OUA 0001755

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CENPA-EN-G-M (200-1c)

12 Sep 91

MEMORANDUM FOR CENPA-EN-MB-C///3

SUBJECT: Summary of Soil Chemical Data, POL Lab, Ft. Richardson, AK

1. References:

a. Sampling, Analysis and QA/AC Plan for Petroleum Laboratory, Building 986, Ft. Richardson, AK, prepared by U. S. Army Corps of Engineers, Alaska District, Materials and Instrumentation Section, dated February 1991.

b. Memorandum, CENPD-PE-GT-L dated 1 Jul 91, subject: WO 91-SHM-379, Report of Soil Analysis, with enclosed results of analysis and data.

c. Memorandum, CENPD-PE-GT-L dated 2, July, 1991. subject: WO 91-SHM-379, Report of Soil Analysis, with inclosed Chemical Quality Assurance Report for environmental samples collected from POL Lab, Ft. Richardson, AK.

d. Guidance for using the Alaska Cleanup Matrix For Regulated USTS, 18 AAC 78.315, Table D, 15 March 1991.

2. Field objectives were to determine soil contamination characteristics from POL products in the vicinity of the underground waste POL tank at the Petroleum Laboratory Building 986, Ft. Richardson AK. Project objectives were to obtain data to close the underground storage site in accordance with Alaska Department of Environmental Conservation (ADEC) requirements, per ref. 1d.

3. Field Work Summary:

a. Field personnel were: Keith Mitchell (driller), Kenneth Mitchell and Jeffrey Alden (driller helpers), Tom Reed and Chuck Wilson, (geotechnical engineers), and Willard Ferrell (industrial hygienist). Eight borings were drilled between 1 and 12 April 1991. Drilling was accomplished with an 8-inch diameter hollow stem auger, and samples collected using a 2-1/2 inch split spoon sampler driven by a 340-pound sliding hammer and drill rod. Samples were collected at the surface and at 5 foot intervals for head space vapor analysis.

b. Auger cuttings or other soils that were contaminated were placed in drums and left on site. Soils yielding Hnu head space readings above 5 were considered contaminated. Borings were continued until samples showed no further contamination or until auger or spoon drive refusal occurred. Because of the extensive cobbles below ground, the borings were terminated between 20 and 50 feet. Samples for chemical analysis were collected and shipped to Corps of Engineers North Pacific Division (NPD) Laboratory in Troutdale, CENPA-EN-G-M SUBJECT: Summary of Soil Chemical Data, POL Lab, Ft. Richardson, AK

. . c. Two of the borings, AP-3020 and AP-3022, were finished as monitoring wells. Although the wetter sites were chosen for well locations, neither well produced enough water for sampling and analysis.

d. Heated head space analysis were conducted using a Hnu meter calibrated with isobutylene in air calibration gas. The Hnu meter was frequently checked using the same calibration gas that was used for calibration.

e. Field sampling and sample handling procedures were accomplished in accordance with the sampling plan. Data reports and photos of drive samples are on file in CENPA-EN-G-M.

4. Soil exploration logs, monitoring well logs, and bore locations are enclosed as Appendix A.

5. Chemical data (analytic results) are enclosed as Appendix B, Tables 1 through 13. Analysis was done by NPD and/or certified laboratories under contract with NPD Laboratory. The data and the associated quality control and quality assurance materials were evaluated by the North Pacific Division Laboratory chemists. The Quality Assurance Report was prepared by NPD laboratory and is on file in CENPA-EN-G-M. . . .

6. Evaluation: Chemical results that are significant in terms of ADEC Underground Storage Tank (UST) closure guidelines (ref 1d) are listed below. Field observations indicate that contamination is greater in wetter areas.

a. Fuels:	AP-3020	at	207	3460	mg/kg	soil	dry	wt.	Jet fu	uel. *	
	AP-3022	at	201	711	mg/kg	77	ΗŤ	۳.	Jet fuel. **		
	AP-3025	at	30'	37.1	mg/kg	"	tr.	".	misc.	fuel.	**
	AP-3026	at	15'	456	mg/kg	Ħ	17	".	Misc.	fuel.	**

b. Benzene: AP-3019 at 15' 39 mg/kg soil dry wt.\*

c. Total Benzene, Toluene, Ethylbenzene, and xylene. (BETX) AP-3019 at 15' 1.7 mg/kg soil dry wt. AP-3020 at 15' 61 mg/kg " ŤT ". \*\* AP-3022 at 15' 16.9 mg/kg " 17 ". \*\* AP-3025 at 15' 20.9 mg/kg " **7**7 ". \*\*

Note \* Exceeds ref 1d guidelines. \*\* May exceed ref 1d guidelines.

d. There are no ADEC guidelines for PCBs. All Samples were below laboratory Limits of detection.

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e. Pesticides and chlorinated solvents were not detected in significant concentrations, although chlorinated hydrocarbons were found in some samples where laboratory blanks showed these same compounds. These results should not be considered relevant to underground storage tank closure requirements.

firRef 1d does not include limits, based on TCLP tests, for clean up guidelines.

<u>Note</u>. TCLP TESTS: Where total metals are reported, the results are in mass/weight (mg/weight). For TCLP, concentrations are reported in mass/volume (mg/liter). Because of extraction /dilution procedures, results of total analysis are comparable to 20 times TCLP results. (Twenty times total results are equal to or less than TCLP results for the same sample).

7. Questions should be addressed to Willard Ferrell at x1291.

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## APPENDIX A

## Boring Locations and Logs

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