

## 5.0 PRESENTATION OF RESULTS

During November 2003, twenty-three samples from twelve locations in the Northwest Alleged Disposal Area located at Hamilton Army Airfield were collected and analyzed by the Army from various depths (from 0 feet to 16 feet (bgs)). This section summarizes the results and presents ranges of detected concentrations. A complete tabulation of all data results from the Army's effort is present in Appendix B of this report. The laboratory reported results below the quantitation limits (down to the method detection limits) and indicated any of these concentrations as estimated.

To summarize the data findings:

- **TPH:** TPH Gasoline and TPH Diesel were not detected above the reporting limit in any of the twenty-three samples.
- **Gross Alpha and Beta Particles:** All sample contained some measurable amounts of gross alpha and gross beta particle concentrations. The reported concentrations are considered low and could be considered background concentration levels.
- **VOC:** Acetone and methylene chloride were detected, these are common laboratory contaminates and may have been introduced during sample analysis. Trace concentrations of VOCs were detected but deemed to be insignificant.
- **SVOC:** There is only one analyte [bis (2-chloroethyl) ether] that was detected and it is not a common laboratory contaminant. The data quality is acceptable. The reported concentration is considered low.
- **Pesticides:** DDD, DDE, and DDT were detected above the reporting limit in samples from the six-foot and fourteen-foot depths of direct push location HAAF-ADA-201, (see attached figure 3-1). However, the concentrations are comparable

and consistent with the Total DDT concentrations found throughout the Hamilton Airfield Area. The Army did not analyze four shallow samples for pesticides. During the field-sampling planning, it was agreed by all parties that samples from the top few feet of soil would not be analyzed for pesticides because previous studies at Hamilton Army Airfield demonstrated the presence of pesticides in surface soils. The sample labels not analyzed are HAAF-ADA-202-02, HAAF-ADA-203-00, HAAF-ADA-206-01, and HAAF-ADA-210-02.

- Title 22 Metals:** Metal concentrations were present in all samples as expected (i.e., since metals are naturally occurring). The detected concentrations are within concentration parameters of other studies conducted at Hamilton Airfield (i.e., baseline/ambient levels) and do not appear to indicate the presence of any of the materials alleged to have been disposed of at this site.
- Mercury:** Although mercury was present in minor concentrations in some samples, they are within concentration parameters of other studies conducted at Hamilton Airfield (i.e., baseline/ambient levels) and do not appear to indicate the presence of any of the materials alleged to have been disposed of at this site.

**5.1 TPH**

Table 5-1 illustrates that no samples out of the twenty-three samples contained any TPH concentrations that would establish concern for an alleged improper disposal of gasoline or diesel range hydrocarbons. TPH as gasoline or diesel fuel was not detected in any of the samples. See Appendix B, Table B-1 for presentation of the laboratory chemical data.

<b>Table 5-1. TPH Summary</b>	<b>Lowest Concentration</b>	<b>Highest Concentration</b>
<b>TPH</b>	<b>mg/kg</b>	<b>mg/kg</b>
Gasoline	N/D	0.03J
Diesel Fuel	2J	13J
N/D = Not Detected		

## 5.2 Gross Alpha and Gross Beta Particles

Table 5-2 illustrates the range of measurable amounts of gross alpha and gross beta particles. All twenty-three samples indicated some presence of gross alpha and gross beta particle concentrations. The detected levels of gross alpha and beta particles are slightly above the reporting limit (less than 2.5 times) indicating low levels throughout the NWADA site and could be considered as background concentrations.

At the time of this report, the laboratory data analysis illustrates that there is no evidence of radiation particulates alleged to be disposed at the NWADA site. See Appendix B, Table B-2 for presentation of the laboratory chemical data.

<b>Table 5-2. Gross Alpha &amp; Beta Particle Summary</b>	<b>Low Conc.</b>	<b>High Conc.</b>
<b>Gross Alpha and Beta Particles</b>	<b>pCi/g</b>	<b>pCi/g</b>
Gross Alpha Particle	3.81	11.9
Gross Beta Particle	7.94	25.6

## 5.3 Volatile Organic Compounds (VOC)

Table 5-3 illustrates the range of VOCs detected. A few samples from the twenty-three samples analyzed contained small measurable amounts of volatile organic compounds concentrations. In the case of acetone and methylene chloride, these are common laboratory contaminants and may have been introduced during sample analysis. As for the other VOC detects, the data quality is acceptable. The reported concentrations are considered low. If the alleged materials were disposed at the NWADA site, one would expect to see additional chemicals and at elevated concentrations. Since only a few chemicals were detected at low concentrations it is not likely that VOC material was disposed of at the site. At the time of this report, the laboratory data analysis illustrates no evidence of VOC materials at the NWADA site. See Appendix B, Table B-3 for presentation of the laboratory chemical data.

<b>Table 5-3. VOC Summary</b>	<b>Low Conc.</b>	<b>High Conc.</b>
<b>Volatile Organic Compounds</b>	<b>ug/kg</b>	<b>ug/kg</b>
1,1,1-TRICHLOROETHANE	N/D	N/D

1,1,2,2-TETRACHLOROETHANE	N/D	N/D
1,1,2-TRICHLOROETHANE	N/D	N/D
1,1,2-TRICHLOROTRIFLUOROETHANE	N/D	N/D
1,1-DICHLOROETHANE	N/D	N/D
1,2-DICHLOROBENZENE	N/D	N/D
1,2-DICHLOROETHANE	N/D	N/D
1,2-DICHLOROPROPANE	N/D	N/D
1,3-DICHLOROBENZENE	N/D	N/D
1,4-DICHLOROBENZENE	N/D	N/D
2-BUTANONE (MEK)	N/D	16 J
2-HEXANONE	N/D	N/D
4-METHYL-2-PENTANONE (MIBK)	N/D	N/D
ACETONE	N/D	97 J
BENZENE	N/D	N/D
BROMODICHLOROMETHANE	N/D	N/D
BROMOFORM	N/D	N/D
BROMOMETHANE	N/D	N/D
CARBON DISULFIDE	N/D	69
CARBON TETRACHLORIDE	N/D	N/D
CHLOROBENZENE	N/D	N/D
CHLOROETHANE	N/D	N/D
CHLOROFORM	N/D	0.6 J
CHLOROMETHANE	N/D	N/D
CIS-1,2-DICHLOROETHENE	N/D	N/D
CIS-1,3-DICHLOROPROPENE	N/D	N/D
DIBROMOCHLOROMETHANE	N/D	N/D
DICHLORODIFLUOROMETHANE	N/D	N/D
ETHYLBENZENE	N/D	N/D
METHYLENE CHLORIDE	3 J	9 J
STYRENE	N/D	N/D
TETRACHLOROETHENE	N/D	N/D
TOLUENE	N/D	N/D
TOLUENE-D8	N/D	N/D
TRANS-1,2-DICHLOROETHENE	N/D	N/D
TRANS-1,3-DICHLOROPROPENE	N/D	N/D
TRICHLOROETHENE	N/D	N/D
TRICHLOROFLUOROMETHANE	N/D	N/D
VINYL ACETATE	N/D	N/D
VINYL CHLORIDE	N/D	N/D

XYLENES (TOTAL)	N/D	N/D
N/D = Not Detected		

#### 5.4 Semi-Volatile Organic Compounds (SVOC)

Table 5-4 illustrates that only one sample from the twenty-three samples contained some small measurable amounts of SVOC concentrations. There is only one analyte that was detected and it is not a common laboratory contaminant. The data quality is acceptable. The reported concentration is considered low. If SVOC type material were disposed at the NWADA site, one would expect to see additional chemicals and at elevated concentrations. Since only one chemical was detected at a trace concentration it is not likely that material was disposed of at the site. See Appendix B, Table B-4 for presentation of the laboratory chemical data.

<b>Table 5-4. SVOC Summary</b>	<b>Low Conc.</b>	<b>High Conc.</b>
<b>Semi-Volatile Organic Compounds</b>	<b>ug/kg</b>	<b>ug/kg</b>
1,2,4-TRICHLOROBENZENE	N/D	N/D
1,2-DICHLOROBENZENE	N/D	N/D
1,3-DICHLOROBENZENE	N/D	N/D
1,4-DICHLOROBENZENE	N/D	N/D
2,4,5-TRICHLOROPHENOL	N/D	N/D
2,4,6-TRICHLOROPHENOL	N/D	N/D
2,4-DICHLOROPHENOL	N/D	N/D
2,4-DIMETHYLPHENOL	N/D	N/D
2,4-DINITROPHENOL	N/D	N/D
2,4-DINITROTOLUENE	N/D	N/D
2,6-DICHLOROPHENOL	N/D	N/D
2,6-DINITROTOLUENE	N/D	N/D
2-CHLORONAPHTHALENE	N/D	N/D
2-CHLOROPHENOL	N/D	N/D
2-METHYL-4,6-DINITROPHENOL	N/D	N/D
2-METHYLNAPHTHALENE	N/D	N/D
2-METHYLPHENOL	N/D	N/D
2-NITROANILINE	N/D	N/D
2-NITROPHENOL	N/D	N/D
3,3'-DICHLOROBENZIDINE	N/D	N/D
3-NITROANILINE	N/D	N/D
4-BROMOPHENYL-PHENYLEETHER	N/D	N/D

4-CHLORO-3-METHYLPHENOL	N/D	N/D
4-CHLOROANILINE	N/D	N/D
4-CHLOROPHENYL PHENYL ETHER	N/D	N/D
4-METHYLPHENOL	N/D	N/D
4-NITROANILINE	N/D	N/D
4-NITROPHENOL	N/D	N/D
ACENAPHTHENE	N/D	N/D
ACENAPHTHYLENE	N/D	N/D
ANTHRACENE	N/D	N/D
BENZO(A)ANTHRACENE	N/D	N/D
BENZO(A)PYRENE	N/D	N/D
BENZO(B)FLUORANTHENE	N/D	N/D
BENZO(G,H,I)PERYLENE	N/D	N/D
BENZO(K)FLUORANTHENE	N/D	N/D
BENZYL ALCOHOL	N/D	N/D
BIS(2-CHLOROETHOXY)METHANE	N/D	N/D
BIS(2-CHLOROETHYL)ETHER	N/D	49 J
BIS(2-CHLOROISOPROPYL)ETHER	N/D	N/D
BIS(2-ETHYLHEXYL)PHTHALATE	N/D	N/D
BUTYLBENZYL PHTHALATE	N/D	N/D
CHRYSENE	N/D	N/D
DIBENZ(A,H)ANTHRACENE	N/D	N/D
DIBENZOFURAN	N/D	N/D
DIETHYL PHTHALATE	N/D	N/D
DIMETHYL PHTHALATE	N/D	N/D
DI-N-BUTYL PHTHALATE	N/D	N/D
DI-N-OCTYL PHTHALATE	N/D	N/D
FLUORANTHENE	N/D	N/D
FLUORENE	N/D	N/D
HEXACHLOROBENZENE	N/D	N/D
HEXACHLOROBUTADIENE	N/D	N/D
HEXACHLOROCYCLOPENTADIENE	N/D	N/D
HEXACHLOROETHANE	N/D	N/D
INDENO(1,2,3-CD)PYRENE	N/D	N/D
ISOPHORONE	N/D	N/D
NAPHTHALENE	N/D	N/D
NITROBENZENE	N/D	N/D
N-NITROSO-DI-N-PROPYLAMINE	N/D	N/D
N-NITROSODIPHENYLAMINE	N/D	N/D
PENTACHLOROPHENOL	N/D	N/D
PHENANTHRENE	N/D	N/D

PHENOL	N/D	N/D
PYRENE	N/D	N/D
N/D = Not Detected		

## 5.5 Pesticides

Table 5-5 illustrates that three samples out of the nineteen samples analyzed contained varied concentrations of pesticides. Four samples were not analyzed for pesticides; they are HAAF-ADA-202-02, HAAF-ADA-203-00, HAAF-ADA-206-01, and HAAF-ADA-210-02. Sample HAAF-ADA-201-14 contained the highest concentration of pesticide (339 ug/kg). At the time of this report, there are several pesticide studies being conducted at HAAF. From these studies, it is a known fact that varying pesticide concentrations can be found throughout the Hamilton Airfield Area (including the NWADA site). The pesticide concentrations in this report do not indicate that the NWADA site is significantly different than the rest of the Hamilton Airfield Area. See Appendix B, Table B-5 for presentation of the laboratory chemical data.

<b>Table 5-5. Pesticides Summary</b>	<b>Low Conc.</b>	<b>High Conc.</b>
<b>Pesticides</b>	<b>ug/kg</b>	<b>ug/kg</b>
4,4'-DDE	N/D	8
4,4'-DDT	N/D	339
4,4'-DDD	N/D	60
a-BHC	N/D	N/D
a-Chlordane	N/D	N/D
Aldrin	N/D	N/D
b-BHC	N/D	N/D
d-BHC	N/D	N/D
Dieldrin	N/D	N/D
Endosulfan I	N/D	N/D
Endosulfan II	N/D	N/D
Endosulfan sulfate	N/D	N/D
Endrin	N/D	N/D
Endrin aldehyde	N/D	N/D
Endrin ketone	N/D	N/D
g-BHC (Lindane)	N/D	N/D
g-Chlordane	N/D	N/D
Heptachlor	N/D	N/D
Heptachlor epoxide	N/D	N/D

Methoxychlor	N/D	N/D
Toxaphene	N/D	N/D

## 5.6 California Title 22 Metals

A total of twenty-three soil samples were collected and analyzed. Metal concentrations were present in all samples as expected (i.e., since metals are naturally occurring). The detected concentrations are within concentration parameters of other studies conducted at Hamilton Airfield (i.e., baseline/ambient levels). The results of this analysis do not appear to indicate an improper disposal of hazardous materials. See Appendix B, Table B-6 for presentation of the laboratory chemical data.

<b>Table 5-6. California Title 22 Metals Summary</b>	<b>Low Conc.</b>	<b>High Conc.</b>
<b>Title 22 Metals</b>	<b>mg/kg</b>	<b>mg/kg</b>
Antimony (Sb)	N/D	0.52 J
Arsenic (As)	1.0 J	12.1
Barium (Ba)	22.1 J	147
Beryllium (Be)	N/D	1.9
Cadmium (Cd)	N/D	0.25 J
Chromium (Cr)	6.9 J	110
Cobalt (Co)	2.9 J	17.6
Copper (Cu)	3.9 J	48.4
Lead (Pb)	4.7 J	20.4 J
Mercury (Hg)	0.04 J	0.68
Molybdenum (Mo)	N/D	3.8
Nickel (Ni)	4.1 J	105
Selenium (Se)	N/D	2.7
Silver (Ag)	N/D	0.3 J
Thallium (Tl)	N/D	N/D
Vanadium (V)	12.2	90.5
Zinc (Zn)	12.2	111

N/D = Not Detected