✓ FSS - throw breaker (W. side outlets) before digging

✓ Shop - cleaned up right to pipe rack. (see p. 91) ROADS to docking area / & around shop. Pat Moore

9/2/97 Dave Corbett (97)

NDB test pits:

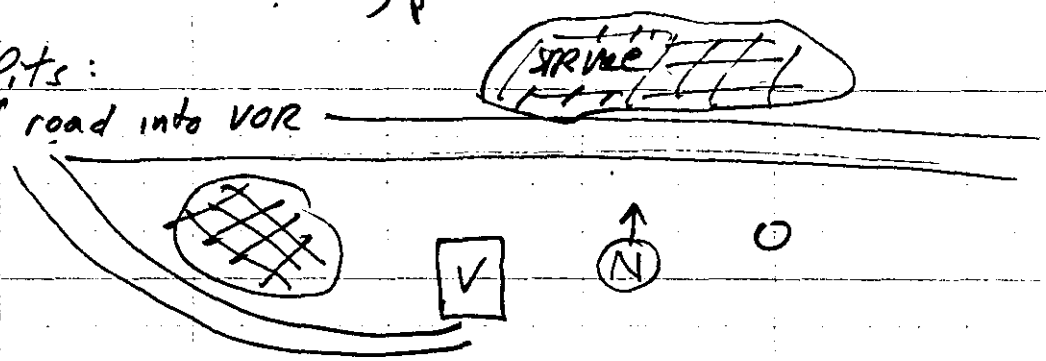
1 pit North of dropline
1 pit south of dropline



VORTAC Test Pits:

N. of road into VOR

1 N of road,
1 S of road



1620 Todd/Mel/Chris cover Stockpile #2 with blankets & sandbags.

1630 Bob/Dave finish screening of stockpile #1 (North of Bldg 204). Collect lab samples prepared earlier.

1700 Rich/Todd/Mel Chris begin covering Stockpile #1.
Jim Swalling returns to Quarters area after dropping Bryan @ airport.

1800 Bob/Dave ready samples/complete COC's go get ice

(98) Dave Corbett 9/2/97

1830 Bob/Dave pack coolers; check samples sent w/ COC's
Coolers will be taken w/ Bob when he leaves @ 8am
tomorrow 9/3/97.

1850 Pack some of our equipment for shipment to I-NE

1900 end of shift

9/3/97 Dave Corbett '99)

0615 - Breakfast - WTX cloudy low 40° high 56° F.

0700 W/S Mtg - Level B @ west lift station, buddy system each use of fuel transfer. Todd/Mel/Pete/Chris/Rich Ot₂ Bob/Dave
FAA rep - Jim Swalling
Schedule:
Rich to smooth out/blade ovorn area, abandon lift stations
Mel to finish connections on shop/VOR
Chris/Pete painting @ shop/FSS/VOR
Tentative: Mechanic for generator start up Fri 9/5
JAI Mon/Tues 9/8 9/9.

0800 Bob left site
Met w/ Jim S. - schedule of JAI moved up to Fri 9/5
Tanks installed/painted - finished by Fri - but Veeder-Root would be started but not finished. Concrete still to pour @ sump @ VORTAC
Rubber plugs for sump not available in Fairbanks/ANC - Keith trying to find some - may be 3-4 days.
FAA want mechanic onsite for JAI - Fri gen. startup.

0830 Called Anthony - 8260 resamples of suspected solvent stockpile collected yesterday (see p. 94 1400 hrs) taken along w/ 2 coolers to to Fairbanks by Bob. Bob will ship the 2 coolers to the Redding CA lab and send the 8260's to Anthony.

0900 Called Mike - discussed JAI schedule - FAA wants their mechanic on-site during JAI (see 0700 - 0800 hrs above). Veeder-Root system will not be completed by then.

0430 Pete painting @ FSS
Rich pumping H_2O out of lift station (west one) by Bldg. 105.
Todd/Mel gone to get fuel truck from Dale Erickson to do fuel transfers.
Chris painting @ VORTAC (including day tank vent).

1030 Rich (excavator) backfilling lift station near Bldg 105 after plugging 4 inlets w/ "THORITE" concrete patch (quick setting) by Thoro Products INC.

1115 Met w/ Jim to discuss schedule for JAI
Kieth Buchanon will do JAI (probably on Tues 9/9)
Jim talked to FAA Mechanic - doesn't want to do 4hr Gen test until VOR install complete (rubber boot for sump installed) because it is necessary to break fuel lines to put boot on sump. 4hr test scheduled for

(100) Dave Corbett 9/3/97

Monday afternoon - Mechanic arrives 10:30am - 11:00am on Monday 9/8.

Pete making up da sand bags for stockpile cover

1330 Todd gone to pick up Dan Willows @ lodge.

Jim/Bryans list: outstanding

Shop:

- Vecder root @ shop
- Clean/mop fix door
- Tamm decals painting

FSS:

- Find dry well
- remove temp fuel

VOR:

- Vedder-Root
- Clean/ mop floor
- Rubber boots for sump
- Concrete around sump
- Test pits

Quarters:

- steps back in place
- Grade roads
- Bldg 600 wall penetrations
- lift stations
- Bldg 30 demo
- Rope/sand bags on stockpile
- misc clean up (plastic/pipes)

NDB:

- Test pits

Other:

- Cut up/ dispose last 4 tanks
- Temp fuel area
- Wastes
- seeding

1400 Rock filling 3 inlet pipes w/ concrete and backfilling CAST lift station. (near Bldg 103) Smashed lift station culvert 18" bgs. backfilled over it.

9/3/97 Dave Corbett (101)

1500 Dan Willows/Todd hauling equipment to VORTAC

Mel/Chris - transferring fuel to new tanks. @ VOR, FSS & Shop. 450gal pump into Shop and VOR, 950gal pumped into FSS. 550 gal transferred to Dale Brickens truck (extra)

1530 Todd get Pete w/backhoe & Rich w/ backhoe to dig trench @ VOR for Veeder-Root conduit.

Mel priming shop tank. Just finished starting up the FSS new tank checked underneath bldg for leaks, ran furnace for 15min. Warming fine. FSS temp fuel pump to fuel truck.

1600 Mel/Dave/Rich working on restarting Shop Furnace.

Jim - daytank painting - gray paint on day tank upper RT corner

1630 - Met w/ Jim S. to discuss JAI schedule

Dan Willows @ VOR installing Veeder-root (outside)

1700 Traced power from Furnace (Shop) to Breaker box - to thermostat - furnace won't run.

Dave Corwin 9/4/97

0615 Breakfast - WOX - raining Low 38° high 46° F.
0700 H&S mtg: Jim Swalling FAA
- Dave CH2
OHM: Todd / Mel / Pete / Chris / Rich
0710 - Transferring fuel
- Willows @ VOR
- Pete / Chris ready to cut tanks from Terryung fuel storage.
Todd / Mel @ VOR

JHM out step back in place @ Quarters area.

Met w/ Jim - JHM (w/ FAA mechanic) set for Tuesday, Eng & test on Monday.

LEL on 1000g tank 15-B-019 0% LEL 20.7 O_2

0930 Went to VOR

1030 OHM / Chris / Pete cutting remaining tanks
15-B-019, 15-B-009, 15-B-010, 15-B-012
↑ Bldg 106 Bldg 600 ↑ Bldg 602

1130 JHM hauling above tanks, pressure washing / draining rinsate.

1200 Lunch

1240 Continue cleaning / cutting remaining tanks.

Rich smoothing out roads in quarters area.

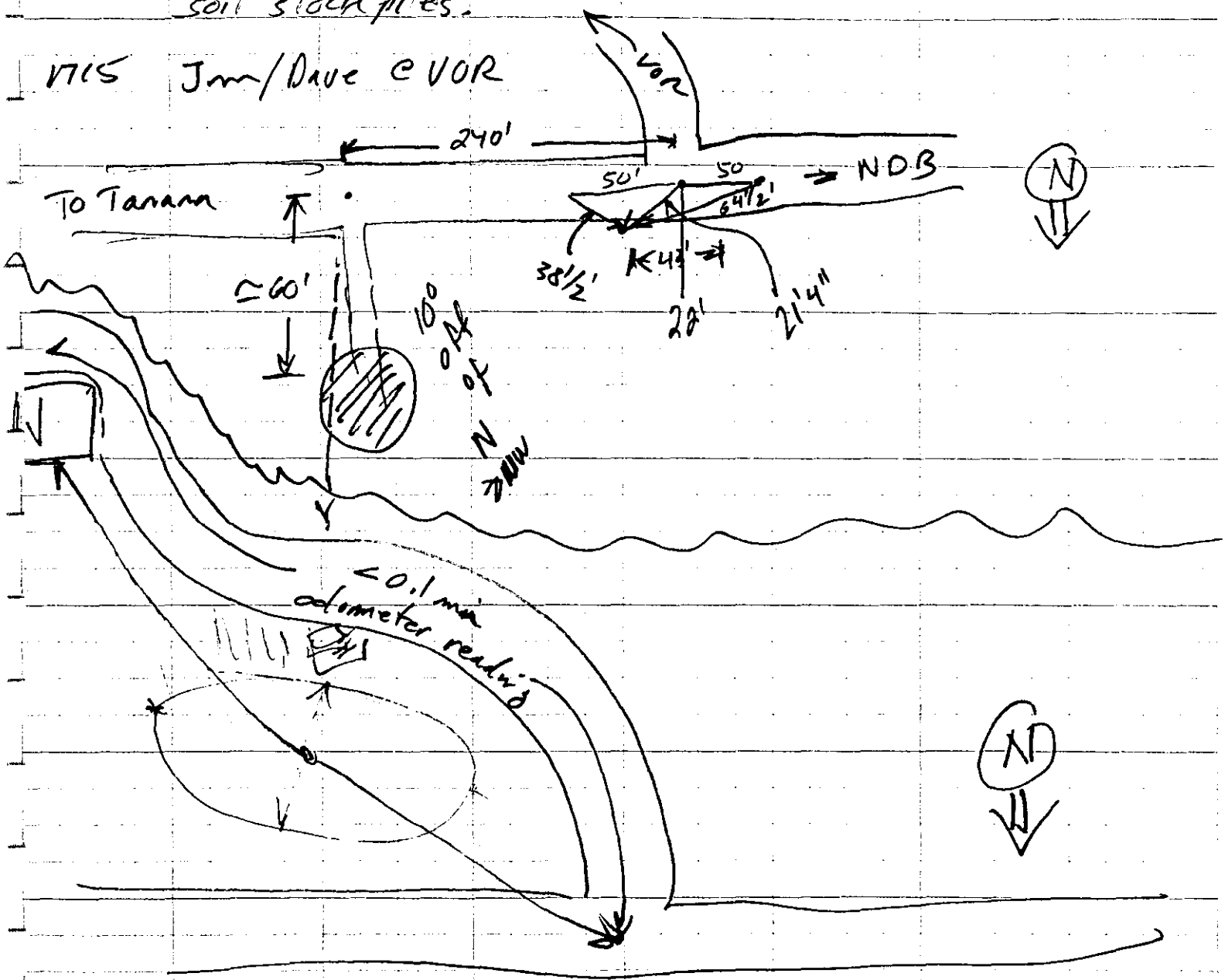
1315 Mel / Todd / @ VOR Dan Willows installing Veeder Root.

1500 Cleaning out cut up tanks draining rinsate.

1600 Met w/ Jim - discussed location of Veeder port & sump side - Jim will contact FAA mechanic for preference on location.

1700 Pete putting ropes between sand bags on soil stockpiles.

1715 Jim/Dave @ VOR



(104) Dave Corbett 9/5/97

0615 Breakfast WTX foggy low 29° high
0700 Meet w crew H/S mtg
- backhoe safety
- torch: safety
- moving steel to dump.
Schedule - OHM will put in ducnbills this am.
Test pits @ NDB / VOR This pm.
General cleanup / pack equipment.

Met w/ Jim S - discussed red line drawings - prefer using FAA drawings if possible.

Dave gave vehicle to Dan Willows - using ATV need to arrange to get sampling equipment to NDB / VOR

0830 Called Mike - sample jar(s) for TOC, Moisture, and specific gravity, # of containers. / Schedule JAI for Tues! Eng Test (4hr) on Monday.

0900 Checked w/ Tanana Air on Shelby Tubes - nothing yet

Hal will bring ~~grass~~ seed back ~~at~~ when he returns Mon. 9/8.

1000 Rec'd FAX from Mike - Manifest will arrive Fed X later today -

1030 Dave does spill reports on last 4 tanks (used for fuel storage).

1100 OHM (Rich / Todd) put plastic protector over flex hoses that feed from tank to underground flex. "Helical"

Pete / Chris picking up debris / haul to dump.

1200 Lunch

1300 Pete/Chris cleaning up debris / organizing ...

1330 Mel wrapping flex hose w/ Helical wrap.

Called Mike - discussed straps on FSS tanks - straps are 4" space between vents only 2½"

Pete/Chris putting straps on Shop tank.

As OHM went to put the straps & buckbills on they noticed that the space between vent/pipe on top of tank were to narrow to allow the 4" straps.

Drawings show 2" interstitial space vent (on spill containment end, however 4" vent was installed on tank.

1400 This was relayed to Jim S/Mike D. for future reference and it was decided to notch straps to fit.

1500 Chris notched straps/painted & installed @ Shop FSS & VOR

1600 Pete collecting debris & hauling to dump.

Todd/Mel packing equipment.

1700 - Jim S/Dave go to VOR To map out Test pit Locations.

106) Dave Corbett 9/6/97 BDS ⊙ Location Bulk Density Sampl
^NOTE

0605 - Breakfast WTX: Low 24°F high 58°F
HS Mtg

0

0730

0830 Sampled @ 1st hole North of VOR N of Road. Sampled 1-2' and 4-5' Permafrost. Sampled @ 5'.

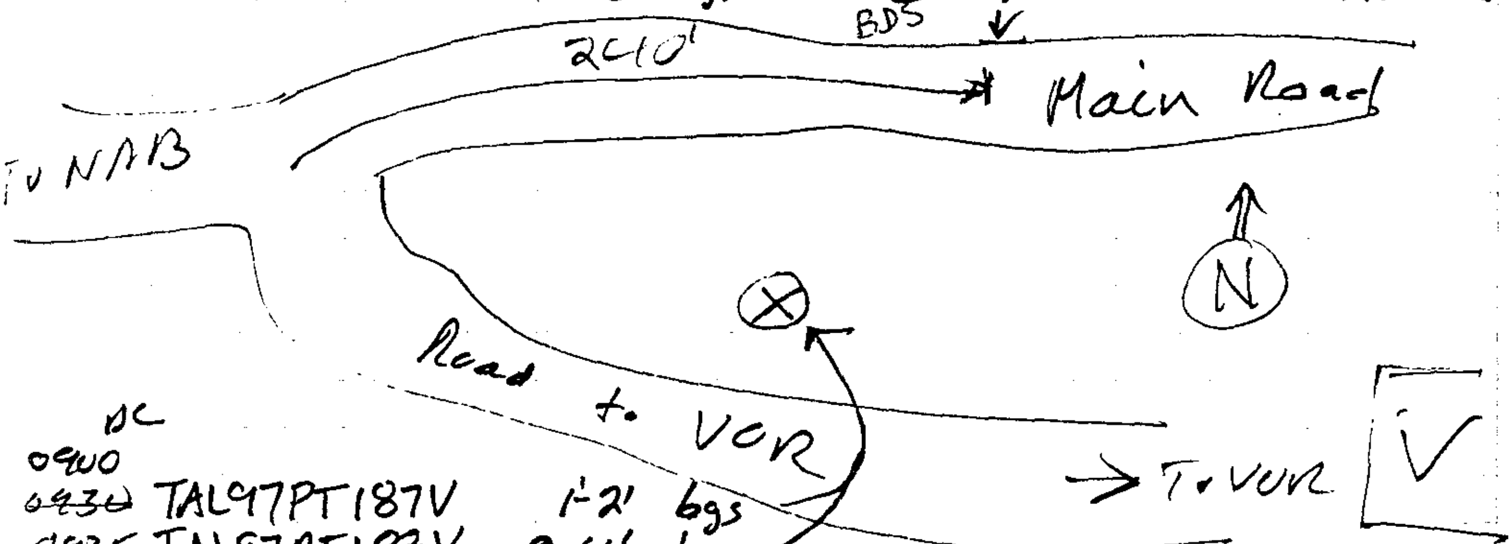
0835 ~~Air~~ Moved to Black spruce Forest on VOR Road.
NO H_2O

0900 2nd Location @ North Road < VOR Sampled 0'-2' and Permafrost @ 4'. No H_2O

Analysis TOC/S.Gm./ Moisture

0830 TAL97PT185V 1'-2' bgs → 1.5'

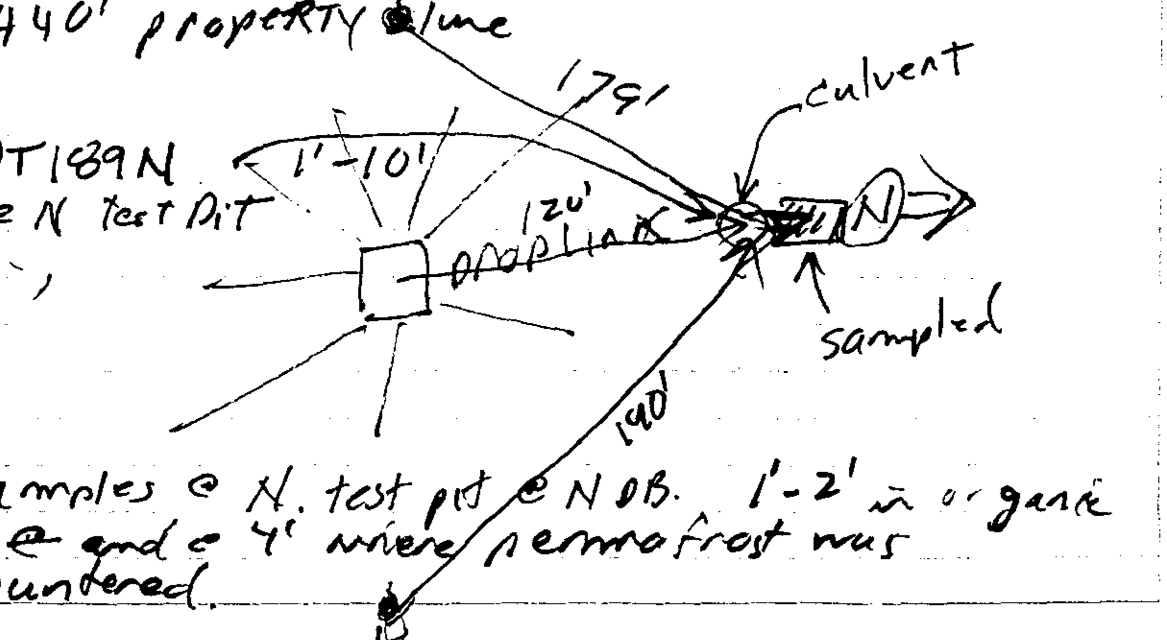
0835 TAL97PT186V @ 5' bgs



DC
0900
~~0930~~ TAL97PT187V 1'-2' bgs
0935 TAL97PT188V @ 4' bgs

0910 OHM tries to prime tank @ VOR - checking for air in lines. NO.
270 X 440' property line

0945 TAL97PT189N 1'-10'
located @ N test pit



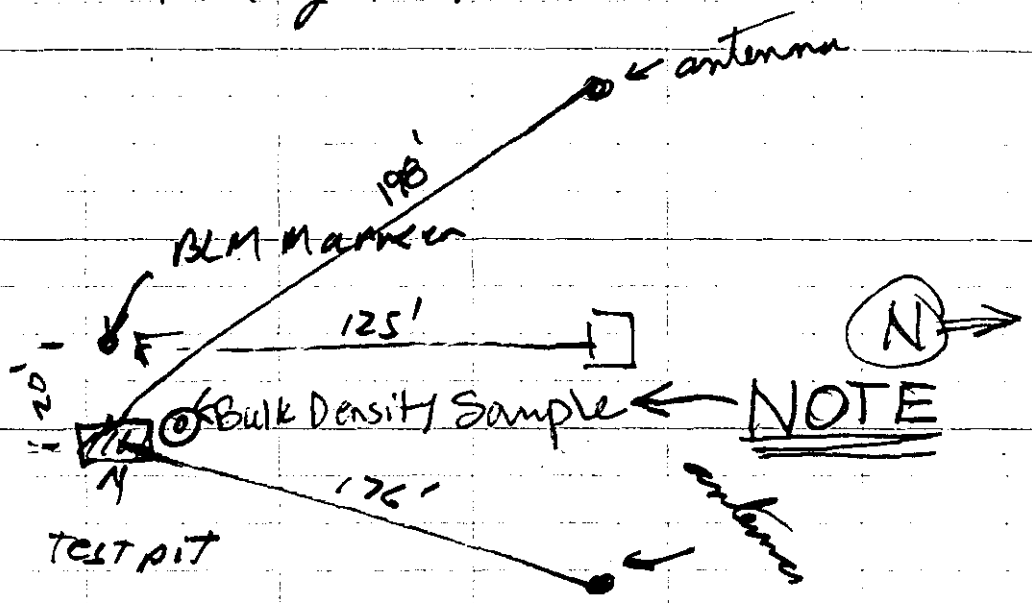
0930 Took samples @ N. test pit @ NDB. 1'-2' in organic Layer @ and @ 4' where permafrost was encountered.

0940 Jim/Dave/Mel @ NDB
- go 120' North of Dropline + 20' West due to 10' all sandy silt
sampled @ 10' depth

0945 Jim S/Dave C layout S. Test pit @ NDB.

1000 Located BLM monument

Mel dug 10' Trench



1005 Hit grind rod @ South test pit - will leave exposed for GAL - Dan Willows will fix
TAL97PT190N 1'-2' @ South Test Pit
Sampled organic layer 1'-2' depth and @ 10' - sandy silt all the way
TAL97PT191N @ 10' bgs South Test Pit.

1010 Finished test pits @ NDB.

1100 Went thru punch list w/Todd
- Pat Moore will finish road grading @ quarters.

1115 Fittings adjacent to swivels - will be added by Mel on Monday, 9/8.

1130 · Things to do:
✓ 1) Measurement @ NDB 3 VOR Test pts Dave/Jim
✓ 2) Clean off tanks @ shop VOR/PSS. Mel

(108) Dave Corbett 9/6/97

9/9 ✓3) Clean Bldg 100/105/VOR floor mops (Dave/Helen)
9/9 ✓4) Pat Moore to smooth out VOR area (Quarters).
9/8 ✓5) Crawl space inspection @ FSS (Mel)
9/9 ✓ 6) seeding (Mel)
9/9 ✓ 7) red line drawings (Dave)
9/8 ✓ 8) Signs/posts (Dave) (& Mel)
9/8 ✓9) pull old lines @ VOR remove temp fuel (Mel)
9/8 ✓10) Final connections on gen @ VOR. (Mel)
9/8 11) Sample results on Red/White poles. (lab) H_2O
Jim on 12) Equipment on State Lands (Fuel tanks) (Mel) Todd
9/7 ✓13 Shop VR system (Dave)
9/9 ✓ 14) Trash e shop (Dave)
9/9 ✓ 15) Mels tools @ shop (Mel)
9/8 ✓ 16) Bentonite (Dave) Pat Moore
17) Move ATT Trailer (Dave/Todd/Mel & Jim)
9/7 ✓ 18) Grnd @ FSS
9/8 ✓ 19) Overfill valve @ shop / 20) Adapter to fuel trailer tanks.
9/9 ✓ 21) Ropes on stockpile ER all

1300 Todd/Mel/Pete @ dock area
- Todd labeling waste drums
- Mel covered Kasher Pb boxes from Bldg 80

1500 Decon backhoe/excavator

Rich leaves for home/also King Salmon

1600 Manifest completed - for Jim to sign.

1700 Jim/Dan W/Dave go to NDB site - repaired grnd on radial wire dug up during test pit excavation.

1800 Dan installing VR @ shop

1900 end

Rinsate blanks collected @ VOR Test Pit
1030 TAL97RB192 - 2 40ml VOA GRO/BTEX/8260
- 1 1l amber w/ H_2SO_4 - DRO
- 1 1l poly w/ HNO_3 - Metals

9/7/97 Dave Corbett (109)

0630 - Breakfast WTX: partly cloudy Low 36° high 50°F

0730 Dan @ Shop installing Veeder-Root

Grnd wire (no rods) "04" Cu wire will be laid in hand dug trench @ FSS - Grnd. to tank.

Called Todd - re grnd @ FSS

Met w/ Dan - he will be finished about noon - charter flight to pick him up @ 3pm.

1200 Packed equipment @ Bldg 100

1300 Met w/ OHM to discuss punch list.

Went to VOR for final measurement & check progress - punch list

1430 NDB - same

1530 Met Pat Moore/city - [illegible] out [illegible] tomorrow.

DCorbett started [illegible] warning signs [illegible]

1630 W/ Mel (OHM) doing punch list see p. 108 -

1830 Finish @ Quarters cleaning lady set for tomorrow.

1930 Pack equipment

2000 end

Wave Corbett 4/8/97

0730 Breakfast - WJX: clear Low 40°F high 60°F.

0800 Packed equipment

Met w/ Jom on punch list items

1000 Met Mel - Mel to VOR w/ couplers to fix lines

Met Benny (FAA Mechanic) Gen Test @ 1:00 pm.

Installed warning signs @ soil stockpiles.

Packed equipment

D Corbett @ VOR for Test - photographed sump/piping/Tank @ VOR.

Photographed day tank & fitting in generator bldg.

1300 Gen Test -
Checking on Punch list items.

1700 Back to VOR - pump lost prime

1900 DCorbett/Jom S Mel back to prime pump.

2030 end

Dave Corbett (112)

Save Space

(112) Dave Corbett 9/9/97 X = done 9/9/97

Kieth Buchanan FAA
Jim Swalling FAA
Benny Williams FAA Mechanic
Dave Corbett CH2M HILL

0930 VOR:

NOT TRUE — 9/9/97 done

1) (a) Kieth - if return line outside brake - day tank would siphon out - call for fuel and empty 500 gal tank. (b) Need anti siphon valve on high point of ~~return line~~. (c) Alt is to block access (people & moose) from crossing lines between tank & VOR Bldg.

Mel will use Unistrut to block — Complete by Mel 1235

✓ 2) Kieth - need hasp/padlock on sump.

✓ 2a) Mop Floor

Mel/Dave issue # 1 - no siphon will occur thru pump.

X ✓ 3) ~~Kieth~~ - seal for sump lid to eliminate H_2O in sump indicating leak from float on VR. Requires design change. (not in scope) Height of sum Design Issue

X ✓ 3a) Lock supplied by SSC @ FAA

X ✓ 4) Handles on tank valves need to be removed. Jim concerned about what happens to handles if removed.

FAA ○ ✓ 5) Filler adaptor for fueler to ensure capable of fueling

✓ 5a) Dipstick/chart - ✓ scope Todd > Fairbanks > Benny

X 9/9/97 ✓ 6) Sealant on pipe threads on VR system (inventory probe and interstitial probe boxes. ✓ specs. Epoxy paint

X 9/9/97 Mel ✓ 7) Tie turnbuckles so vandals could not remove. Mel ~~doesn't have~~ has equip. to fix - Benny offered shop equip if present. Or use locknuts on turnbuckle.

FAA ✓ 8) VR not hooked up to phone - Jim - phone line ordered.

FAA Design ✓ 9) Pumps to run off generator - so pumps on day tanks won't run unless gen running. Tie pumps to generator power.

FAA Issue → ✓ 9a) Need circuit breaker to isolate day tank pumps.

1030 VOR - inside

9/9/97 Mel ✓ 10) Decrease bend in fuel line (1/4" neo/rub) by tying hoses together. (4-8)? → to Jim

✓ 11) Info Manual (3 copies) VR system (Dan) Day Tank system.

✓ = on FAA LIST

~~12)~~ Outside VR alarm lite - Jim called Dan - lite NOT hooked up. Decision by FAA. in 1991

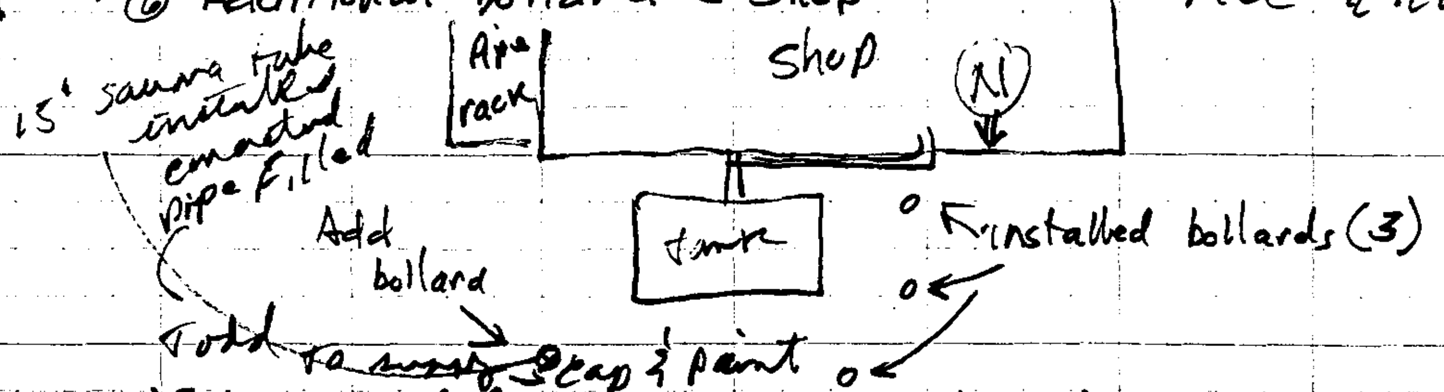
9/9/97 Dave Corbett (113)

1130 @ FSS

- ⊗ Ceilingometer fix OK.
- ⊗ noted VR installed @FSS after new bldg built.
- ○ ✓ (3) - dipping tanks. Need dipstick for 1000gal @FSS. OHM
- ○ ✓ (4) - fuel chart OHM for dipstick.
- X ✓ (5) - Turnbuckle locked on straps. Mel 9/9/97
- X ✓ (6) - Spill containment box. (FAA)
- ⊗ - Temp of fuel / preheat fuel to furnace. - OK #1 fuel shouldn't gel. FAA worry
- X ✓ ⊗ Valve handles to go ~~on~~ FAA Safety Board ~~Benny~~ 3900.1A FAA reg
- X ✓ ⊗ label valve handles w/ tags. FAA Benny on security.
- ✓ (8) Fueler adaptor for 1000gal same as other 2 tanks. Benny
- 9/9/97 (9) Remove H_2O from spill containment X Mel 9/9/97
- FAA ~~(10)~~ Install VR @ New shop (mechanic wanted VR - Keith all tanks have VR)
- X ✓ (11) Locks on fuel tanks SSC/FAA

1200 Shop -

- X ✓ (1) H_2O in spill containment Mel 9/9/97
- X ✓ (2) Turnbuckle issue Mel 9/9/97
- X ✓ (3) Valve levers (FAA) Benny
- X ✓ (4) Locks (FAA) spill containment Benny
- 9/9/97 ✓ (5) Paint VR bare threads (between boxes on probes) and
  9/9/97 VR on rear outside wall penetration feeding into braided brass conduit Mel completed.
- X ✓ (6) Additional bollard @ Shop Mel 9/9/97



- ⊗ Benny - will furnace pump be adequate
  A2VA-7116 Suntec 3 gal/hr 100-150 psi 3450 rpm
- ✓ (7) Phone lines needed.
- ⊗ Outside alarm lite @ VR system. - see VOR - FAA decided not to put lite w/ promo
- ○ ✓ (8) New dipsticks/charts for shop (Todd)
- ⊗ FAA equip on ST land moved by FAA before project.
- ✓ (10) VR manuals

X = eliminated

(114) Dave Corbett 9/9/97

1315 ↓ 1345 Went over JAI PUNCH list see p. 112-113

Signed JAI cover sheet 9/9/97

1400 Punch list / Dave / Mel

1800 Dave / Mel go thru punch list - items completed listed on previous page

Finish getting equipment to Tanana Air.

Cleaning bldg 100/105 104.

No Shelby tubes!

2000 end

9/10/97 Dave Corbett (115)

0615 - Breakfast WTX: Partly Cloudy

0800 - Clean out bill w/ Starr's lodge

- " " " w/ Dale Erickson / Tanana Comm. Co.

1000 Arrange for Dale to get Equipment to Carlisle Trucking.

1030 - Go to Airport to go to SEA.

1130 Arrive @ Home

off 9/11/97 Dave Corbett

(116) Dave Corbett ☆ 9/12/97

0800 Copies of notes to D. Corbett / all documentation
Original in overnight to M. Bennett / NWC.

1200 done!

1300 Expense report

PHOTO LOG 7AA TANANA 8/12/97 Photo log #1

Roll # 1 TANK 15-B-002 / Set up for removing soil top of tank 8/12/97 Facing EAST

Photo #2 - TOP of TANK 15-B-002 exposed, OHM dismantling fuel Lines (1/2") from tank to building FACing South

Photo #3 - Removing TANK 15-B-009 from perch / stank next to bldg 600 Facing North (AST)

Photo #4 OHM dismantling the Tank Stand at bldg 600 Facing West (AST) 8/12/97

Photo # 5 - 500gal Temporary tank behind FAA shop - facing West 8/12/97

Photo #6 - Exposed tank #15-B-017, Bldg 103 - Facing South. 8/12/97

Photo #7 - Pulling Tank 15-B-017 @ Bldg. 103 - Facing South. 8/12/97

Photo #8 - Exposed Tank 15-B-011 @ Bldg 30 - Facing East 8/12/97

Photo #9 - Pulling tank 15-B-011 @ Bldg 30 - Facing East 8/12/97

8/13/97

roll #1

Photo #10 - Exposing top of 15-B-018 TANK. Facing East with backhoe

Photo #11 - top of TANK 15-D-008 exposed facing NE

Photo # 12 - Top of Tank exposed 15-B-007 @ Bldg. 300 - facing West

Photo # 13 - Excavation @ Bldg 103 - facing North.

Photo # 14 - Excavation @ Bldg 30 Tank #15-B-011 - Looking South.

Photo # 15 - Top of tank @ Block 3 Lot 2 #15-B-013 - Looking West.

Photo # 16 - Backfilling @ Bldg 103 w/excavator. facing NE.

Photo # 17 - Top of exposed tank @ Bldg 101 - facing south

Photo # 18 - Top of exposed tank @ Bldg 204 - facing east TANK #15-B-003

Photo # 19 - OHM (Rich) burning bolts off manhole (lower) on bottom of Tank # 15-B-015 (20,000gal) facing NE. 8/14/97

Photo # 20 - Bldg 602 showing site of former shed removed 8/13/97 evening, river in Background - facing SW.

~~Photo # 21 Time Transfer fuel setup @ Bldg 106 - facing West~~ DC 8/14/97

Photo # 21 Time 1115 8/14/97 - OHM preparing to pull pump from the western most inactive well adjacent to Water Treatment Bldg. Facing South.

Photo # 22 Time 1122 8/14/97 - OHM (Pete/Mel) removing well pipe (steel) from west well (inactive). Facing South.

Photo # 23 Time 1204 8/14/97 - OHM (Mel/Pete) pulling PVC pipe from eastern most of the two inactive wells adjacent to. WTreat. BLDG #602 - Facing East.

Photo # 24 OHM using backhoe to expose pipeline between Bldg 602 and Bldg 103.

end of roll 1

Photo Log #(2) Dave Corbett

Photo #1 roll 2 Time 1400 8/14/97 - Fuel distribution line between Bldg 602 and Bldg 103. Facing West.

Photo #2 roll 2 Time 1424 8/14/97 - Bldg 103 1¼" pipe from Bldg 602 ~~Tee~~ ells to 2" line running ~~north~~ to Bldg 103. Facing North.

Photo #3 Time 1426 8/14/97 - 1¼ to 2" Tee @ Bldg 103 - Facing West.

Photo #4 roll 2 Time 1448 8/14/97 - Trench running E-W and Tee to Bldg 104 facing West.

Photo #5 roll 2 Time 1457 8/14/97 - Valve Pit on 2" o.d line running N-S half way between Bldg 105 & Bldg 100. facing east.

Photo #6 roll 2 Time 1510 8/14/97 - Trench w/ 2½" o.d. pipeline running E-W from Bldg 600/Tank Farm area toward valve box half way between Bldg 105 & Bldg 100. facing East.

Photo #7 roll 2 Time 1610 8/14/97 - Pipeline running E-W south of Bldg 105 104, & 103. facing east - ditch on right to Bldg 30. Approx 300' to Bldg 602.

Photo #8 roll 2 Time 1625 8/14/97 - ~~E-W~~ N-S trench, west of bldg 100, 105 (on left) facing South (Valve box halfway down trench).

Photo #9 roll 2 Time 1630 8/14/97 Valve box located ½ way ~~in~~ N between Bldg 100 & 105 (west side) - facing East.

Photo #10 roll 2 Time 0900 8/15/97 - Temp fuel storage area for drums bermed and lined - facing North.

Photo #11 roll 2 Time 0920 8/15/97 - Bldg 106 Tank 15-B-019 begin excavation facing SE.

Photo #12 Time 0930 8/15/97 - Exposed tank still in place @ Bldg 106 Tank # 15-B-019 facing SE.

Photo #13 Time 0933 8/15/97 - Lifting tank 15-B-019 @ Bldg 106 (1000gal) facing SE.

Photo #14 Time Not Used 11/20/97 RW

Photo #15 Time 1030 8/15/95 Tank 15-B-002 (Bldg 205) - Exposed tank in place facing South

Photo #16 Time 1055 8/15/95 Pulling tank 15-B-002 - facing South.

Photo #17 Tim 1145 8/15/97 - Exposed tank 15-B-008 in place ready to pull. facing SE.

Photo #18 Time 1147 8/15/97 - Tank 15-B-008 being pulled. facing SE.

Photo #19 Time 1150 8/15/97 - Sump bucket for draining pipelines.

Photo #20 Time 1305 8/15/97 - Sump bucket w/pipeline in bucket. Facing SE

Photo #21 Time 1400 8/15/97 - Pipeline between Bldg 105 & Bldg 30 - facing SW (line broken during excavation 2.5' bgs - draining fuel/H_2O

Roll 2

Photo Log

Photo #22 · Time 1440 - 8/15/97 - Broken pipe beneath Bldg 30 while excavating pipeline · facing SW. roll 2

~~Photo # 23 - Time 1455 - 8/15/97 - DC 8/16/97~~

Photo # 23 - Time 0800 8/16/97 - Pete & Chris (arm) getting setup in Lower B for cleaning Tanks 15-B-014, 015, 016. facing West.

Photo # 24 - Time 0810 8/16/97 - Removing Tank 15-B-012 @ Bldg 602 (Water Treatment Bldg). Facing SE. roll 2

Photo # (roll 3	Time 0830 - 8/16/97 - Excavating soil from pipeline @ 6' to 20' on trench (see drawing p.16) FACING SE 11/21/97
Photo # 2	Time 0845 - 8/16/97 - Excavation @ hot spot @ 100'C" along fuel pipeline (see p.16) - facing East (near Bldg 103)
Photo # 3	Time 1130 8/16/97 - Testing reach of large excavator to see if it can push over Tanks 15-B-014, 015, 016. FACING WEST AND 11/21/97
Photo # 4	Time 1205 8/16/97 - Tank 15-B-016 pushed over. Facing West
Photo # 5	Time 1215 8/16/97 - Tank 15-B-015 pushed over. Facing West
Photo # 6	Time 1220 8/16/97 - Tank 15-B-014 pushed over Facing West
Photo # 7	Time ~~+2~~ 1415 8/16/97 - Tank 15-B-005 in place, Facing ~~NW~~ S
Photo # 8	Time 1416 8/16/97 - Tank 15-B-005 being pulled. Facing NW
Photo # 9	Time 1452 8/16/97 - Excavating @ Tank 15-B-013 facing West.
Photo # 10	Time 1523 8/16/97 - Pulling Tank 15-B-013 facing West
~~Photo # 11~~	pc 8/16/97
Photo # ~~12~~ 11	Time 1735 8/16/97 - Block 3 lot 2 (T# 15-B-013) backfilled. Facing S.
Photo # 12	Time 1805 8/16/97 - Excavation @ Bldg 106. Facing SE.
Photo # 13	Time 0735 8/17/97 - Bldg 101 - backfilled excavation. Facing SW
Photo # 14	Time 0740 8/17/97 - Bldg 100 - removing surface soil. Facing West.
Photo # 15	Time 0744 8/17/97 - Bldg 30 - backfilled excavation. Facing South
Photo # 16	Time 0745 8/17/97 - Pulling tank 15-B-007 @ Bldg 300. Facing SE
Photo # 17	Time 0855 8/17/97 - Pulling tank 15-B-004 @ Bldg 102. Facing West
Photo # 18	Time 0920 8/17/97 - Pulling tank 15-B-006 @ Bldg 100. Facing NW
Photo # 19	Time 1100 8/17/97 - Pulling tank 15-B-018 Bldg 104 Facing SE
Photo # 20	Time 1400 8/17/97 - Excavation @ Bldg 100 showing pipeline trench nearby - facing NW.
Photo # 21	Time 0800 8/18/97 - Tank 15-B-001 exposed (Shop) Facing North
Photo # 22	Time 0802 8/18/97 - Tank 15-B-001 exposed (Shop) Facing East
Photo # 23	Time 0845 8/18/97 - Pulling Tank 15-B-003 @ Bldg 204. Facing West
Photo # 24	Time 0855 8/18/97 - Pulling Tank 15-B-001. Facing South

④ Photo log

15-B-001 — Tank 15-B-1 BMP 11/21/97

Photo # 1	0920	8/18/97	Southend of tank?	Facing N
Photo # 2	0922	8/18/97	North end of tank	S
Photo # 3	0924	8/18/97	West side tank	E
Photo # 4	0926	8/18/97	East side tank	W
Photo # 5	0928	8/18/97	Botton of tank	
Photo # 6	0955	8/18/97	Cutting hole in 15-B-001	Facing South.
Photo # 7	1045	8/18/97	Top of tank 15-B-016	Facing South
Photo # 8	1046	8/18/97	Bottom of 15-B-016	North
Photo # 9	1047	8/18/97	North side 15-B-016	East
Photo # 10	1048	8/18/97	South side 15-B-016	West
Photo # 11	1150	8/18/97	Cutting tank 15-B-016 in half.	Facing SW.
Photo # 12	1330	8/18/97	Top of 15-B-015	Facing S
Photo 13	1331	8/18/97	Bottom of 15-B-015	N
Photo 14	1332	8/18/97	East side of 15-B-015	W
Photo 15	1333	8/18/97	West of 15-B-015	E
Photo 16	1334	8/18/97	Top of 15-B-014	S
Photo 17	1335	8/18/97	Bot of 15-B-014	N
Photo 18	1336	8/18/97	East of 15-B-014	W
Photo 19	1337	8/18/97	West of 15-B-014	E
Photo 20	1340	8/18/97	Cutting 15-B-016.	SE
~~Photo 21~~ DC 8/18/97				
Photo ~~22~~ 21	1515	8/18/97	Overexcavating @ Bldg 102 15-B-004.	Facing NW
Photo # 22	1615	8/18/97	Cutting Tank 15-B-015 (Tank 016 in foreground cut in pieces. 500gal tank in background.	Facing NW.
Photo # 23	1730 DC 8/18/97	8/18/97	Bldg 102 15-B-004, backfilling.	Facing NW
Photo # 24	~~1720~~ 1810	8/18/97	Tank 15-B-015 cut in half	FACING W AMS 11/21/97
Photo # 1	0920	8/19/97	Pipeline trench overexcavated 1-7½'.	Facing W.
Photo # ~~3~~ 2 DC 8/21/97	1440	8/20/97	Pipeline trench (N-S, between State shop and FAA Shop, Mel compacting @ 832' marker.	Facing S
Photo # ~~4~~ 3	1445	8/20/97	Temporary fuel storage N of STATE shop	Facing NW
Photo # 4	1530	8/21/97	OHM @ test pit #1 Tank Farm.	Facing SW.
Photo # 5	1630	8/21/97	Test pits # 1 & # 2.	Facing west
Photo # 6	0900	8/22/97	Tank 15-B-018	East side
7	0900	8/22/97	Tank 15-B-018	West side
8	0901	8/22/97	Tank 15-B-018	North end
9	0901	8/22/97	Tank 15-B-018	South end
10	0902	8/22/97	Tank 15-B-018	Bottom

ROLL

Photo log

Photo 12	0925	8/22/97	OHM cleaning inside Tank 15-B-018	
Photo 13	1130	8-22-97	Tank 15-B-017	West side
Photo 14	1131	8-22-97	Tank 15-B-017	East "
Photo 15	1132	8-22-97	15-B-017	North end
Photo 16	1133	8-22-97	15-B-017	South end
Photo 17	1134	8-22-97	15-B-017	Bottom
Photo 18	1255		West side tank	15-B-004
Photo 19	1255		East	
Photo 20	1255		North	
Photo 21	1256		South	
Photo 22	1256		Bottom	
Photo 23	1256		USTs ready to be cut up. Facing South	
Photo 24	1257		Tank cut up area. Facing South	
Photo 1	1300		Tank 15-B-006	West side
2	1300			East
3	1301			North
4	1301			South
5	1302			Bottom
6	~~1302~~ 1440		Tank 15-B-007	South side
7	1441			North
8	1441			East
9	1442			West
10	1442			Bottom
11	1545		Facing ~~North~~ Facing East Tank 15-C-001	Airport Rd Sample Location
12	~~1545~~ 1548		Headspace Sample @ 15-C-001	N. Side discharge
13	1550		Tank 15-B-013 -	North side West Side
14			-013 -	South side East Side
15	1546		-013 -	East side North End
16			-013 -	West side South End
17			-013 -	Bottom
18	1605	8/22/97	Temporary fuel supply @ FSS. Facing West	
19	1635	8/22/97	North side	Td 15-B-005
20	1635	8/22/97	South "	Td 15-B-005
21			East	15 B-005
22			West	15 B-005
23	1640		Bottom	15 B-005
24	1645	8/22/97	Misc. View of Yukon River	
25	1645	8/22/97	Misc View of Yukon River	

Roll #5

Roll #6

11/21/97

(6)

Photo #	Time			
1	0845	8-23-97	N	Tank 15-B-019 (1000 gal)
2	0846		S	-019
3	0848		E	-019
4	0849		W	-019
5	0850		Bottom	-019
6	0945	8/23/97		Pipeline on South side of satellite dish
7	0955	8/23/97	N	- plugged pipeline (grouted)
8	0956		S	Tank 15-B-002
9	0955		E	
10	0958		W	
11	0958		Bottom	
12	1000	8/23/97		Grouted pipeline on N. side of satellite dish
13	1001	8/23/97		Grouted pipe under ST. shop fuel tank facing W
14	1002	8/23/97		Grouted pipe under ST shop facing E.
15	1050	8-23-97		Tank 15-B-003 N
16	1051	8-23-97		15-B-003 S
17	1052	8-23-97		15-B-003 E
18	1053	8-23-97		15-B-003 W
19	1054	8-23-97		15-B-003 Bottom
20	1130	8-23-97		Tank 15-B-008 West
21	1131	8-23-97		" 15-B-008 East
22	1132	8-23-97		" 15-B-008 North
23	1133	8-23-97		" 15-B-008 South
24	1134	8-23-97		" 15-B-008 Bottom
25				EXCAVATOR CAT6 PICTURE

side/end

Photo #	Time		
1	1325	8-23-97	Tank 15-C-001 FSS - exposing tank. Facing W
2	1345	8-23-97	15-C-001 FSS ready to pull Facing W
3	1352	8-23-97	Pulling tank 15-C-001 FSS. Facing West
4	1430	8-23-97	Tank 15-B-011 - West side
5	1435	8-23-97	" East side
6	1437	8-23-97	" North end
7	1440	8-23-97	" South end
8	1440	8-23-97	" Bottom
9	0830	8-24-97	Set up Temp Fuel CVONTAC - facing East
10	1300	8/24-97	OHM excavating 15-A-001. Facing East
11	1315	8-24-97	Exposed tank ready to pull 15-A-001 NW/NE
12	1316	8-24-97	Pulling 15-A-001 Facing NE

Roll 8

Roll 8 continued on p. 7 of Photo Log

7) Photo log

13	1615	8-25-97	OHM setting tubes for bollards @ VORTAC. Facing NE
14	0800	8-25-97	Tank 15-B-001 (VORTAC) cutting tank East side
15	0801	8-25-97	Tank 15-A-001 - West side
16	0802	8-25-97	Tank 15-A-001 North end
17	0803	8-25-97	Tank 15-A-001 South end
18	0804	8-25-97	Tank 15-A-001 Bottom
19	1030	8-25-97	Test holes on West side Bldg 205 Facing North.
20	1145	8-25-96	New tank @ VORTAC; pouring bollards. Facing W
21	1650	8-25-96	2nd tank (in place) @ FSS beneath bldg - Facing W.
22	1655	8-26-97	Bldg 30 removing asbestos/Pb
23	1700	8-26-97	" " "
24	1715	8-26-97	" " "
			END OF ROLL - SKY VIEW
25			
1	1145	8-26-97	15-D-001 BK @ Airport Rd - starting to pushed over Facing W
2	1145	8-26-97	15-D-001 " " pushing Facing W
3	1145	8-26-97	15-D-001 " " over Facing W
4		8-26-97	15-D-001 CUTTING BK Tank - FACING South
5		8-26-97	15-D-001 CUTTING Head - FACING North
~~5~~	~~1030~~	~~8-27-97~~	~~Demolishing Bldg 602 (Facing S)~~
6	1031	8-27-97	Demolishing Bldg 602 (" ")
7	1035	8/27/97	Demolishing Bldg 602 (Facing S)
8	1040	8-27-97	Setting up pressure test @ Bldg 205
9		8/27/97	ENSYS FIELDSCREENING LAB
10		8/27/97	Asbestos Removal Bldg 30 Facing S
11		8/27/97	Bldg 105 Stockpile/Trench Facing W
12		8/27/97	Tank 15-D1 Scrap Metal Facing S
end of roll 11	13	8/27/97	Asbestos Stockpile Bldg 30 Facing SW
	14	8/27/97	Warning Sign, Bldg 30, Facing S
1	1100	8/27/97	Stockpile N of Bldg 205 (Tank/pipeline excav.)
2	1140	8/27/97	Stockpile N of Bldg 102 (800 yd³)
3	1600	8/27/97	Soil Stockpile between 104 & 105 Facing N
4	1530	8/27/97	Soil Stockpile @ South of Bldg 105 Facing N
5	1600	8/27/97	Soil Stockpile @ Bldg 30 drench Facing N
6	1630	8/27/97	Soil Stockpile Headspace (S of Bldg 300) Facing W.
7	1635	8/27/97	Soil Stockpile N. of Bldg 600 Facing S.
8	1645	8/27/97	Soil Stockpile between #100 & 106 Facing E.
9	1649	8/27/97	Soil Stockpile between #100 & 101 Facing E.
10	1688	8/27/97	" " N. of Bldg 101
11		8/28/97	Soil Stockpile S. of Bldg 104, Facing S
12		8/28/97	Soil Stockpile S of Bldg 105, Facing E

Continued in Logbook #2

Photo Log cont'd (8)

13	8/28/97	Bldg 205	Soil Stockpile N of 205, FACING S
14	8/28/97		Soil Stockpile W of Bldg 205, FACING E
15	8/28/97		Soil Stockpile W of Bldg 205, FACING E
16	8/28/97		Soil Stockpile E of FSS FACING S
17	8/29/97		Soil Stockpile W of Bldg 205
18	8/28/97	Bldg 30	North end
19	8/28/97	Bldg 30	North Foundation Yellow/Gry Pb Paint
20	8/28/97	Bldg 30	West side
21	8/28/97	Bldg 30	Southend
22	8/28/97	Bldg 30	East side asbestos
23	8/28/97	Bldg 30	Pack Boxes ~~Pb Paint~~ debris
24	8/28/97	Bldg 30	Boxes on west side
25	8/28/97	Bldg 30	Northend - overall view

1	8/28/97		Soil Stockpile W of Bldg 30, FACING SOUTH
2	8/28/97		Soil Stockpile W of Bldg 30, FACING SOUTH
3	8/28/97		Soil Stockpile W of Bldg 30, FACING SOUTH
4	8/28/97		SEPTIC TANK EXCAVATION, E of Bldg 300, FACING WEST
5	8/29/97		BACKHOE INSTALLATION, FSS FACING NORTH
6	1415	8/29/97	Sewage pump station (east one) Bldg 103
7	1545	8/29/97	Sewage pump station (west one) Bldg 105
8	1630	8/29/97	leveling out stockpile #2 location (Bldg 300/600)
9		8/30/97	TANK 15-C-1 FACING WEST, FSS Dry Well Set Up
10		8/31/97	Installing Stockpile #2 (Bldg 300/600) Facing South
11	1015	9/1/97	Shop tank installed Facing East
12	1016	9/1/97	Top of tank connections (Shop) Facing NE
13	1017	9/1/97	Unistrut fuel line support (Shop) Facing E
14	1018	9/1/97	Overall Shop tank install Facing East
15	1125	9/1/97	Breaking up concrete bldg 602 - burying on West end Facing NW.
16	1140	9/1/97	Breaking up well box (east one) @ Bldg 602 Facing NE.
17	1145	9/1/97	Burying concrete from well boxes Bldg 602 Facing SE.
18	~~1600~~ 1600	9/1/97	Bob working on our VAN (School Bus) Broke down.
19	1700	9/1/97	VORTAC tank installation Facing NW.
20	1705	9/1/97	Day tank installation - unfinished.
21	0930	9/2/97	Sampling/screening Stockpile #2 Note: red markers Facing N.
22	1615	9/2/97	Sampling grid on Stockpile #1 Facing East.
23			
24			Bob rainbow photos
25			
26	1035	9/3/97	Left station @ Bldg 105 grouted 4 pipe in bottom

Photo Roll #2

1	Sc 9/4/97	WEST SIDE TANK 15-B-17, Bldg 106
2	9/4/97	~~Tanks (4 used for temp Storage~~ SOUTH END TANK 15-B-17 Bldg 106
3	9/4/97	NORTH END TANK 15-B-17, Bldg 106
4	9/4/97	WEST SIDE TANK 15-B-17, Bldg 106
5	9/4/97	DayTank Installation, VORTAC facing SOUTH-EAST
6	9/4/97	SOUTH SIDE TANK 15-B-10, Bldg 600
7	9/4/97	NORTH SIDE TANK 15-B-10, Bldg 600
8	9/4/97	NORTH SIDE TANK 15-B-9, Bldg 600
9	9/4/97	SOUTH SIDE TANK 15-B-9, Bldg 600
10	9/4/97	EAST SIDE TANK 15-B-12, Bldg 602
11	9/4/97	WEST SIDE TANK 15-B-12, Bldg 602
12	1700hrs 9/5/97	- Y intersection @ VOR w/survey stake facing NE.
13	9/6/97 0830hrs	- Test pit N of VOR antenna facing S.
14	9/6/97 0840	- Test pit N of VOR Road (p. 103) facing S.
15		
16		> Test pit @ N. of VOR Road (to VOR NOT marked) facing NE.
~~17~~ 17	9/6/97 -0930-	Test pit (North end NDB facing NW.
~~18~~ 18	9/6/97 1000	- Test pit south of NDB. Facing NW.
~~19~~ 19	9/8/97 -1500	- VOR Tank (Gen running) Facing NE
~~20~~ 20	9/8/97 1500	- Fittings/Piping/sump and supply and return lines @ VOR.
~~21~~ 21		
~~22~~ 22		
~~23~~ 23		
~~24~~ 24		
~~25~~ 25		
26	end of film (notebook pic) also VR/day tank.	

Roll #3

1	Test Beginning Roll	
2	9/8/97 1515	~~Panorama of day tank & fitting~~ ENGINE GENERATOR CONNECTIONS
3		PIPING FROM GENERATOR TO DAYTANK ~~pipe/connections from VR/day tank to generator - gen running~~
4		DAYTANK AND FUEL FILTER
5		DAYTANK CONTROL PANEL
6		DAYTANK INSTALLATION
7		PIPING FROM AST
8		

LAND spreading Area Photos

1. VOR AC Rd. Intersection looking SE
2. " " " " "
3. Trebble for scale " " "
4. along N. side of Rd. looking E.
5. Proposed well location, E of intersection looking S.

6-11 personal

Tuesday 9/29/98

TANANA Lead sampling bldg 600

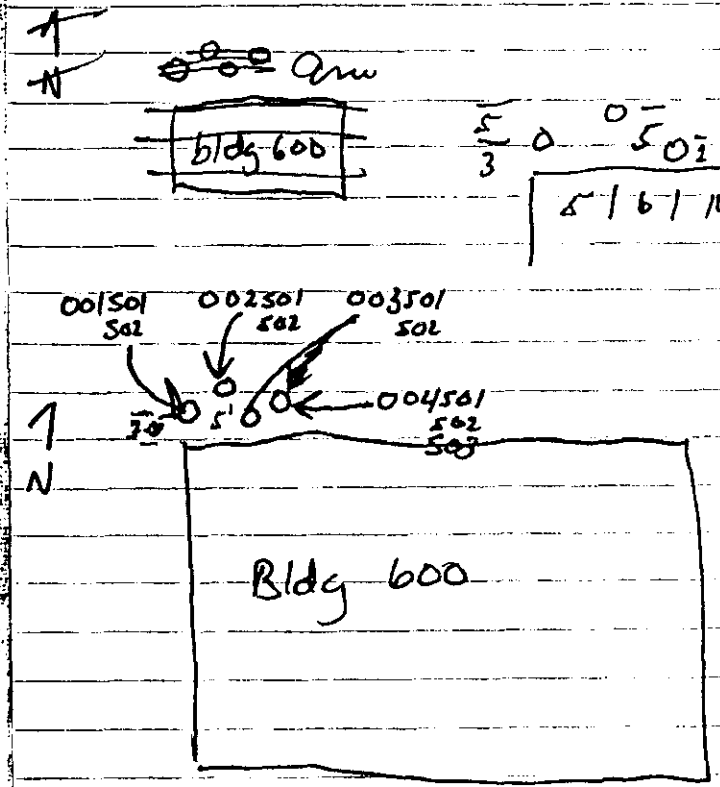
Bob Trebble, Tony Wagner / CH2-DH

0800 - Arrive at Garage, setup for sampling

0920 - at bldg 600, prepare to collect surface soil samples 8 oz, wide mouth clear jars

Sample Numbers

No.	depth	Time
TAL98SL001S01	6"	0930
02	18"	0930
002S01	6"	0935
02	18"	0940
003S01	6"	0945
02	18"	0945
004S01	6"	0950
02	18"	0950
03		0950 duplicate of 004S02



Photographs

12 bldg 600 looking south
drilling holes for lead samples

13 " " " looking SW

14- east end of Qtrs Compound looking SW

15- " " " looking S.

16- " " looking W behind shop

17- Area 3 1st drill set up looking SW on abandoned pipeline

18- " " " " "

19- drilling 1st hole looking SE 10:35 am 5/29/98

20- Bob T sniffing first hole

21-22 personal Yukon River

23- Looking N on E side of Qtrs Compound Drill Rig set up on 1st hole

24- Looking W between rows of Qtrs bldgs from E side

Asbestos Removal Specialists of Alaska

Management Plan

Daily Logs

Building 030 Tanana FAA Station
Tanana, Alaska

Asbestos Removal Specialists of Alaska
Fairbanks, Alaska

Lead-Based Paint (LBP) Management Plan
Building 030 Tanana FAA Station
Tanana, Alaska

August 21, 1997

PURPOSE OF PLAN

It is the purpose of this plan to assure the removal of lead based paint (LBP) and LBP coated structures is completed without endangering the safety and health of the workers involved and without contaminating any portion of the facility. Guidance for this plan is drawn from 29 CFR 1926.62, the OSHA Lead in Construction Standard.

SCOPE OF WORK

The work consists of the removal of Lead Based Paint (LBP) from the exterior of building 030 at the Tanana FAA Station. This building has been abandoned and is scheduled for demolition.

SPECIAL PROBLEMS ASSOCIATED WITH SCOPE OF WORK

The lead abatement portion of this project appears from the present scope to be uncomplicated, and can be completed without any special problems.

SEQUENCE OF LEAD REMOVAL OPERATIONS.

The sequence of LBP removal operations will be determined by the General Contractor.

NOTIFICATION OF OCCUPANTS OF PROPOSED WORK SCHEDULES

The Lead Abatement Contractor will schedule the work with the General Contractor who will notify the Contracting Officer of the lead abatement schedule.

ENGINEERING CONTROLS

Engineering controls will be established as necessary to protect the facility from lead contamination and to protect workers from lead exposure. Engineering controls for the removal of the exterior LBP will consist of a polyethylene ground cover around the exterior of the building and a high efficiency filtered (HEPA) vacuum cleaner and a needle gun exhausted by a HEPA vacuum. Work practices and hygiene controls outlined below combined with the use of the HEPA vacuum and needle gun are expected to be adequate to maintain worker exposures below the OSHA Permissible Exposure Limit (PEL), in accordance with 29 CFR 1926.62, the OSHA Lead in Construction Standard.

Containment Area: No containment area is required for the exterior LBP removal work of this project.

Decontamination Unit: The Lead Abatement Contractor will provide a portable decontamination station with facilities for hand and face washing for LBP workers. The station will be provided with clean water, soap and disposable towels.

Exhaust Ventilation: Local exhaust ventilation will be provided for all power tools used to disturb LBP. The only such tool planned to be used is a needle gun. The exhaust ventilation will be provided with a HEPA-filtered vacuum cleaner. The Lead Abatement Contractor will use a HEPA-filtered vacuum cleaner directly as a local exhaust system when scraping loose flakes of paint from the exterior window trim as indicated in LEAD REMOVAL METHODS, below. No general area exhaust ventilation will be necessary for this job because the methods to be used will not generate any significant level of airborne dust.

LEAD REMOVAL METHODS

a. Place a polyethylene (poly) drop sheet on the ground below the work area. The ground sheet will be taped to the side of the building and stretch out on the ground approximately six feet.
b. Position the HEPA vacuum cleaner on the tarp where the hose can reach all locations.
c. Carefully remove the exterior siding.
d. Lay the siding pieces in the disposal boxes.
h. HEPA vacuum the poly to remove any debris.

HYGIENE PROGRAM

The engineering controls, methods and personal protective equipment to be used are expected to assure that worker exposures to airborne lead dust will be far below the OSHA action level. The greatest lead exposure hazard on this project will be from ingestion rather than from inhalation. The Hygiene Program will assure that workers do not ingest lead due to careless hygienic practices. No consumption of food, beverages or use of tobacco products will be allowed in the regulated area. All workers will wash hands and faces thoroughly at the decontamination station upon leaving the work area before breaks and lunch time. Workers will be provided a clean break and eating area outside the regulated area.

PERSONAL PROTECTIVE EQUIPMENT

Personal protective equipment (PPE) is required to assure that workers are not exposed to lead dust either by inhalation or by ingestion.

Workers will wear disposable Tyvek type coveralls with integral hoods and booties. Workers will don nitrile gloves which will be taped to the suit cuffs to provide a seal at the wrist.

It is expected worker lead exposures to be well below the ADOL PEL. However for this project workers will don half face mask air purifying respirators with high

efficiency particulate air (HEPA) filters. These respirators will provide an extra safety factor and will contribute to reducing the exposures to as low as reasonably possible. Respirators will be worn in accordance with the Lead Abatement Contractor's Respiratory Protection Program. All workers wearing respirators have medical approval, training and have been fit tested for the specific, NIOSH/MSHA approved, respirators used on the job.

DECONTAMINATION OF EQUIPMENT

The HEPA vacuum and needle gun will be decontaminated by a careful wipe down at the end of the project. Disposable hand tools will be disposed of with the project waste.

REMOVAL OF EQUIPMENT AND TEMPORARY FACILITIES

Once the lead paint abatement is complete and the site has passed inspection by the Contracting Officer, all temporary facilities will be removed, leaving the space clean, unobstructed and ready for the renovation work.

EMERGENCY CONTINGENCY PLAN

An emergency contingency plan is necessary to prepare for potential loss of engineering control systems or spills of waste materials that could threaten to contaminate areas beyond the containment area. The LBP is being removed using wet methods and airborne lead levels are not expected to be significant..

In the case of a spill, or discovery of unexpected lead levels on adjacent grounds, work within the regulated area will cease, workers will decontaminate, put on clean protective gear and assemble to clean up the spill or other source of contamination. The contaminated area will be delineated by inspection and spilled waste will be cleaned up using wet methods and the HEPA vacuum as appropriate. Workers will return to work in the regulated area only when the spill has been cleaned up entirely..

An emergency action plan is also necessary to address possible worker injury or fire in the work area. Emergency numbers will be posted by the project phone. In case of emergency, workers will be directed by the project foreman to leave the regulated area. In case of fire, workers will proceed to the nearest exit following a predetermined path identified in the pre-job safety meeting. Once workers are out, they will call the local emergency services from the nearest phone and summon assistance. In the case of an injury, workers will be directed to stop work and care for the injured employee. If the injury is serious the foreman or any other worker available will call the local emergency services to summon medical assistance from the medical department. Decontamination requirements will be dispensed with to expedite care for the injured person.

HAZARDOUS WASTE MANAGEMENT PLAN

The hazardous waste generated by the removal of LBP from steel railings is expected to consist of under 55 gallons of a lead-containing mass which will be collected in a drum with a tight fitting lid. All open waste handling and packaging operations will be done over a poly tarp or commercially available spill liner sufficient in size to contain a spill of the entire amount of material being handled. Waste packaged will also include used disposable suits and tools.

Trim pieces coated with LBP will be combined with related debris and the mixture will be sampled and tested according to the Toxicity Characteristic Leaching Procedure (Test method 1311 as defined by 40 CFR 261, Appendix II). If the extract from these waste materials contains lead exceeding five milligrams per liter of extract, the waste will be considered hazardous and the material will be packaged in drums and disposed of accordingly.

Hazardous waste will be disposed of via Phillips Environmental, Inc., 1813 East First Ave., Anchorage, Alaska, (907) 272-9007. The point of contact is Larry Wilkenson, P.E. See attachments for additional submittal items on the waste disposal facility. Qualifications of personnel who will be handling the waste on site are included in the personnel submittal.

No specialized equipment is expected to be needed for the paint removal or handling of the waste. LPB removal is expected to be completed in a few days. All wastes generated will be containerized for shipment the same day they are generated.

The cost for hazardous waste disposal is undetermined at this time because the full project scope is not yet available. Disposal costs will be included in a forthcoming schedule of values.

The Contractor will follow the Hazardous Waste Management Plan throughout the course of the project. Any deviations from the plan will be submitted to the Contracting Officer for approval in advance.

HANDLING AND SITE STORAGE PLAN

The containerized waste from the project will be stored on site, at a specific location approved by the Contracting Officer, pending pick up by Phillips Environmental. Shipment to a disposal facility is expected to be made within thirty days.

The Contractor will follow the Handling and Site Storage Plan throughout the course of the project. Any deviations from the plan will be submitted to the Contracting Officer for approval in advance.

Building 030 Tanana FAA Station
Tanana, Alaska

Asbestos Removal Specialists of Alaska.
Fairbanks, Alaska

SAMPLING AND TESTING PROCEDURES

In accordance with instructions from the waste disposal firm, the Contractor will pre-sample the paint. The sampler will remove a chip approximately one-half square inch in area, seal the sample in a plastic bag and send it to the waste handling firm for analysis. The Contractor will also send a material safety data sheet on the paint removal product to the waste disposal firm.

Building 030 Tanana FAA Station
Tanana, Alaska

Asbestos Removal Specialists of Alaska.
Fairbanks, Alaska

WASTE DISPOSAL PLAN

See attached submittal materials from Phillips Environmental.

AIR MONITORING PLAN

It is expected that a crew of two will be working on this project. The Contractor will conduct full shift personal exposure monitoring on one worker each day. Sampling will be conducted using personal sample pumps and 37 mm mixed cellulose ester filter cassettes, closed face. Two consecutive samples (one morning, one afternoon) will be taken for each sampled worker spanning the entire work shift. Work shifts are expected to be eight hours long. Lunch periods in non-contaminated areas will not be sampled, but break periods will be sampled. Pumps will be pre- and post-calibrated to approximately 2.0 liters per minute using a primary standard in accordance with good industrial hygiene practice. Sample cassettes will be fastened in the worker's breathing zone. Each sample will be run for approximately four hours. Sample volumes will be approximately 480 liters. Sample times and volumes may be adjusted if dust loading is a problem.

Laboratory analysis will be completed by a facility accredited by the American Industrial Hygiene Association. Upon receipt of analytical results laboratory will calculate eight hour TWA's for sampled workers. Where work shifts exceed eight hours, the total exposure will be compressed into eight hours for comparison with the OEL. The Contractor will provide all results to site workers within five days of receipt and will also submit copies to the Owner's Representative.

The Contractor will follow the Air Monitoring Plan throughout the course of the project. Any deviations from the plan will be submitted to the Contracting Officer for approval in advance.

ASSOCIATED GENERAL CONTRACTORS of ALASKA

[redacted]

[redacted]

[redacted]

Certificate of Training

J&J Associates is pleased to certify that

Robert F. Parker

has attended and successfully completed the

LEAD ABATEMENT WORKER TRAINING

in accordance with
29 CFR 1926.62 and Title X 1021, TSCA 402 Title IV
(EPA w/DOL, HUD, NIOSH)
on this 14th day of December, 1994
at Fairbanks, Alaska.

J&J961214-PbW-05

Certificate of Training

J&J Associates is pleased to certify that

Robert Parker

has attended and successfully completed the

LEAD ABATEMENT WORKER ANNUAL REFRESHER

in accordance with
29 CFR 1926.62 and WAC 296-155-17626
on this 23rd day of October, 1996
at Fairbanks, Alaska

Expires October 23, 1997

J&J961023-PbW-11

Environmental and Industrial Hygiene Consultants

CERTIFICATE OF TRAINING

This certifies that

Robert F. Parker Jr.

has satisfactorily completed

40 hours of training in:

Hazardous Site Operations and Emergency Response

in compliance with 29 CFR 1910.120 and Title 8 AAC, Alaska General Safety Code, Subchapter 10

Asbestos Academy of Alaska

Fairbanks, Alaska

Certificate of Training

This Certifies that:

Robert Parker

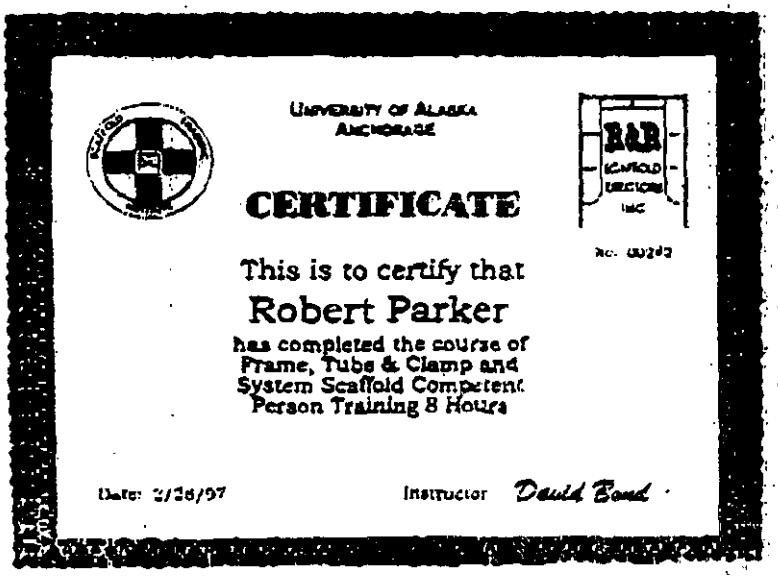
Has Satisfactorily Completed:

16-Hr. On-Site Refresher Training in:

Hazardous Waste Operations and Emergency Response
Hazwoper) General Site Worker
Emphasizing USTs & Petroleum Hydrocarbon Contamination
in accordance with 29 CFR 1910.120 and Title 8 AAC,
and Alaska General Safety Code, Subchapter 10

April 12 1994

Carl S. Thompson, Training Coordinator and Safety Officer, Instructor



UNIVERSITY OF ALASKA
ANCHORAGE

CERTIFICATE

R&R SCAFFOLD ERECTORS INC

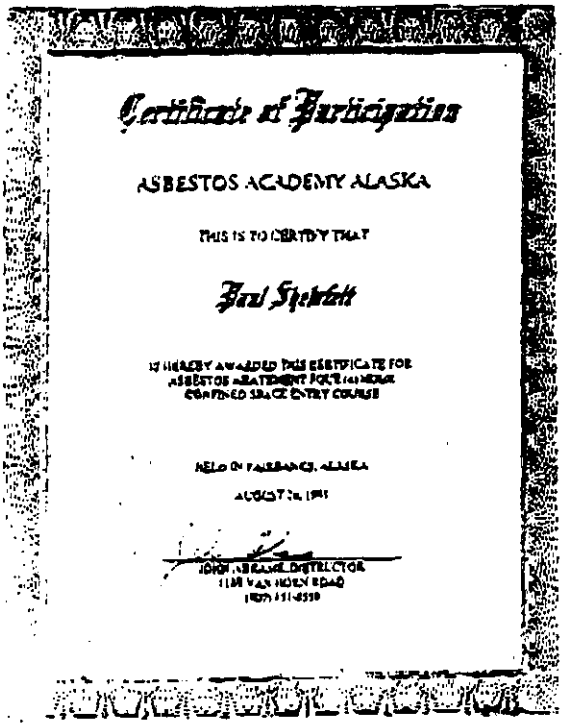
No. 00243

This is to certify that

Robert Parker

has completed the course of
Frame, Tube & Clamp and
System Scaffold Competent
Person Training 8 Hours

Date: 2/28/97 Instructor David Bond



Certificate of Participation

ASBESTOS ACADEMY ALASKA

THIS IS TO CERTIFY THAT

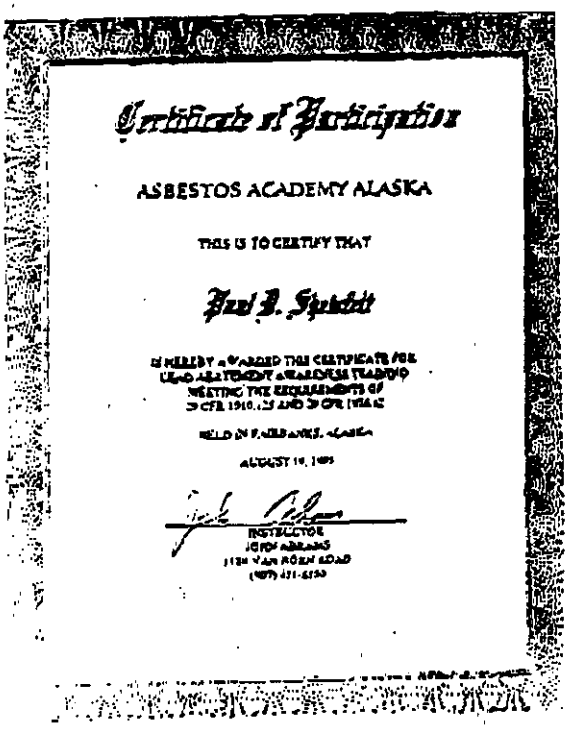
Paul Shewfelt

IS HEREBY AWARDED THIS CERTIFICATE FOR
ASBESTOS ABATEMENT WORKER/SUPERVISOR
CONTRACTOR/SUPERVISOR ENTRY COURSE

HELD IN FAIRBANKS, ALASKA

AUGUST 7th, 1991

JOHN ABRAMS, INSTRUCTOR
1134 VAN HOEN ROAD
(907) 451-8550



Certificate of Participation

ASBESTOS ACADEMY ALASKA

THIS IS TO CERTIFY THAT

Paul B. Shewfelt

IS HEREBY AWARDED THIS CERTIFICATE FOR
LEAD ABATEMENT AWARENESS TRAINING
MEETING THE REQUIREMENTS OF
29 CFR 1910.134 AND 29 CFR 1926.62

HELD IN FAIRBANKS, ALASKA

AUGUST 19, 1995

INSTRUCTOR
JOHN ABRAMS
1134 VAN HOEN ROAD
(907) 451-8550

Certificate of Training

J&J Associates is pleased to certify that

Paul Shewfelt

has attended and successfully completed the

LEAD ABATEMENT WORKER REFRESHER

in accordance with
29 CFR 1926.62 and Title X 1021, TSCA 402 Title IV
(EPA w/DOL, HUD, NIOSH)
on this 10th day of November, 1995
at Fairbanks, Alaska.
Expires November 10, 1996

J&J/95110-PbWR-01

PHILIP
ENVIRONMENTAL
ALASKA DIVISION

Recycling Solutions for Every Environment

Philip Environmental is a full service, hands on, waste management company. Our personnel are experienced in all major environmental tasks including: environmental consulting, engineering, site assessment, site remediation, field screening, waste categorization/classification, waste consolidation, packaging, manifesting, hazardous/non-hazardous waste transport under US and Canadian regulations, and hazardous/non-hazardous waste disposal.

We provide an integrated mix of technical consulting services, project management expertise, field services, emergency response capabilities and hazardous waste management tailored to fit our customers' needs. These extensive in-house capabilities are unique to Philip, and allow us to avoid stacked overheads and mark-ups where often multiple layers of contractors are used, providing a "one stop shopping" option for our clients

Our Alaska personnel are at the fore front of a rapidly changing environmental picture. Philip's recently expanded services give us much more to offer and enable us to compete in a highly competitive field that demands a knowledgeable, cost effective means of cleaning up our environment while meeting strict regulatory guidelines. Philip Environmental has over 10 years of Alaskan environmental experience. The Philip Alaska Division currently serves the hazardous waste management and site remediation needs of over 150 Alaska customers, including long term contracts with Federal, State, Municipal, and large Corporate clients. The Alaska Division employes about 25 Alaskans year around and twice that during the peak summer seasons. This team is further strengthened by our ability to draw on additional expertise throughout the Philip organization, (approximately 3,500 employees strong), or from one of the many Alaskan firms we work closely with.

Philip's Alaska Division has particular expertise in working in remote locations. We have carried out remediation and hazardous waste management projects all over the State of Alaska (more than 70 remote locations), including the North Slope, the Seward Penninsula, the Pribiloffs, the Aleutian Islands, southeast Alaska, Kodiak Island, the Kenai Peninsula, and all along the Trans-Alaska Pipeline.

Philip Environmental's imaginative approach to difficult Alaska logistics is illustrated by the variety of transportation we have used to perform remediation and hazardous waste management projects. In addition to being a licensed hazardous waste transporter, Philip routinely uses the services of approximately forty (40) approved transporters within the State of Alaska utilizing every means of air, land, and water transportation available. Philip handles annually about 10 million pounds of waste in Alaska without incident.

1813 East First Avenue • Suite 201 • Anchorage, AK 99501
PH: (907) 272-9007 • FAX: (907) 272-6805 • AK: (800) 478-9008

Depending on the required treatment, the wastes are treated locally or sent to one or more of the Philip's four TSDF facilities on the west coast or in some cases direct to one of the many EPA approved facilities Philip has working relationships with. Philip's four Washington TSDFs are the Georgetown Plant, the Washougal Plant, the Kent Plant, and the Tacoma Plant.

Our broad range of clientele across the State of Alaska is testimony to our diversification and service driven approach. Customers benefit from our strength and resources to provide complete environmental management services in the most efficient and economical manner possible. Philip consistently adheres to the highest level of safety, compliance, and professionalism in all operations. Our clients have the assurance that all services are performed with the professional level of quality and dependability they have come to expect from Philip.

Treatment, Recycle and Disposal Facilities

Philip is the owner/operator of 11 TSD facilities in the United States. Each facility is integrated into our waste management system providing a specific role. These plants have contractual ties to a number of end disposal companies. This system ensures unnecessary duplication and economies of scale in the waste treatment hierarchy. That hierarchy, as described by the EPA, is:

- Waste Reduction
- Waste Recycling
- Waste Reuse
- Waste Treatment
- Waste Incineration
- Waste Landfill

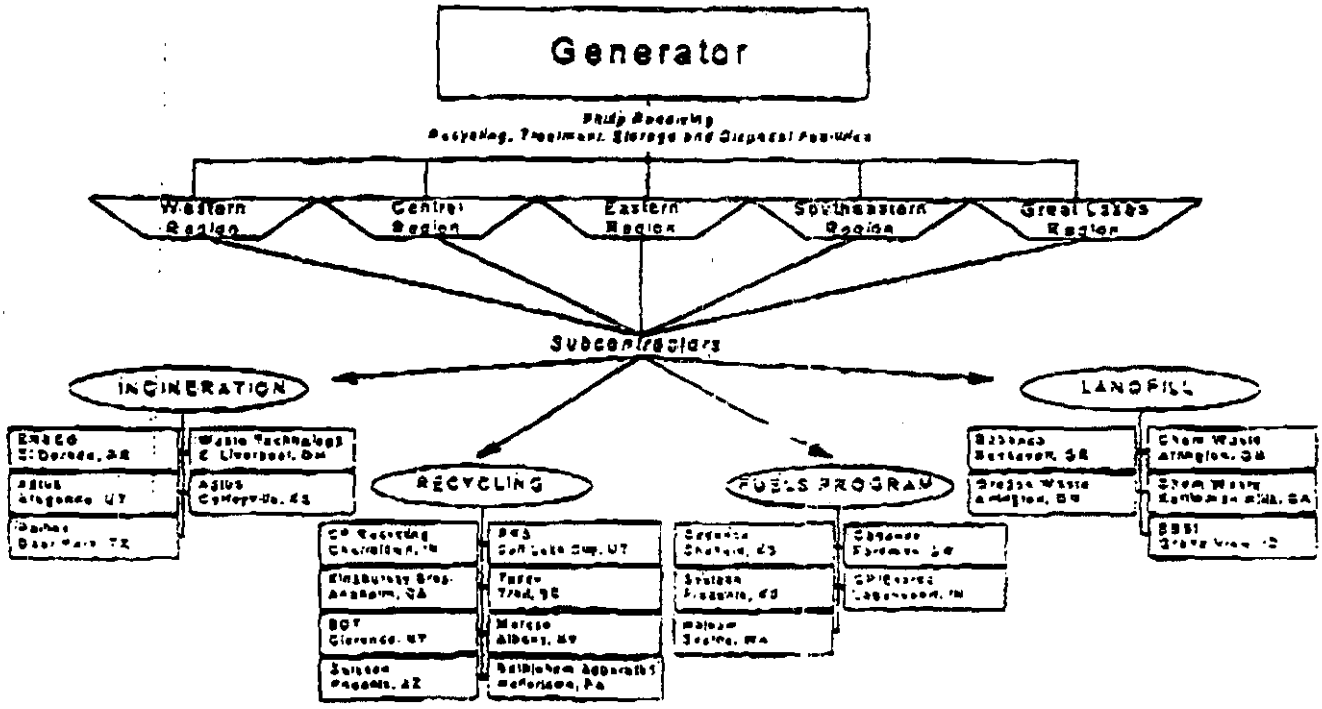
For most waste streams we try to establish a single - central receiving facility for all containerized waste. All receiving plants are designed, permitted and manage a wide range of hazardous waste codes. All waste streams received at the facilities is done so based on our Part B Waste Management Plan.

Elements include:

- A formal preshipment waste characterization waste approval process.
- Formal waste manifesting.
- Formal waste laboratory verification upon shipment arrival.
- Computerized waste tracking of all waste from receipt through treatment to end disposal.

Treated consolidated and stabilized wastes are shipped to our other facilities for further treatment and disposal, or to one of our end disposal subcontractors. Philip uses end disposal subcontractors for that portion of a project most applicable to their disposal function. These functions are defined as: (1) Incineration Program; (2) Recycling Program; (3) Fuels Program; (4) Landfill Program

All end disposal firm we use have long-standing contracts with Burlington. They are audited on a routine basis and are approved for a specific end disposal function. Burlington believes it is prudent to have at least two end disposal subcontractors for each disposal function.



SUBCONTRACTOR SAFETY PERFORMANCE QUESTIONNAIRE

Name of Subcontractor: Asbestos Removal Specialists of AK
Address of Subcontractor: 1185 Van Horn Road Fairbanks AK
SIC Code:
Project: Davis Log Station
Date: 8-20-97

Please use your OSHA No. 200 logs to record the number of injuries and illnesses for the last three (3) years. A copy of each OSHA No. 200 log from the last three (3) years must be attached to this questionnaire. PLEASE NOTE: This form should be attached to CH2M HILL requests for bid. Subcontractors should return the completed form with their bid to the Contract Administrator (KA). The KA and others will review it and use the information in selection of the subcontractor.

YEAR	1997	1996	1995
Number of Fatalities	0	0	0
Lost Work Day Cases Incident Rate[1]	0	0	0
Severity Rate[2]	0	0	0
OSHA Recordable Incident Rate[3]	3.02	19.3	44.0
Number of Hours Worked	19342	20742	18163
Total Number of Employees on Your Payroll	15	20	15

[1] The following formula is used for calculating the Lost Work Day Incident Rate: = Number of Lost Work Day Cases x 200,000 / Number of Hours Worked

[2] The following formula is used for calculating the Severity Rate: = Number of Lost Work Days x 200,000 / Number of Hours Worked

[3] The following formula is used for calculating the OSHA Recordable Incident Rate: = Number of Recordable Cases x 200,000 / Number of Hours Worked

1. List your company's Experience Modification Rate (EMR) for the three (3) most recent years:

	Interstate	Intrastate
1997	—	1.4
1996	—	1.71
1995	—	2.07

Please provide a letter from your insurance carrier that certifies the above EMR rates. If EMR is greater than 1.0, please attach a written explanation of the methods that are being implemented by your company to reduce this rate.

2. List all activities your company will be performing on CH2M Hill Projects: LEAD ABATEMENT

3. Has your company received an OSHA (or State OSHA) citation within the last five (5) years?

Yes X No ___ If yes, please explain (on a separate page) type of citation, fine or penalty assessed, and explanation of final resolution (including fines paid). Were the citations contested/vacated? What corrective actions were taken?

4. Does your company have a written occupational safety and health program?

Yes X No ___ We reserve the right to request copies of your health & safety program.

5. Does your company conduct field safety inspections to determine compliance with applicable regulations and procedures?

Yes X No ___

Who conducts these inspections? PRESIDENT OR VICE PRESIDENT

How often are safety inspections conducted? WHEN ON JOB SITE

6. Does your company have the following on your staff or on retainer?

	Yes	How Many	Staff	Retainer	No
Occupational Physician*	___	___	___	___	X
Certified Industrial Hygienist	___	___	___	X	___
Certified Safety Professional	___	___	___	___	X
Certified Health Physicist	___	___	___	___	X

* Board Eligible or Board Certified

7. Does your company have an orientation program for new hires? Yes X No ___

8. Has your company implemented any of the following training programs?

Yes	No	N/A		Yes	No	N/A	
X	☐	☐	Asbestos	☐	☐	X	Forklift Operations
☐	X	☐	Bloodborne Pathogens	☐	☐	X	Hazardous Waste (40-hour)
X	☐	☐	Confined Space Entry	X	☐	☐	Hazard Communication
☐	☐	X	Construction (OSHA Certified 10 Hours)	☐	☐	X	Laboratory Safety
X	☐	☐	Construction (OSHA Certified 30 Hours)	X	☐	☐	Lead
X	☐	☐	CPR and First Aid	X	☐	☐	Lockout-tagout
X	☐	☐	Cranes and Hoists	X	☐	☐	Hearing Conservation
X	☐	☐	Electrical Safety	X	☐	☐	Personal Protective Equipment
X	☐	☐	Fall Protection	☐	☐	X	Radiation Protection
☐	☐	X	Fire Extinguishers	☐	☐	X	Respiratory Protection
				☐	☐	X	Trenching & Excavation Competent Person

9. Does your company have a program in place to discipline workers that perform unsafe work practices? Yes X No ___

10. Does your company have written Accident Investigation Procedures? Yes ___ No X

11. Does your company have a home office or corporate safety representative who will audit the job?
Yes X No ___
If Yes, Name: John Adams Title: Vice President

12. Does your company currently maintain a program in compliance with applicable state "Right to Know" laws and the OSHA Hazard Communication Standard?
Yes X No ___

13. Does your company currently maintain an Injury and Illness Prevention Program in compliance with applicable state regulations?
Yes X No ___ N/A ___

14. Describe your company's medical surveillance program:
Yearly Physicals for All Workers

15. Does your company hold "tailgate/toolbox" safety meetings? Yes X No ___
If yes, how often? Weekly

16. Has your company worked for CH2M HILL in the past three years? Yes ___ No X
If so, what year and what project manager were you working for?
Year: ___ Project Manager: ___

17. The undersigned warrants and represents the data provided in this document is accurate in all respects.
Name of Firm: Asbestos Removal Specialists of Alaska Inc.
Completed by: John Adams
Title: Vice President
Date: 8-20-97

CH2M HILL use only
Reviewed by: ___ Date: ___
Acceptable: ☐ Yes ☐ No If no, please send to Regional HSM for review.
Entered into database by: ___ Date: ___

DAILY LOG

Date 8-25-9[illegible]

PROJECT

Number: _____

Name: FAA-Tanana, AK. - Quonset Hut

Location: Tanana, AK

Temperature
Exterior AM: 50-60
PM: 60
Interior AM: _____
PM: _____

Day of Week: Monday

Weather
AM: Cloudy
PM: Rain

Is abatement underway?

No → Set-up activities checklist for: full scale removal project

Yes → Type or Removal today: Mobilize and Set-up for Lead Paint Removal

Pre-existing conditions: _____

2. Is HVAC system deactivated?_____
3. Is Electrical locked out?_____
4. Are respirators in use during set-up?_____ Type: _____
5. Are protective suits in use?_____ Type: _____
6. Was area precleaned?_____
7. Are critical barriers established? _____
8. Are items in work area covered/sealed in 6 mil poly? _____
9. Desc. surfaces not covered with poly: _____
10. Is the decon set-up?_____
11. Is decon equipped with clean-shower-equip. room? _____
12. Number of air filtration devices on site?_____
13. Number of neg air units needed:
_____ /21750 = _____
(length*width*height) = cubic ft. # neg air
14. Are all penetration sealed?_____
15. Are workers wearing : hard hats:_____
: safety boots:_____
: safety glasses:_____
16. Is poster-board set-up displaying all required posters? _____

VISITOR LOG
List visitors name - company - reason for visit

1. Is neg. pressure sustained?_____
2. Methods used to identify neg pressure and proper air flow: _____
3. Critical barriers and containment area checked to insure integrity?_____ note repairs _____
4. Are wet methods being used?_____
5. Are Hepa vac's being used?_____
6. Is removed ACM being promptly bagged?_____
7. Are bags labeled?_____
8. Type of respirator used? _____
9. Are all workers wearing : Hardhats_____
: Steel-toed boots_____
(circle one): safety glasses or full face resp..
10. Type of suit's used: _____
11. Were the disposable suits examined for rips and mended or changed?_____
12. Employee's using proper Decontamination proc.? _____
13. Was entrance to decon controlled?_____
14. Were any workers observed smoking, eating, drinking, or observed removing their respirator while in containment? If so, who? _____
15. Was work area cleaned up today? _____

(answer 17-24 only if disposal was performed today)

16. Disposal method: Industrial Vac-hand load out-no disp.
17. Was load-out decon used?_____
18. Was acm double-bagged?_____
19. Were bags labeled for asbestos?_____
20. Was owner name & address placed on bags?_____
21. Total amount of disposal: _____
22. Disposal manifest filled out?_____ Manifest # _____
23. Was copy of disposal Manifest given to office?_____
24. # of pictures taken today:_____
25. Was unknown ACM discovered today?_____ If so, list; location, quantify the amount and contact office.

Is abatement completed today?_____ If so, was final inspection performed?_____ By whom? _____

Refer to final inspection report#_____ at back of log book.

Did all personnel and visitors fill our sign-in log? _____

Name of Employee	Work Location	Work Performed	Start/Stop Total
Robert Parker	Shop	Load Tools + Equipment	7:30 - 8:30
	Airport	Mobilize and	8:30 - 10:00
	Outside Quonset Hut	Setup for Lead Paint Removal	10:00 - 2:00
E Jay Buoncore	/	/	/
			1 hr lunch

Comments: _____

Robert Parker
Foreman Signature

8-25-97
Date

DAY OF WEEK: Monday

WORK PERFORMED TODAY: (describe removal procedures, amount of area contained, ACM removed, etc.)

Today we mobilized and set up for lead paint removal for outside of the FAA Quonset hut, Tanana, AK.

We packed tools and equipment, went to the airport and flew to Tanana AK. No one from the general contractor there to pick us up. We caught a ride with a local to Jakes Tanana Lodge and checked in. Warbelos air had taken some of our equipment to the job site and some to Jakes.

We walked to the job site and made contact with Brian [illegible] the FAA Rep. He showed us the Quonset hut and went over scope of work. The OHM guys were working on a different job site. Later in the day I met Bob Trebble of CH2M-Hill and Todd Hiltunen of OHM. Both companys are joint venture. We also went over scope of work.

All vehicles are being used so we borrowed Jakes 4-wheeler to transport equipment from the lodge to the job site. One of OHM guys showed up and helped us with one load in his truck.

After lunch we got gas for the weedeater and generator. Then cut down the tall grass around the bldg. The grass

Problems or Change Order Work Encountered Today:

has paint chips in it so we will dispose of the grass as lead contaminated.

We set up area around Quonset hut for lead paint removal.

I put up lead warning tape approx. 20' out around the bldg. Put up a decon station in the North east corner of containment area. The decon consist of a 10 mil poly wash basin with ~~[illegible]~~ Berms to keep water in, a 5 gal bucket of water

Visits & Conversations:

(Quote conversation as accurately as possible, list persons name and time of conversation)

and a battery operated ~~[illegible]~~ shower pump and a chair. After washing off we will soak up water with absorbent pads and dispose of as lead contaminated. I also put up lead warning signs around the bldg.

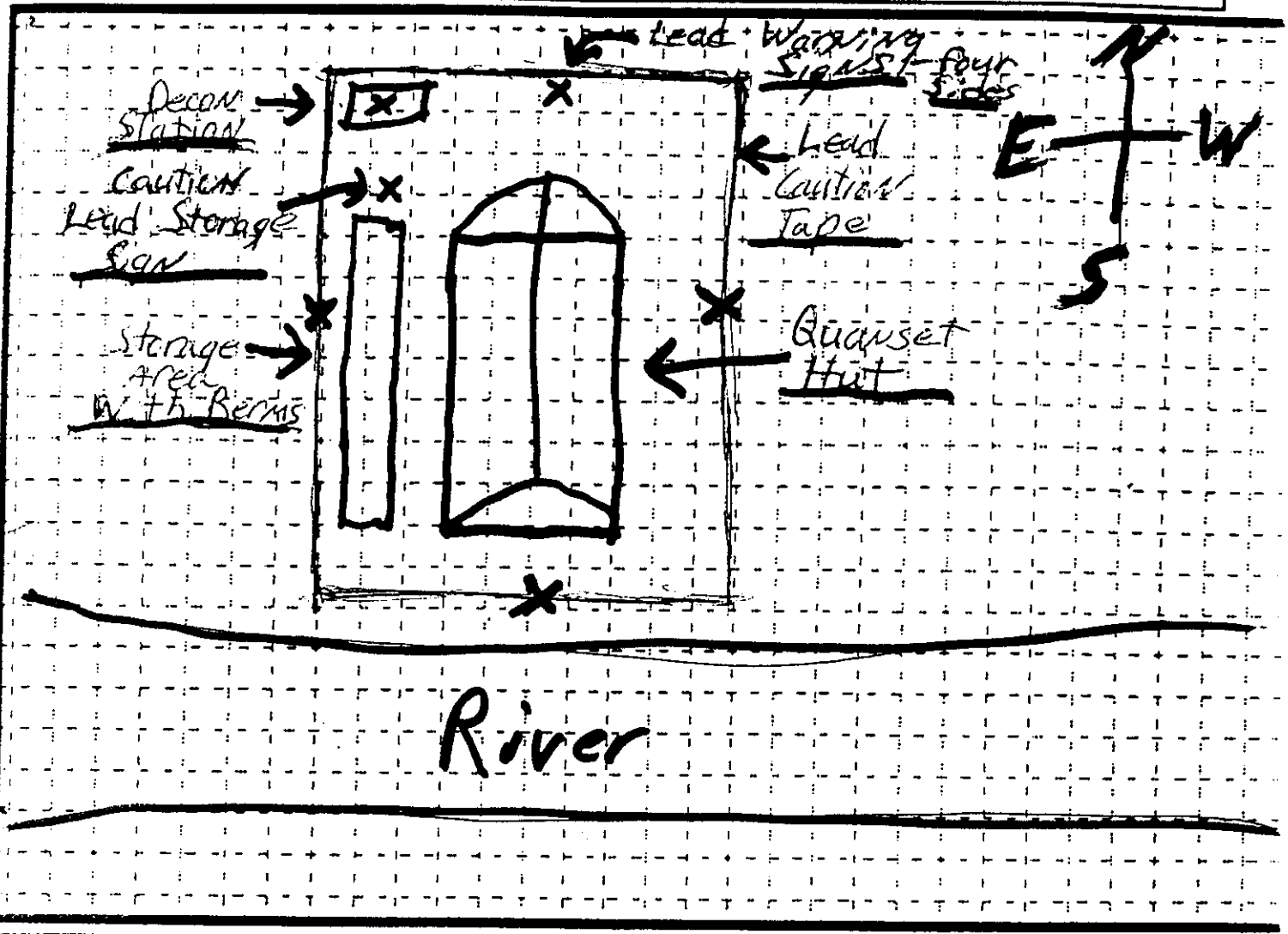
We will be putting the lead painted fiber board siding in poly lined cardboard boxes. Boxes will be secured to wooden pallets with wood screws and washers. Boxes will be placed on 10 mil reinforced poly with berms made of dirt under the poly. We made the box storage area and put two boxes together today.

Will begin removal tomorrow.

[illegible] FAA [illegible]

Sketch or paste a pre ...tched containment area into the ...e below. Detail the exact location of Decon -Neg. Air Machines - Air samples - Bulk samples

Note: If a paste/taped on work area is used then all involved parties must sign through the copy sketch onto the actual page!



AIR MONITORING:

Total sample count
Area:_____
Personnels:_____
Field Blanks:_____

(Don't list personnels here. Enter them in TWA section below)

SAMPLE NUMBER	RESULTS	SAMPLE NUMBER	RESULTS

TWA _____ (Name)

sample #_____ (____ • ____) + #_____ (____ • ____) + #_____ (____ • ____) / 480 = _____ 8 hr. TWA
(time • f/cc) + (time • f/cc) + (time • f/cc)

_____ (Name)

sample #_____ (____ • ____) + #_____ (____ • ____) + #_____ (____ • ____) / 480 = _____ 8 hr. TWA
(time • f/cc) + (time • f/cc) + (time • f/cc)

COMMENTS:_____

_____ signature

_____ date

Legend

BE - Baseline Environmental
BA - Baseline work area
AM - Area Monitor (inside)
EM - Environmental (outside)
CM - Clearance Monitor
PM - Personal Sample
EX - Excursion sample

Decon
Air Filtration
load-out station
(X) sample location

DAILY LOG

Date 8-26-9?

PROJECT

Number: _____

Name: FAA - Quonset Hut

Location: Tanana, Ak.

Temperature
Exterior AM: 50
PM: 60
Interior AM: _____
PM: _____

Day of Week: Tuesday

Weather
AM: Cloudy
PM: Rainy

Is abatement underway?

No → Set-up activities checklist for: full scale removal project

Pre-existing conditions: _____

2. Is HVAC system deactivated?_____
3. Is Electrical locked out?_____
4. Are respirators in use during set-up?_____ Type: _____
5. Are protective suits in use?_____ Type: _____
6. Was area precleaned?_____
7. Are critical barriers established? _____
8. Are items in work area covered/sealed in 6 mil poly? _____
9. Desc. surfaces not covered with poly: _____
10. Is the decon set-up? _____
11. Is decon equipped with clean-shower-equip. room? _____
12. Number of air filtration devices on site?_____
13. Number of neg air units needed:
_____ /21750 = _____
(length*width*height) = cubic ft. # neg air
14. Are all penetration sealed?_____
15. Are workers wearing : hard hats:_____
: safety boots:_____
: safety glasses:_____
16. Is poster-board set-up displaying all required posters? _____

VISITOR LOG
List visitors name - company - reason for visit

Yes → Type or Removal today: Lead Painted Fiber Board

1. Is neg. pressure sustained? N/A
2. Methods used to identify neg pressure and proper air flow: N/A
3. Critical barriers and containment area checked to insure integrity? YES note repairs _____
4. Are wet methods being used? YES
5. Are Hepa vac's being used? YES
6. Is removed ACM being promptly bagged? N/A
7. Are bags labeled? N/A
8. Type of respirator used? 1/2
9. Are all workers wearing : Hardhats YES
: Steel-toed boots YES
(circle one): safety glasses or full face resp..
10. Type of suit's used: Rain Suits
11. Were the disposable suits examined for rips and mended or changed? NO
12. Employee's using proper Decontamination proc.? YES
13. Was entrance to decon controlled? YES
14. Were any workers observed smoking, eating, drinking, or observed removing their respirator while in containment? If so, who? NO
15. Was work area cleaned up today? YES

(answer 17-24 only if disposal was performed today)
16. Disposal method: Industrial Vac-hand load out-no disp. _
17. Was load-out decon used?_____
18. Was acm double-bagged?_____
19. Were bags labeled for asbestos?_____
20. Was owner name & address placed on bags?_____
21. Total amount of disposal: _____
22. Disposal manifest filled out?_____ Manifest # _____
23. Was copy of disposal Manifest given to office?_____
24. # of pictures taken today: 8
25. Was unknown ACM discovered today? NO If so, list: location, quantity the amount and contact office.

Is abatement completed today? NO If so, was final inspection performed?_____ By whom? _____
Refer to final inspection report#_____ at back of log book.

Did all personnel and visitors fill our sign-in log? _____

Name of Employee	Work Location	Work Performed	Start/Stop Total
Robert Parker	Outside Quanset Hut	Remove Lead Painted	230-1200
	East and West and	Fiber Board	12-1230 Lunch
F. Jay Buckcore	Top Sides.		1230-700 AM

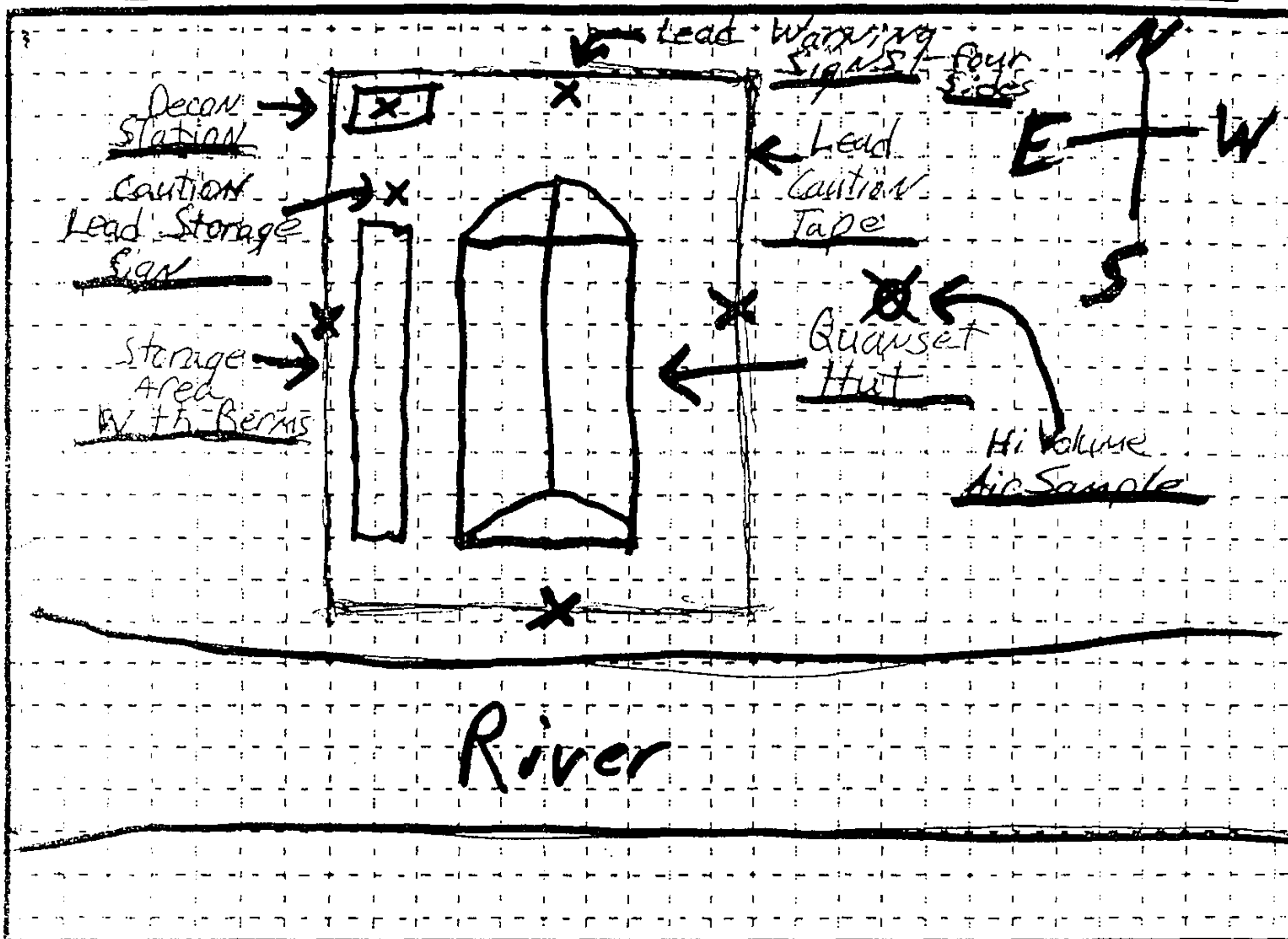
Comments: ______

Robert Parker
Foreman Signature

8-26-97
Date

Sketch or paste a pre[illegible]tched containment area into the [illegible]e below. Detail the exact location of Decon -Neg. Air Machines - Air samples - Bulk samples

Note: If a paste/taped on work area is used then all involved parties must sign through the copy sketch onto the actual page!



AIR MONITORING:

Total sample count
Area: 1
Personnels: 1
Field Blanks: ____

(Don't list personnels here. Enter them in TWA section below)

SAMPLE NUMBER	RESULTS	SAMPLE NUMBER	RESULT

TWA ____________ Name

sample # ____ # ____ # ____
(____ * ____) + (____ * ____) + (____ * ____) / 480 = ____
time l/cc time l/cc time l/cc 8 hr. TWA

____________ Name

sample # ____ # ____ # ____
(____ * ____) + (____ * ____) + (____ * ____) / 480 = ____
time l/cc time l/cc time l/cc 8 hr. TWA

COMMENTS: ____________

[signature] 8-26-97
signature date

Legend

BE - Baseline Environmental
BA - Baseline work area
AM - Area Monitor (inside)
EM - Environmental (outside)
CM - Clearance Monitor
PM - Personal Sample
EX - Excursion sample

Decon
Air Filtration
load-out static
sample locatio

DAY OF WEEK: Tuesday

WORK PERFORMED TODAY: (desribe removal procedures, amount of area contained, ACM removed, etc.)

All vehicles for us to use and the general contractor stays at a different place so we walked to the job site.
We pulled out generator and tools from storage area. The generator is for the high volume air sample pump and any power tools we might need.
We suited up and began lead painted fiber board removal from outside of the quonset hut on the East side and top. The paint is in very bad shape! It is cracking and the edges are curled up. About one third of the paint is gone. Some on the ground next to the hut. The fiber board is badly weathered and water logged. We are trying to take the board down in full sheets but is just falling apart. Unavoidable!!! I put a poly drop sheet on ground next to the bldg on the side we are working to catch paint chips and other debris like the metal trim pieces covering the cracks between each fiber board sheets. All is painted and disposed of as lead. Nails that didn't come out with the fiber board are pulled and put

Problems or Change Order Work Encountered Today:

in boxes as lead.
T.T. Middleton was on site this morning to see how the job was going. The boxes he sent down here for disposal are the wrong ones. He is going to send the right ones (EPA approved hazardous material boxes) later today when he gets back to town. Right now we are just stock piling the fiber board and debris on the 10 mil poly storage area and covered with poly at end of day.

Visits & Conversations:
(Quote conversation as accurately as possible, list persons name and time of conversation)

We continued removal all day. East, top and west side have been abated.
I ran one personal sample and one area sample all day.

No boxes showed up by end of day!

DAILY LOG

Date 8-27-9

PROJECT

Number: _____

Name: FAA - Quonset Hut

Location: Tanana, AK.

Temperature
Exterior AM: 45
PM: 60
Interior AM: _____
PM: _____

Day of Week: Wednesday

Weather
AM: Foggy & Clear
PM: Partly Cloudy & Rain

Is abatement underway?

No → Set-up activities checklist for: full scale removal project

Pre-existing conditions: _____

2. Is HVAC system deactivated? _____
3. Is Electrical locked out? _____
4. Are respirators in use during set-up? _____ Type: _____
5. Are protective suits in use? _____ Type: _____
6. Was area precleaned? _____
7. Are critical barriers established? _____
8. Are items in work area covered/sealed in 6 mil poly? _____
9. Desc. surfaces not covered with poly: _____
10. Is the decon set-up? _____
11. Is decon equipped with clean-shower-equip. room? _____
12. Number of air filtration devices on site? _____
13. Number of neg air units needed:
_____ /21750 = _____
(length*width*height) = cubic ft. # neg air
14. Are all penetration sealed? _____
15. Are workers wearing : hard hats: _____
: safety boots: _____
: safety glasses: _____
16. Is poster-board set-up displaying all required posters? _____

VISITOR LOG
List visitors name - company - reason for visit

Yes → Type or Removal today: Lead Painted Fiber Board

1. Is neg. pressure sustained? N/A
2. Methods used to identify neg pressure and proper air flow: N/A
3. Critical barriers and containment area checked to insure integrity? yes note repairs _____
4. Are wet methods being used? yes
5. Are Hepa vac's being used? yes
6. Is removed ACM being promptly bagged? N/A
7. Are bags labeled? N/A
8. Type of respirator used? 1/2
9. Are all workers wearing : Hardhats yes
: Steel-toed boots yes
(circle one): safety glasses or full face resp..
10. Type of suit's used: Tyvek Suits
11. Were the disposable suits examined for rips and mended or changed? no
12. Employee's using proper Decontamination proc.? yes
13. Was entrance to decon controlled? yes
14. Were any workers observed smoking, eating, drinking, or observed removing their respirator while in containment? If so, who? no
15. Was work area cleaned up today? yes

(answer 17-24 only if disposal was performed today)

16. Disposal method: Industrial Vac-hand load out-no disp. _
17. Was load-out decon used? _____
18. Was acm double-bagged? _____
19. Were bags labeled for asbestos? _____
20. Was owner name & address placed on bags? _____
21. Total amount of disposal: _____
22. Disposal manifest filled out? _____ Manifest # _____
23. Was copy of disposal Manifest given to office? _____
24. # of pictures taken today: 0
25. Was unknown ACM discovered today? no If so, list; location, quantity the amount and contact office.

Is abatement completed today? no If so, was final inspection performed? _____ By whom? _____
Refer to final inspection report# _____ at back of log book.

Did all personnel and visitors fill our sign-in log? yes

Name of Employee	Work Location	Work Performed	Start/Stop Total
Robert Parker	North + South sides of Quanset Hut.	Remove Lead Painted Fiber Board	7-12
E. Jay Buonocore			12-1230 lunch
	East side of Hut	Make Boxes & Fill with Fiber Board.	1230-530

Comments: ____________________

Robert Parker
Foreman Signature

8-27-97
Date

DAY OF WEEK: Wednesday

WORK PERFORMED TODAY: (describe removal procedures, amount of area contained, ACM removed, etc.)

We continued lead painted fiber board removal this morning on the North and South ends of the hut. There was approx. twelve bolts on each end wall for support, they had yellow lead paint on them. I cut them off with a sawzall and put in the box as lead contaminated. There is a two in a half foot skirting all the way around the hut. Its is made of one by six boards (wood) and is painted a light blue or gray color. It seems to have the same lead yellow paint under the gray paint. I brang it to Bob Trebbles attention. He had me take a bulk sample of the paint from the skirting. It is not in our scope of work to remove any wa skirting! We did not remove any of it! I also took a bulk sample of the wood frame from North, East and West sides of the hut. It is in our scope of work to take samples of the structure behind the lead painted fiber board. I gave all the samples to Bob Trebble.

Problems or Change Order Work Encountered Today:

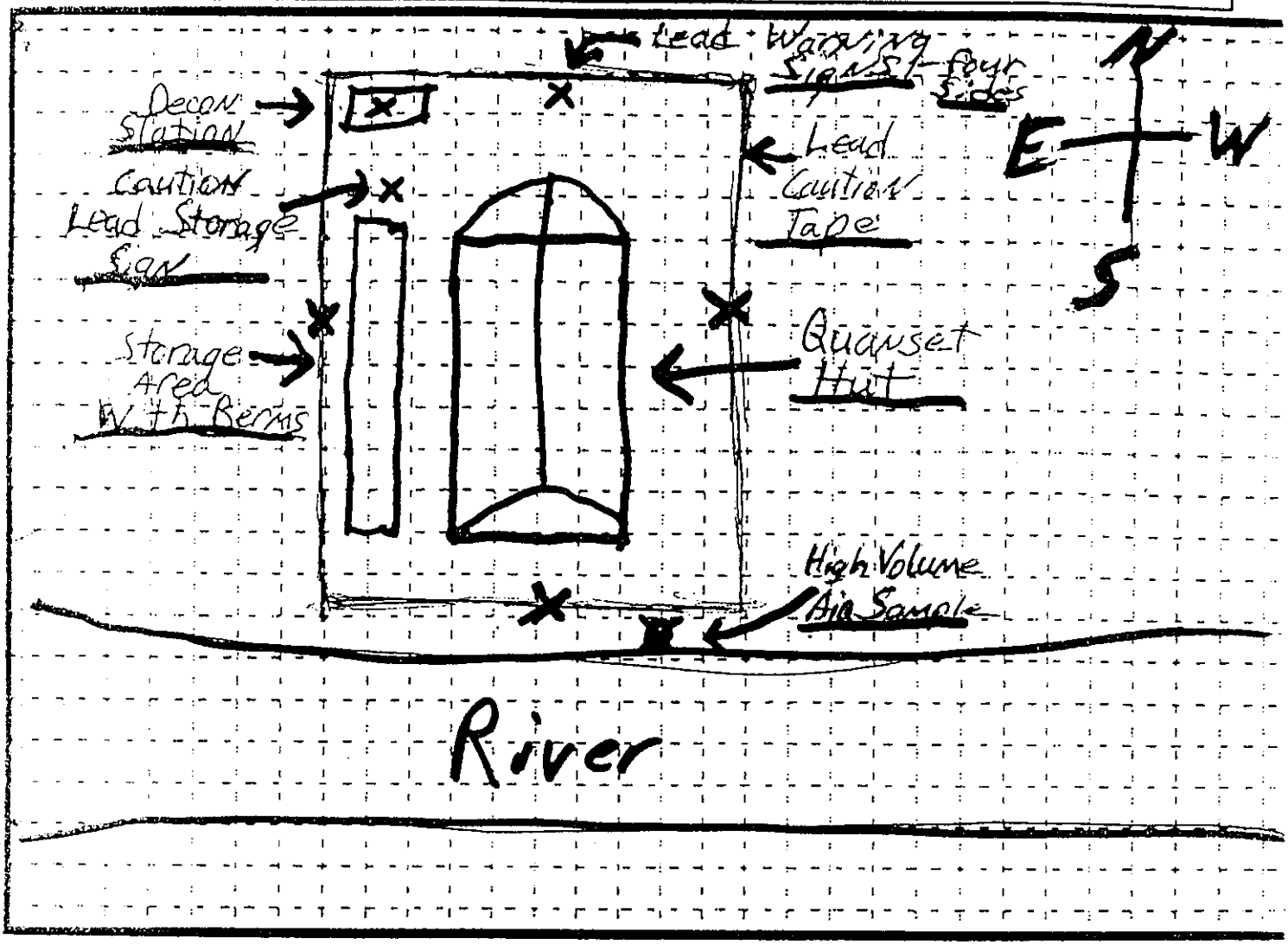
The new boxes arrived on the plane around 2:00 PM. We went and picked them up at the airport and took back to job site with a borrowed truck. We put the boxes together and lined them with six mil poly bags that we made for the boxes. Only five boxes came and we filled all five up by end of day. The boxes are secured to pallets and placed in lead storage area on 10 mil poly with berms.

Visits & Conversations:
(Quote conversation as accurately as possible, list persons name and time of conversation)

Boxes are covered with poly to keep rain off!

Sketch or paste a pre ..tched containment area into the ..e below. Detail the exact location of Decon -Neg. Air Machines - Air samples - Bulk samples

Note: If a paste/taped on work area is used then all involved parties must sign through the copy sketch onto the actual page!



AIR MONITORING:

Total sample count
Area: _____
Personnels: _____
Field Blanks: _____

(Don't list personnels here. Enter them in TWA section below)

SAMPLE NUMBER	RESULTS	SAMPLE NUMBER	RESULT

TWA _____ Name

sample # _____ (____ time • ____ l/cc) + # _____ (____ time • ____ l/cc) + # _____ (____ time • ____ /cc) / 480 = _____ 8 hr. TWA

_____ Name

sample # _____ (____ time • ____ l/cc) + # _____ (____ time • ____ l/cc) + # _____ (____ time • ____ /cc) / 480 = _____ 8 hr. TWA

COMMENTS: _____

_____ signature

_____ date

Legend

BE - Baseline Environmental
BA - Baseline work area
AM - Area Monitor (inside)
EM - Environmental (outside)
CM - Clearance Monitor
PM - Personal Sample
EX - Excursion sample

Decon
Air Filtration
load-out stati
sample locati

DAILY LOG

Date 8-28-97

PROJECT

Number: _____

Name FAA Quonset Hut

Location Tanana AK.

Temperature
Exterior AM: 40
PM: 60
Interior AM: _____
PM: _____

Day of Week
Thursday

Weather
AM: Cloudy
PM: " "

Is abatement underway?

No → Set-up activities checklist for: full scale removal project

Pre-existing conditions: _____

2. Is HVAC system deactivated?_____
3. Is Electrical locked out?_____
4. Are respirators in use during set-up?_____ Type: _____
5. Are protective suits in use?_____ Type: _____
6. Was area precleaned?_____
7. Are critical barriers established? _____
8. Are items in work area covered/sealed in 6 mil poly? _____
9. Desc. surfaces not covered with poly: _____
10. Is the decon set-up? _____
11. Is decon equipped with clean-shower-equip. room? _____
12. Number of air filtration devices on site?_____
13. Number of neg air units needed:
_____ /21750 = _____
(length*width*height) = cubic ft. # neg air
14. Are all penetration sealed?_____
15. Are workers wearing : hard hats:_____
: safety boots:_____
: safety glasses:_____
16. Is poster-board set-up displaying all required posters? _____

VISITOR LOG
List visitors name - company - reason for visit

Russell Hill
for CH2M Hill
8/28/97

Robert Parker
ARSA 8/28/97

Yes → Type or Removal today: Final Clean up around Bldg. ON The ground.

1. Is neg. pressure sustained? N/A
2. Methods used to identify neg pressure and proper air flow: N/A
3. Critical barriers and containment area checked to insure integrity? yes note repairs _____
4. Are wet methods being used? yes
5. Are Hepa vac's being used? yes
6. Is removed ACM being promptly bagged? N/A
7. Are bags labeled? N/A
8. Type of respirator used? N/A
9. Are all workers wearing : Hardhats yes
: Steel-toed boots yes
(circle one): safety glasses or full face resp..
10. Type of suit's used: Tyveks
11. Were the disposable suits examined for rips and mended or changed? NO
12. Employee's using proper Decontamination proc.? yes
13. Was entrance to decon controlled? yes
14. Were any workers observed smoking, eating, drinking, or observed removing their respirator while in containment? If so, who? NO
15. Was work area cleaned up today? yes

(answer 17-24 only if disposal was performed today)

16. Disposal method: Industrial Vac-hand load out-no disp. _
17. Was load-out decon used?_____
18. Was acm double-bagged?_____
19. Were bags labeled for asbestos?_____
20. Was owner name & address placed on bags?_____
21. Total amount of disposal: _____
22. Disposal manifest filled out?_____ Manifest # _____
23. Was copy of disposal Manifest given to office?_____
24. # of pictures taken today: 08
25. Was unknown ACM discovered today? NO If so, list: location, quantify the amount and contact office.

Is abatement completed today? yes If so, was final inspection performed? yes By whom? Bob Trebble.
Refer to final inspection report#_____ at back of log book.

Did all personnel and visitors fill our sign-in log? yes

Name of Employee	Work Location	Work Performed	Start/Stop Total
Robert Parker	Outside Quonset Hut all sides	Final Clean up of paint chips on the ground - Finish up Taping Boxs. Pick up tools and equip.	7-12 12-1230 Lunch 1230-530
E Jay Broncore			

Comments: _____

Robert Parker
Foreman Signature

8-28-97
Date

DAY OF WEEK: Thursday

WORK PERFORMED TODAY: (describe removal procedures, amount of area contained, ACM removed, etc.)

I recover five more boxes this morning. We put two more together and filled them with remaining lead fiber board and debris. We also ~~[illegible]~~ raked up and picked up paint chips that were on the ground around the building that was there previously before we started removal. The grass, dirt and paint chips were put in a box. We also used a hepa vacuum to pick up small paint chips off the ground and [illegible] chips stuck to the building frame and insulation.

[illegible] Cooper Bob [illegible] did a final inspection of our work and work area. He said everything looked good!!! This contract is completed!

After inspection we covered all the boxes with poly and put lead caution tape around all of them. I also put up a lead warning sign on the outside of the poly covering the boxes.

We cleaned and repacked all our tools and equipment in the job [illegible] bin boxes. We may be coming

Problems or Change Order Work Encountered Today:

back to do the skirting so I left all our tools here. Brian [illegible] let us store our stuff in one of the [illegible] [illegible] onsite. I put 6 mil poly down on the floor to protect the carpet. All our stuff is on top of the poly. Storage house #101

The [illegible] but we removed ~~[illegible]~~ siding from [illegible] #C30.

Visits & Conversations:

(Quote conversation as accurately as possible, list persons name and time of conversation)

Total amount of lead painted fiber board removed and boxed up.

1170 SQ. FT - Fiber-board

2 Cubic Yards of contaminated grass and dirt.

There is a total of 7 filled boxes of lead debris. approx. 2 cubic yards per box!

Sketch or paste a pre ... ched containment area into the ... e below. Detail the exact location of Decon -Neg. Air Machines - Air samples - Bulk samples

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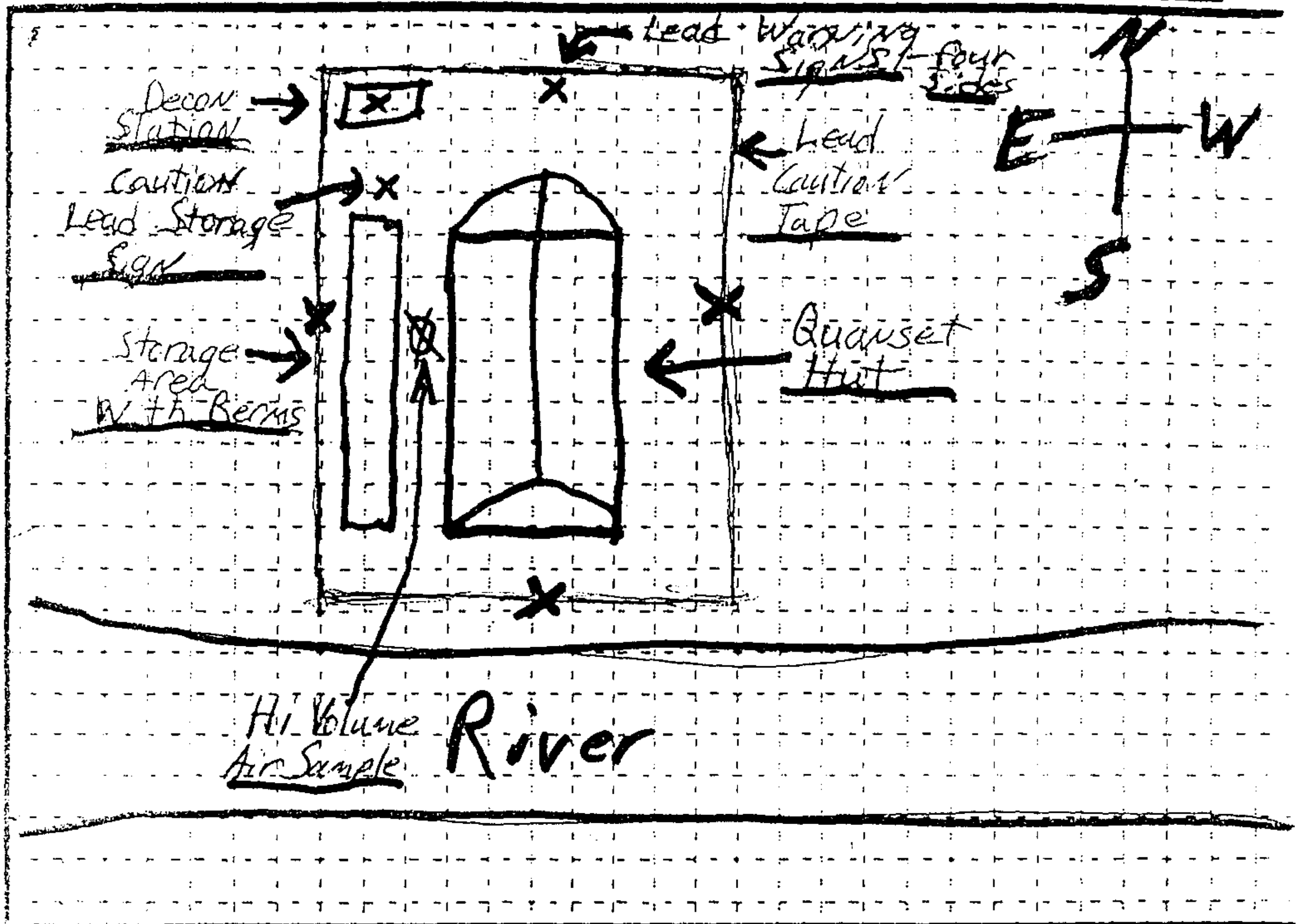

AIR MONITORING:

Total sample count
Area: 1
Personnels: 1
Field Blanks: ____

(Don't list personnels here..Enter them in TWA section below)

SAMPLE NUMBER	RESULTS	SAMPLE NUMBER	RESULTS

TWA ______________ (Name) sample # ____ (____ time • ____ l/cc) + # ____ (____ time • ____ l/cc) + # ____ (____ time • ____ l/cc) / 480 = ____ 8 hr. TWA

______________ (Name) sample # ____ (____ time • ____ l/cc) + # ____ (____ time • ____ l/cc) + # ____ (____ time • ____ l/cc) / 480 = ____ 8 hr. TWA

COMMENTS ______________

Robert Parker — signature

8-28-97 — date

Legend

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Decon
Air Filtration
load-out station
sample location