APPENDIX A
BIBLIOGRAPHY

Citations found in the main text are found in Chapter 10 of the Final RI. The following represents a bibliography of materials consulted during production of this document.

APPENDIX A: BIBLIOGRAPHY

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Appendix B

New York/New Jersey Harbor Sediment Studies

Brouwer, David J NAN02

From: Jonathan Greco [jxgreco@gw.dec.state.ny.us]
Sent: Friday, May 12, 2000 1:45 PM
To: Brouwer, David J
Subject: Fwd: Mercury In Ny Harbor



Mercury In Ny Harbor

Attached is some data from an on-going study of Hg contamination in the NY harbor area. Not surprisingly (based upon the sediment data previously forwarded to you), Hg contamination is somewhat ubiquitous at these very low concentrations. Despite my characterization as "very low", in many cases they are above the state standard, indicating the potential for bioaccumulation in fish. My guess is that this data may serve adequately as background data, but it still probably best to collect your own background samples.

quarts per trillion, 7 is standard

abbreviation	g/L	√	Analyte	site_name
JAMB		1.82	Hg, dissolv	JAMAICA BAY TRAWL SITE
HRTZHA		3.1	Hg, dissolv	HUDSON RIVER BTW TAPPEN ZEE AND HARLEM RIVER
PRMS		2.81	Hg, dissolv	PASSAIC RIVER, MOUTH, SURFACE
NEWB		1.13	Hg, dissolv	NEWARK BAY TRAWL SITE
LISE			Hg, dissolv	LONG ISLAND SOUND OFF EATON'S NECK NY
HRMT		1.6	Hg, dissolv	HACKENSACK RIVER MID-TIDAL
NAK		0.824	Hg, dissolv	NORTHERN ARTHUR KILL AMBIENT SITE
HRMM		1.106	Hg, dissolv	HACKENSACK RIVER, MOUTH, MID-DEPTH
PRMB		1.311	Hg, dissolv	PASSAIC RIVER, MOUTH, BOTTOM
HRTZHA		5.1	Hg, dissolv	HUDSON RIVER BTW TAPPEN ZEE AND HARLEM RIVER
HRTZHA		1.51	Hg, dissolv	HUDSON RIVER BTW TAPPEN ZEE AND HARLEM RIVER
LISJ		0.3	Hg, dissolv	LONG ISLAND SOUND, PORT JEFFERSON
LOWB		0.7	Hg, dissolv	LOWER BAY AMBIENT SITE
UER		3.08	Hg, dissolv	UPPER EAST RIVER TRAWL- HELL GATE TO THROGS NECK
UER		5.74	Hg, dissolv	UPPER EAST RIVER TRAWL- HELL GATE TO THROGS NECK
UER		0.58	Hg, dissolv	UPPER EAST RIVER TRAWL- HELL GATE TO THROGS NECK
RARB		1.06	Hg, dissolv	RARITAN BAY TRAWL SITE
LER		1.05	Hg, dissolv	EAST RIVER AMBIENT SITE
LER		0.61	Hg, dissolv	EAST RIVER AMBIENT SITE
LER		1.16	Hg, dissolv	EAST RIVER AMBIENT SITE
RARB		0.8	Hg, dissolv	RARITAN BAY TRAWL SITE
RARB		1.4	Hg, dissolv	RARITAN BAY TRAWL SITE
PRMT		2.23	Hg, dissolv	PASSAIC RIVER MID-TIDAL
HRMT		4.31	Hg, dissolv	HACKENSACK RIVER MID-TIDAL
UPB		1.34	Hg, dissolv	UPPER BAY TRAWL SITE
HRSHAR		2.22	Hg, dissolv	HUDSON RIVER SOUTH OF HARLEM RIVER
LISJ		0.34	Hg, dissolv	LONG ISLAND SOUND, PORT JEFFERSON
LISJ		0.42	Hg, dissolv	LONG ISLAND SOUND, PORT JEFFERSON
BIGHT		0.24	Hg, dissolv	NEW YORK BIGHT APEX TRAWL SITE
BIGHT		0.3	Hg, dissolv	NEW YORK BIGHT APEX TRAWL SITE
HRKP		3	Hg, dissolv	Hudson River between Kingston and Poughkeepsie
HRKP		0.4	Hg, dissolv	Hudson River between Kingston and Poughkeepsie
HRKP		0.38	Hg, dissolv	Hudson River between Kingston and Poughkeepsie
PRMS		0.61	Hg, dissolv	PASSAIC RIVER, MOUTH, SURFACE
HRHAV		3.74	Hg, dissolv	HAVERSTRAW BAY AMBIENT SITE
HRTZHA		0.83	Hg, dissolv	HUDSON RIVER BTW TAPPEN ZEE AND HARLEM RIVER
JAMB		1	Hg, dissolv	JAMAICA BAY TRAWL SITE
NAK		0.95	Hg, dissolv	NORTHERN ARTHUR KILL AMBIENT SITE
HRTZHA		0.44	Hg, dissolv	HUDSON RIVER BTW TAPPEN ZEE AND HARLEM RIVER
HRTZHA		0.51	Hg, dissolv	HUDSON RIVER BTW TAPPEN ZEE AND HARLEM RIVER
HRTZHA		7.04	Hg, dissolv	HUDSON RIVER BTW TAPPEN ZEE AND HARLEM RIVER
HRMM		1.38	Hg, dissolv	HACKENSACK RIVER, MOUTH, MID-DEPTH
PRMB		2.26	Hg, dissolv	PASSAIC RIVER, MOUTH, BOTTOM
UER		0.52	Hg, dissolv	UPPER EAST RIVER TRAWL- HELL GATE TO THROGS NECK
NEWB		3.19	Hg, dissolv	NEWARK BAY TRAWL SITE
LER		0.83	Hg, dissolv	EAST RIVER AMBIENT SITE
LOWB		0.83	Hg, dissolv	LOWER BAY AMBIENT SITE
UPB		0.74	Hg, dissolv	UPPER BAY TRAWL SITE
HRMT		2.78	Hg, dissolv	HACKENSACK RIVER MID-TIDAL
HRSHAR		2.42	Hg, dissolv	HUDSON RIVER SOUTH OF HARLEM RIVER

PRMT	1.3	Hg, dissolv PASSAIC RIVER MID-TIDAL
HRKP	1.42	Hg, dissolv Hudson River between Kingston and Poughkeepsie
LISJ	1.09	Hg, dissolv LONG ISLAND SOUND, PORT JEFFERSON

Jonathan Greco, Federal Projects Section, Division of Environmental Remediation
Dennis Wolterding, NY Harbor Dredging Team, Division of Environmental Remediation
Representative Mercury and PAH Levels in the New York-New Jersey Harbor
April 7, 2000

To help you put sediment contaminant levels in perspective in the area of Fort Totten, Willet's Point, Queens, you asked me to give you information on representative concentrations of mercury (Hg) and total polycyclic aromatic hydrocarbons (PAH's) in the substrate of the New York-New Jersey Harbor (Harbor).

There is a great deal of data, widely dispersed, on sediment contamination in the vast Harbor area (CCMP, 1996; Adams et. al. 1996) and, even now, the states of New York and New Jersey (as well as others) are collecting more as part of the Harbor-wide Contaminant Assessment and Reduction Project (CARP). Some mercury and PAH data is available from the CARP study, but most of the sediment contaminants have yet to be reported; indeed, sampling is still ongoing.

Nevertheless, the general tenor of Hg and PAH contamination in the Harbor substrate is established from previous studies, most particularly, the 1993-94 R-EMAP investigation (Adams et. al. 1996). Valuable information also accrues from special environmental, academic and decontamination studies (e.g. CCMP, 1996; Bopp et. al, 1993; Bopp et. al., 1996; Stern et. al., 1997; ITEX, 1997). I've consulted these studies to provide you with representative values, but no attempt has been made for a compendious survey. If you require more Harbor data to evaluate the Fort Totten project, I shall attempt to provide it to you on a mutually agreeable schedule. Frankly, however, the information here is sufficient for the gist of the matter.

Before I summarize the data, I think a short preface on the environmental setting of the New York New Jersey Harbor is useful. To quote the R-EMAP study (Adams et. al. 1996; 1.1 Background):

> "The land uses surrounding the New York/New Jersey Estuary [both historic and modern], makes the Harbor particularly susceptible to toxic contamination. For more than a century, it has been the recipient of pollutants generated by the human activities that exist around it. The Harbor is surrounded by a population of over 20 million people and concentrated refining and manufacturing industries. It is also one of the most heavily utilized shipping ports on the east coast. Sources of toxicants found in the Harbor include municipal and industrial discharges, atmospheric inputs, non-point source runoff, hazardous waste sites, landfills, combined sewer overflows and accidental spills. Additionally, Harbor sediments are contaminant reservoirs, which can function as a secondary source. . Since the Bight Apex [New York Bight] and Long Island Sound receive Harbor outflow, both are affected by Harbor contaminants."

As described in the CARP background and objectives, (http://internal/home/dcs/dredge/conred3.htm) several classes of toxic chemicals are responsible for significant and widespread contamination in the Harbor sediments. This contamination causes them to fail the federal government's tests for unrestricted ocean placement of dredged material [and to be toxic to much of the biota that once inhabited the uncontaminated estuarine environment]. Although other chemicals may be significant in specific local situations, the major classes of toxic chemicals of concern for the NY-NJ harbor region are: **PCBs, PAHs, dioxins and furans, certain chlorinated pesticides; and the heavy metals mercury and cadmium.**

Harbor sediments, however, are variable in their tendency to capture and retain contaminants, a function basically of their grain size, mineralogy and organic carbon content (Burton, 1995). Just as biota bio-concentrate pollutants in varying degrees within their tissues from low concentrations in the water column, sediments effectively geo-concentrate them. An organic clay exposed to a source of cations or hydrophobic organics will always show higher concentrations of these than a quartz gravel exposed to the very same loading (NAPL's excepted).

Many areas of the Harbor contain highly organic fine-grained sediments (so-called "black mayonnaise") and their total organic content (TOC) commonly ranges from 3 to 10% (Stern et. al. 1997). By contrast

some parts of the Harbor, and particularly the New York Bight, which is a higher energy environment, have substrates dominated by coarser textured sands and gravels, with low silt and clay fractions and TOC's as low as 0.05 percent (MMS, 1999). The R-EMAP Study, which concentrated on the biological impacts of Harbor pollutants and restricted itself to surficial chemical contaminants within the upper 2 centimeters of substrate, reports that 62 percent of Harbor sediments contain 0.5 to 3.4 percent TOC; however, organic carbon levels are highly variable and some sub-basins of the Harbor, such as Newark Bay, have no sites where TOC is less than 0.5 percent.

Because a sediment's texture and organic carbon content are so influential in determining its pollutant capture efficiency, one can confidently expect elevated levels of contaminants in the Harbor's TOC-enriched, fine-grained clastics regardless of the provenance of the chemicals. This does not mean that a "black mayonnaise" from Newtown Creek, an area of longstanding sewage and industrial discharges, will be equal in pollutants to an identical sediment well away from point and non-point source contamination. But it does mean that a black mayonnaise is almost sure to contain significantly more chemicals, including mercury and PAH's, than a clean quartz gravel exposed to the same (or even greater) pollutant flux. Insufficient attention to sedimentology in the review of substrate data will confuse analysis of potential sources.

SOME MERCURY AND PAH CONCENTRATIONS IN NY-NJ HARBOR SEDIMENTS

To assist you in putting sediment concentrations of mercury and PAH's in perspective, the following are some values of those parameters from the New York-New Jersey Harbor:

R-EMAP: The 1996 R-EMAP Study (Adams et. al. 1996) was a wide-area survey of surficial sediments (the top 2 centimeters said to represent modern deposition) in which 168 stations in the Harbor and Bight Apex (see Figure 2-1; Attachment 1) were sampled for contaminants of concern (see Table 2-3; Attachment 2)—including mercury and 23 PAH's--in the summers of 1993 and '94 using a stratified random design. The Harbor-Bight was divided into six sub-basins (Newark Bay; Lower Harbor; Upper Harbor; Jamaica Bay, Western Long Island; and the Bight Apex) and each of these were sampled at 14 stations over the two years. Thus, 28 samples were gotten from each sub-basin.

The percent silt and clay (area-weighted mean values) ranged from a low of 7.7 percent for the Bight Apex (which consists mostly of coarse-grained clastics) to 68.1 percent in Newark Bay (see Table 3-1; Attachment 3); Western Long Island Sound, which includes Willett's Point where Fort Totten is located, averaged 63.2 percent silt and clay, indicating a fine-grained substrate and largely depositional environment. Average TOC ranged from a low of 1.2 percent in the Bight Apex to a high of 2.5 percent in the Upper Harbor, with Western Long Island Sound close to the maximum at 2.3 percent.

Based upon these parameters alone (as given in Attachment 3), we may predict that mercury and PAH's will be elevated in the fine-grained sediments of Western Long Island Sound as well as in the other sub-basins of the Harbor with the arguable exception of the Bight Apex.

MERCURY: The area-weighted mean concentrations for mercury are given in Appendix E of the R-EMAP Study (see Attachment 4) for the Harbor as a whole and for each of the six sub-basins: For the entire Harbor, mercury averages **0.74 ppm** (+/- 0.14 for the 90 percent confidence interval, CI; thus the 90% Upper Confidence Limit, UCL, is **0.88 ppm Hg**). Mercury's area-weighted average is, predictably, lowest in the Bight Apex (**0.12 ppm**) and highest in Newark Bay (**2.59 ppm**); it is **0.22 ppm** in the Western Long Island Sound sub-basin but this average is not typical of the Fort Totten area (see following)

The R-EMAP report, unfortunately, does not give the ranges for the parameters, but it does show the relative contamination at the various sub-basin stations in reference to common sediment toxicity measures (NYSDEC (1993); Long and Morgan's (1990) and Long et. al's (1995)). Thus, mercury (Figure 4-6, Attachment 5) is shown to be most elevated—consistently above the **0.71 ppm ER-M** (Effects Range—Median) of Long et. al. 1995 in the westernmost extent of Western Long Island Sound close to the Fort Totten area. Moreover, one recent sediment sample under the CARP study from **Long Island Sound Ambient Station 14** near the Throg's Neck Bridge (CARP database query results--Attachment 6), and thus

close to Fort Totten, shows a mercury level of **1470 ppb (1.47 ppm)**. Given the distribution of high mercury data in the western part of this sub-basin, the CARP value is probably fairly typical and may be low for more TOC-rich sediments.

Apropos to this, other studies (Stern et. al. 1997; ITEX; 1997; Bopp et. al., 1993; 1996) show that fine-grained sediments from industrialized areas in the Harbor, such as Newtown Creek and Port Jersey, can exceed **10 ppm** and even **20 ppm mercury** (Attachments 7 and 8). The R-EMAP data for Newark Bay sub-basin, as mentioned, shows it to have weighted mercury levels averaging **2.59 ppm** (90 percent CI of +/- 0.58; 90 percent UCL= 3.17 ppm). These elevated levels of mercury reflect the fine-grained, organic-carbon rich nature of the sediments in the sub-basin and the density of industrial/commercial activity in the catchment area.

Finally, it should be pointed out that Harbor contamination depends not just an areal and sedimentologic factors, but on stratigraphic variables as well (a reflection, of course, in intact sections of the age of deposition). Bopp et. al., 1993, examined intact sediment profiles from Jamaica Bay and dated them using radionuclide markers, such as Cesium 137 and Beryllium 7. In core JB13, mercury levels varied (Table 4; Attachment 9) from **0.9 ppm Hg** in the top 2 centimeters of the core (the most recent deposition in the late 1980's, when the core was taken) to **2.4 ppm** in the 28-32 cm horizon (representing deposition in about 1964-1970). Though all of these values show anthropogenic enrichment of mercury, Bopp et. al., 1993, (citing Marowsky and Wedepohl, 1971) estimate that pre-industrial age levels of Hg in the Harbor were **about 0.18 ppm)**

Thus, we may anticipate that mercury and other contaminant values vary with depth—as well as areal distribution--and can be expected to be higher in horizons from earlier in this Century. Bopp et. al., 1996 provide additional contaminant profiles for dated cores in the Harbor and tributaries. Again, mercury is shown to be higher historically (in about 1960's to early 1970's) at all stations than it is now. A core from the Upper Harbor (mercury distribution, Attachment 10) shows a historical high of **4.3 ppm Hg** and a most recent concentration (bracketed in the illustration) of **1.8 ppm Hg**. One from Raritan Bay gives a historical high of **2.9 ppm Hg** (0.5 ppm, most recent).

R-EMAP data, unfortunately, represents surficial contamination as of 1993-94 and cannot tell us about historical levels even at the same stations. CARP, which includes vibracore samples, the results of which are not yet available, will help in this regard.

Mercury and Some Other Studies: I have already alluded to significant mercury data for the Harbor from studies other than R-EMAP, but a few more words are in order. Stern et. al. (1997) and ITEX (1997) report on pilot decontamination technologies for Harbor dredge—from Newark Bay, Port Jersey and Newtown Creek, among others--and include both raw and treated levels of numerous contaminants including mercury (and PAH's discussed later). Tables 1 to 4 of Stern et. al. (1997; Attachment 7) give "as-dredged" values for a number of samples typical of the type that would require decontamination: fine-grained, high TOC sediments far too polluted to meet US Army Corps of Engineers' 1991 ("Green Book") Criteria for Ocean Disposal. Similarly, ITEX (1997, Attachment 8) gives raw sample data for Port Jersey sediment. The following is a statistical summary of these values:

STUDY	AVERAGE MERCURY CONCENTRATION (RANGE) IN PPM	STANDARD DEVIATION (SD) PPM	SAMPLE NUMBER (N)
Stern et. al. (1997)	4.18 (1.29-13.1)	4.49	6
ITEX (1997)	16.74 (10.68-22.1)	5.44	4

As mentioned, since these sediments derive from some of the more industrialized areas of the Harbor, it is scarcely surprising that they show a range of Hg values that are greater than many reported in R-EMAP or Bopp et. al. (1993; 1997) or R-EMAP.

Nonetheless, the mean Hg values of these samples, particularly those of Stern et. al. (1997), in the 4 ppm range are probably typical of what one might expect of TOC-rich, fine grained Harbor sediments from the more degraded areas of the Port of New York and New Jersey.

Further support of the omnipresence of mercury in low ppm levels in Harbor substrate comes from the metals values obtained so far in the CARP sediment samples (Attachment 6). Although results from only 18 surficial sediment samples—taken from ponar grabs not cores—are now available, they are well within the range that one expects from previous studies and also exhibit the variability one expects between the different sub-basins of the Harbor. Thus, the highest CARP value of **4,220 ng/g** (ppb) or **4.22 ppm** is found in the Hackensack River tributary to Newark Bay (Station 1); the lowest of **40.2 ppb** or **0.040 ppm** is from Station 10 in the New York Bight. The closest sample to Fort Totten, Long Island Sound Station 14, as earlier mentioned, shows an elevated, but by no means remarkable, Hg concentration of **1,470 ppb** or **1.47 ppm.** It is expected that when CARP vibracore data results come in even higher values of mercury will be found in the deeper horizons (e.g. 30 centimeters) of almost all stations based upon the greater past levels of anthropogenic pollution of that metal.

PAH's:
As a major industrial center and port for over a century, subject to widespread discharges of petroleum products and wastes, one would expect elevated levels of PAH's in Harbor sediments, particularly those fractions containing fine-grained texture and high TOC (PAH's are hydrophobic, with high organic-carbon partition coefficients, Koc; they have strong affinity for organic-rich media, NYSDEC, 1993). One is not disappointed.

The R-EMAP study sampled for 23 individual PAH compounds and reported these results as well as Total PAH's (Appendix E; Attachment 11). The Harbor as a whole has an area-weighted average of total PAH's of **7,177.4 ppb or 7.2 ppm** (90 percent confidence interval of +/- 2,607.9 ppb; 90 percent UCL of 9,785.3 ppb). The Upper Harbor sub-basin has the highest average concentration of PAH's of **22,141 ppb or 22.1 ppm** (90 percent CI =+/- 12,165; 90 percent UCL = 34,306 ppb or 34.3 ppm); the Bight Apex, predictably has the lowest at 730.0 ppb (90 percent CI= +/- 521.7 ppb; 90 percent UCL = 1251.7 ppb). The Western Long Island Sound sub-basin, encompassing the Fort Totten area, has an area weighted average of **3,749.7 ppb** or **3.7 ppm** (90 percent CI = +/- 1,310.2) and a 90 percent UCL of **5,059.9 ppb** or **over 5 ppm.** Moreover, the distribution of total PAH's by R-EMAP station (Figure 4-8; Attachment 12) shows that the highest PAH values, in excess of **44,792 ppb** (almost 45 ppm) are found in the western end of this Sub-basin, including one station not far from the Willett's Point area. I need not discuss the individual PAH compounds—the concentrations of which are given in attached Appendix E—except to note the elevated values of several of the carcinogenic PAH's (C-PAH's) as follows:

C-PAH (ppb)	Harbor Average (90% UCL)	Upper Harbor (90% UCL)	Western Long Island Sound (90% UCL)
Benzo(a)anthracene	486.83 (616.18)	1525.6 (2118.7)	395.2 (715.89)
Benzo(a)pyrene	303.05 (386.17)	889.96 (1265.2)	194.09 (246.47)
Benzo(k)fluoranthene	781.78 (959.29)	2107.79 (2877.73)	518.25 (683.06)
Chrysene	544.76 (690.61)	1653.2 (2317.9)	311.2 (435.15)
Dibenz(a,h)anthracene	79.42 (110.52)	247.84 (394.13)	34.93 (45.58)
Indeno(1,2,3-c,d)pyrene	291.62 (381.7)	806.89 (1216.83)	195.27 (255.88)

Given the high values of total and carcinogenic PAH's, it is scarcely surprising that a reported positive correlation exists between Harbor/Bight sediments and toxic responses to polycyclic aromatic hydrocarbons in test organisms (CCMP, 1996).

As if the R-EMAP levels were not high enough, Stern et. al, 1997, show astronomical levels from Newtown Creek, Newark Bay and other Harbor samples (Attachment 7); one sediment being pilot tested for decontamination using a solvent extraction process had an as-dredged total PAH concentration of

858,000 ppb (858 ppm) and benzo(a)anthracene level of **38,490 ppb (38.5 ppm)**. Two other samples from Newtown Creek had total PAH concentrations of **113,000 ppb** and **130,000 ppb** with benzo(a)anthracene concentrations of 4,484 ppb and 8,970 ppb, respectively. While such samples are admittedly from the more polluted areas of the Harbor, **the fact is that pervasive and high-level PAH contamination is characteristic of sediments in the New York-New Jersey metropolitan area.**

Lastly, only one CARP sediment sample result is available for PAH's, a November 1999 grab from Prall's Island in the Arthur Kill. Total PAH's for this sample, as the sum of 22 individual compounds and compound groups (Attachment 13) are **80,902 ppb** (81 ppm). Benzo(a)anthracene weighs in at **5,950 ppb** and Chrysene at **7,780 ppb**. Clearly, the Arthur Kill is a more polluted area of the New York-New Jersey Harbor than say the Bight Apex, but the values for this one sample are consistent with what has been discussed earlier throughout the Harbor.

CONCLUSION: A brief sample of mercury and PAH results for sediments in the New York-New Jersey Harbor shows that both of these chemical parameters are elevated, to various degrees, throughout the waterway. Sediment mercury values in the low parts per million range and total PAH's over 10 ppm (10,000 ppb) are not remarkable and may be anticipated in areas of fine-grained substrate with high organic carbon content. Very polluted areas of the Harbor will exhibit Hg concentrations approaching or exceeding 20 ppm and total PAH's exceeding 100 ppm (100 ppb). Not surprisingly, the near ubiquity of elevated mercury and polycyclic aromatic hydrocarbons in concentrations above NYSDEC (1993) and other applicable sediment screening guidelines (e.g. Long et. al. 1995) has been noted for quite some time, and both chemical parameters, in addition to several others such as PCB's and dioxins, are implicated in the stressed biota of the Harbor.

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ATTACHMENT 1

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SEDIMENT QUALITY OF THE NY/NJ HARBOR SYSTEM

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ATTACHMENT 1



Figure 2-1. Map of the six study sub-basins: Upper Harbor, Newark Bay, Lower Harbor (includes Raritan and Sandy Hook Bays), Jamaica Bay, western Long Island Sound and the NY Bight Apex.

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ATTACHMENT 2

Table 2-3
Analytical Measurements for Sediment Samples

Polyaromatic Hydrocarbons (PAHs)		
Acenaphthene	Biphenyl	1-Methylnaphthalene
Acenaphthylene	Chrysene	1-Methylphenanthrene
Anthracene	Dibenz(a,b)anthracene	Naphthalene
Benz(a)anthracene	2,6-Dimethylnaphthalene	Perylene
Benzo(b,k)fluoranthene	Fluoranthene	Phenanthrene
Benzo(g,h,i)perylene	Fluorene	Pyrene
Benzo(a)pyrene	Ideno(1,2,3-c,d)pyrene	2,3,5-Trimethylnaphthalene
Benzo(e)pyrene	2-Methylnaphthalene	

DDT and its Metabolites		Chlorinated Pesticides other than DDT	
o,p'-DDD	p,p'-DDE	Aldrin	Heptachlor
p,p'-DDD	o,p'-DDT	Alpha-Chlordane	Heptachlor epoxide
o,p'-DDE	p,p'-DDT	Trans-Nonachlor	Hexachlorobenzene
		Dieldrin	Lindane (γ-BHC)
		Endrin	Mirex

Major Elements	Trace Elements		
Aluminum	Antimony	Copper	Selenium
Iron	Arsenic	Lead	Silver
Manganese	Cadmium	Mercury	Tin
Silicon	Chromium	Nickel	Zinc

PCB Congeners (20)			
No.	Congener Name	No.	Congener Name
8	2,4'-dichlorobiphenyl	118	2,3',4,4',5-pentachlorobiphenyl
18	2,2',5-trichlorobiphenyl	126	3,3',4,4',5-pentachlorobiphenyl
28	2,4,4'-trichlorobiphenyl	128	2,2',3,3',4,4'-hexachlorobiphenyl
44	2,2',3,5-tetrachlorobiphenyl	138	2,2',3,4,4',5'-hexachlorobiphenyl
52	2,2',5,5'-tetrachlorobiphenyl	153	2,2',3,4,4',5'-hexachlorobiphenyl
66	2,3',4,4'-tetrachlorobiphenyl	170	2,2',4,4',5,5'-hexachlorobiphenyl
101	2,2',4,5,5'-pentachlorobiphenyl	180	2,2',3,3',4,4',5-heptachlorobiphenyl
105	2,3,3',4,4'-pentachlorobiphenyl	187	2,2',3,4,4',5,5'-heptachlorobiphenyl
110/77	2,3,3',4',6-pentachlorobiphenyl/ 3,3',4,4'-trichlorotetrabiphenyl	195	2,2',3,3',4,4',5,6-octachlorobiphenyl
		206	2,2',3,3',4,4',5,5',6-nonachlorobiphenyl
		209	2,2',3,3',4,4',5,5',6,6'-decachlorobiphenyl

Dioxin and Furan Congeners*			
2,3,7,8-TCDD	1,2,3,4,6,7,8-HpCDD	2,3,7,8-TCDF	2,3,4,6,7,8-HxCDF
1,2,3,7,8-PeCDD	OCDD	1,2,3,7,8-PeCDF	1,2,3,4,6,7,8-HpCDF
1,2,3,4,7,8-HxCDD		2,3,4,7,8-PeCDF	1,2,3,4,7,8,9-HpCDF
1,2,3,6,7,8-HxCDD		1,2,3,4,7,8-HxCDF	OCDF
1,2,3,7,8,9-HxCDD		1,2,3,7,8,9-HxCDF	

Other Measurements				
AVS/SEM	Grain Size	*Clostridium*	TOC	Butyltins

*only analyzed on Upper Harbor, Jamaica Bay, & Lower Harbor samples

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ATTACHMENT 3

3.0 PHYSICAL PARAMETERS

3.1 BACKGROUND

Many factors potentially influence chemical and biological measurements. The measurement of physical parameters provides information necessary to interpret chemical and biological data accurately. Sediment grain size and total organic carbon content can determine the magnitude and distribution of contaminants (Burton, 1995). Fine-grained sediments generally retain more contamination than sands because of the greater surface area to volume ratio of fine particles and surface electric charges that can render them more chemically and biologically reactive (Plumb, 1981; Power and Chapman, 1995). Physical characteristics, such as salinity, sediment type and depth, are important parameters because they can influence the distribution and abundance of benthic assemblages (Snelgrove and Butman, 1994; Holland et al., 1989).

At each site where sediment was collected, water column depth, temperature, salinity, and dissolved oxygen were measured. The water column measurements consisted of a single CTD profile at each station. Physical characteristics of the sediments included grain size (as % silt/clay) and total organic carbon (TOC) content.

3.2 CHARACTERIZATION OF THE HARBOR

3.2.1 Depth

All Harbor sub-basins, except the Upper Harbor, had similar mean depths (Table 3-1). The Upper Harbor mean at 10 m, was 3-4 m deeper than other sub-basins in the Harbor. The mean

Table 3-1
Area-Weighted Means of Depth and Sediment Physical Parameters
(± 90% confidence interval)

	Harbor	Jamaica Bay	Newark Bay	Lower Harbor	Upper Harbor	W.LI. Sound	Bight Apex
Depth (m)	6.9 ±0.9	6.4 ±1.1	6.7 ±1.5	5.9 ±1.2	10.1 ±1.8	16.6 ±2.4	22.2 ±2.8
%Silt/Clay	34.8 ±6.1	30.3 ±9.7	68.1 ±8.6	26.8 ±8.8	51.0 ±10.1	63.2 ±10.5	7.7 ±3.4
%TOC	1.9 ±0.3	1.9 ±0.7	2.3 ±0.6	1.7 ±0.4	2.5 ±0.5	2.3 ±0.7	1.2 ±0.4

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Attachment 4

Table E-1 Continued.	Harbor	Jamaica Bay	Newark Bay	Lower Harbor	Upper Harbor	W. Long Is. Sound	Bight Apex
Mercury	0.74 ±0.14	0.29 ±0.13	2.59 ±0.58	0.61 ±0.21	0.80 ±0.16	0.22 ±0.04	0.12 ±0.10
Nickel	24.07 ±2.90	17.80 ±10.31	50.81 ±8.72	20.08 ±4.03	30.92 ±3.80	26.92 ±3.45	8.69 ±2.50
Selenium	3.82 ±1.02	1.34 ±0.56	10.98 ±4.14	3.60 ±1.50	3.41 ±1.28	2.16 ±0.73	0.85 ±0.71
Silicon	354788 ±16077	349968 ±26009	315399 ±16061	367569 ±24327	330116 ±17836	300703 ±19640	412862 ±12327
Silver	1.59 ±0.30	1.14 ±0.42	2.98 ±0.61	1.29 ±0.44	2.28 ±0.46	1.19 ±0.32	0.23 ±0.14
Tin	4.96 ±1.54	2.84 ±1.43	15.29 ±13.27	3.43 ±1.40	7.45 ±4.44	2.98 ±0.96	1.57 ±0.66
Zinc	170.06 ±25.56	134.89 ±74.55	308.04 ±55.85	162.56 ±37.38	166.68 ±26.28	177.34 ±24.25	47.02 ±10.06
ORGANICS (ppb)							
Total PCBs	112.14 ±21.11	56.17 ±33.79	377.81 ±135.14	60.23 ±21.94	214.37 ±62.31	42.75 ±11.05	27.63 ±20.49
Parent DDT	9.57 ±9.38	0.92 ±0.15	132.97 ±147.29	1.28 ±0.31	0.99 ±0.19	0.97 ±0.20	1.33 ±0.57
Total DDD	14.16 ±5.98	2.83 ±1.32	122.41 ±89.49	5.71 ±2.60	11.94 ±3.60	3.00 ±0.65	1.75 ±1.30

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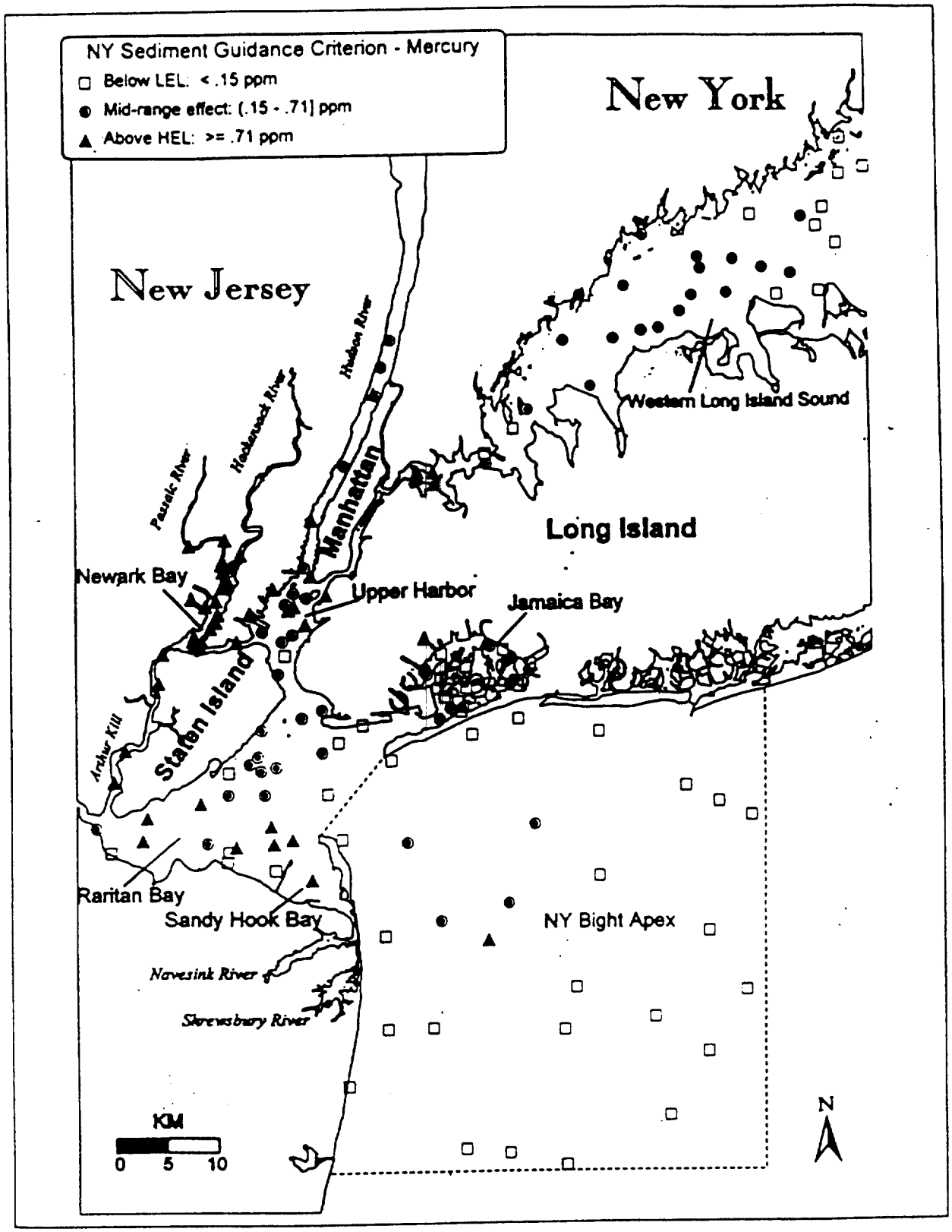

Figure 4-6. Distribution of mercury concentrations by station. Sediment Guidance Criteria LEL and HEL (NYSDEC, 1993) are equivalent to ER-L and ER-M (Long & Morgan, 1991; Long et al., 1995a).

ATTACHMENT C

[redacted]

Database Query Results
Metals Results Without QC samples

Bottom

Your query produced 18 records.

STATION_NAME	SAMP_ID	DATE_START	MEDIUM	PARAM_NAME	RESULT	LAB_QUAL	UNIT
ARTHUR KILL AMBIENT STATION 7	1JMS00008	13-jul-1999	SEDIMENT	TOTAL Mercury	3630	V	NG/G_DRYWT
BIGHT AMBIENT STATION 10	1JMS00011	24-aug-1999	SEDIMENT	TOTAL Mercury	40.2	V	NG/G_DRYWT
EAST RIVER AMBIENT STATION 13	1JMS00014	14-jul-1999	SEDIMENT	TOTAL Mercury	985	V	NG/G_DRYWT
HACKENSACK RIVER AMBIENT STATION 1	1JMS00002	19-jul-1999	SEDIMENT	TOTAL Mercury	4220	V	NG/G_DRYWT
HACKENSACK RIVER AMBIENT STATION 5	1JMS00003	13-jul-1999	SEDIMENT	TOTAL Mercury	2430	V	NG/G_DRYWT
HUDSON RIVER AMBIENT STATION 16	1JMS00017	14-jul-1999	SEDIMENT	TOTAL Mercury	634	V	NG/G_DRYWT
HUDSON RIVER AMBIENT STATION 17	1JMS00018	20-jul-1999	SEDIMENT	TOTAL Mercury	566	V	NG/G_DRYWT
HUDSON RIVER AMBIENT STATION 18	1JMS00019	20-jul-1999	SEDIMENT	TOTAL Mercury	465	V	NG/G_DRYWT
HUDSON RIVER AMBIENT STATION 19	1JMS00001	08-jul-1999	SEDIMENT	TOTAL Mercury	101	V	NG/G_DRYWT
JAMAICA BAY AMBIENT STATION 11	1JMS00012	24-aug-1999	SEDIMENT	TOTAL Mercury	27.2	V	NG/G_DRYWT
LONG ISLAND SOUND AMBIENT STATION 14	1JMS00015	14-jul-1999	SEDIMENT	TOTAL Mercury	1470	V	NG/G_DRYWT
LONG ISLAND SOUND AMBIENT STATION 15	1JMS00016	25-aug-1999	SEDIMENT	TOTAL Mercury	434	V	NG/G_DRYWT
LOWER BAY AMBIENT STATION 9	1JMS00010	24-aug-1999	SEDIMENT	TOTAL Mercury	265	V	NG/G_DRYWT
NEWARK BAY AMBIENT STATION 6	1JMS00007	13-jul-1999	SEDIMENT	TOTAL Mercury	1790	V	NG/G_DRYWT
PASSAIC RIVER AMBIENT STATION 2	1JMS00004	23-aug-1999	SEDIMENT	TOTAL Mercury	2950	V	NG/G_DRYWT

NEAR HROG'S NECK BRIDGE

ATTACHMENT 6

PASSAIC RIVER AMBIENT STATION 4	1JMS00006	13-jul-1999	SEDIMENT	TOTAL Mercury	2870	V	NG/G_DRYWT
RARITAN BAY AMBIENT STATION 8	1JMS00009	13-jul-1999	SEDIMENT	TOTAL Mercury	1850	V	NG/G_DRYWT
UPPER BAY AMBIENT STATION 12	1JMS00013	14-jul-1999	SEDIMENT	TOTAL Mercury	1800	V	NG/G_DRYWT

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ATTACHMENT 7

BNL- 65253

INTEGRATED SEDIMENT DECONTAMINATION FOR THE NEW YORK/NEW JERSEY HARBOR

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Table 1. Contaminant Concentrations of Untreated As-Dredged NY/NJ Harbor Sediments (Dry Weight)

Contaminant	Newtown Creek (Bench)	Newtown Creek (Pilot)	Port Newark	NJ Non-Resid.[1]	NJ Resid.[2]	NY Resid.[3]
2,3,7,8 TCDD (ppt)	42	81	66	—	—	—
OCDD (ppt)	17,463	38,881	5560	—	—	—
TCDD/TCDF TBQ (ppt)	518	1570	109	—	—	—
Total PCBs (ppm)[4]	1.55	1.78	.141	2	0.49	1
Anthracene (ppb)	3702	1074	167	10,000	10,000	50,000
Benzo(a)anthracene (ppb)	4484	8970	283	4000	900	224
Chrysene (ppb)	4564	9973	365	40,000	9000	400
Total PAHs (ppb)[4]	113,000	130,000	30,000	—	n/a[5]	396,500
Arsenic (ppm)	33	42	15	20	20	7.5
Cadmium (ppm)	37	47	6	100	1	1
Chromium (ppm)	376	432	171	—	—	10
Copper (ppm)	1171	1410	212	600	600	25
Lead (ppm)	617	631	300	600	400	SB[6]
Mercury (ppm) total	1.3	3.7	2.2	270	14	0.1
Zinc (ppm)	1725	2070	526	1500	1500	20

[1]NJ Department of Environmental Protection. Non-residential soil, direct contact. J.J.A.C. 7:26D, revised 7/11/96. [2]NJ Department of Environmental Protection. Residential soil, direct contact. J.J.A.C. 7:26D, revised 7/11/96. [3]NY Department of Environmental Conservation. Recommended soil cleanup objectives. HWR-94-046 (Revised). January 24, 1994. [4]See Reference 12. [5]n/a = not available. [6]SB = Site background.

ATTACHMENT 7

Table 2. Summary of results for U.S. Army Corps of Engineers Waterways Experiment Station bench-scale manufactured soil demonstration: 30% dredged material, 50% sawdust, 10% cow manure

Contaminant	As-dredged	Man. Soil 30% as-dredged	% Reduction	NJ Non-Resid[1]	NJ Resid.[2]	NY Resid.[3]
2,3,7,8 TCDD (ppt)	41.5	15.2	63.4	—	—	—
OCDD (ppt)	17463	5290	69.7	—	—	—
TCDD/TCDF TEQ (ppt)	518	182	64.9	—	—	—
Total PCBs (ppm)[4]	1.22	.782	68.0	2	0.49	1
Anthracene (ppb)	3700	1590	57.0	10,000	10,000	50,000
Benzo(a)anthracene (ppb)	4480	3130	30.1	4	900	224
Chrysene (ppb)	4560	3720	18.4	40	9000	400
Total PAHs (ppb)[4]	57,900	35,800	38.2	—	n/a[5]	396,500
Arsenic (ppm)	33.5	12.5	62.7	20	20	7.5
Cadmium (ppm)	3.0	7.9	78.6	100	1	1
Chromium (ppm)	377	140	62.9	—	—	10
Copper (ppm)	1172	393	66.5	600	600	25
Lead (ppm)	617	331	46.4	600	400	SB[6]
Mercury (ppm) total	1.29	—	—	270	14	0.1
Zinc (ppm)	1725	514	70.2	1500	1500	20

[1]NJ Department of Environmental Protection. Non-residential soil, direct contact. J.J.A.C. 7:26D, revised 7/11/96. [2]NJ Department of Environmental Protection. Residential soil, direct contact. J.J.A.C. 7:26D, revised 7/11/96. [3]NY Department of Environmental Conservation. Recommended soil cleanup objectives. HWR-94-046 (Revised). January 24, 1994. [4]See Reference 12. [5]n/a = not available. [6]SB = Site background.

ATTACHMENT 7

Table 3. Summary of BioGenesis sediment-washing process

Contaminant	As-dredged	Treated	% Reduction	NJ Non-resid.[1]	NJ Resid.[2]	NY Resid.[3]
Anthracene (ppb)	771	177	77.0	10,000	10,000	50,000
Benzo(a)anthracene (ppb)	1793	234	86.9	4000	900	224
Chrysene (ppb)	1994	286	85.7	40,000	9000	400
Total PAHs (ppb)[4]	19,502	3207	83.6	—	n/a[5]	396,500
Arsenic (ppm)	22.2	12.8	42.3	20	20	7.5
Cadmium (ppm)	18.2	1.4	92.3	100	1	1
Chromium (ppm)	226	63	72.1	—	—	10
Copper (ppm)	n/a[5]	n/a[5]	—	600	600	25
Lead (ppm)	454	60	86.8	600	400	SB[6]
Mercury (ppm) total	13.1	.3	97.7	270	14	0.1
Zinc (ppm)	—	n/a[5]	—	1500	1500	20

[1]NJ Department of Environmental Protection. Non-residential soil, direct contact. J.J.A.C. 7:26D, revised 7/1/96. [2]NJ Department of Environmental Protection. Residential soil, direct contact. J.J.A.C. 7:26D, revised 7/1/96. [3]NY Department of Environmental Conservation. Recommended soil cleanup objectives. HWR-94-046 (Revised). January 24, 1994. [4]See Reference 12. [5]n/a = not available. [6]SB = Site background.

ATTACHMENT 7

Table 4. Summary of results for the Metcalf & Eddy solvent extraction process

Contaminant	As-dredged	Treated 7-stage	% Reduction	NJ Non-resid.[1]	NJ Resid.[2]	NY Resid.[3]
2,3,7,8 TCDD (ppt)	35	10	71	—	—	—
OCDD (ppt)	13411	3047	77	—	—	—
TCDD/TCDF TEQ (ppt)	648	106	84	—	—	—
Total PCBs (ppm)[4]	1.54	.029	98.1	2	49	1
Anthracene (ppb)	62,900	1292	97.9	10,000	10,000	50,000
Benzo(a)anthracene (ppb)	38490	894	97.7	4000	900	224
Chrysene (ppb)	33.76	1.01	97.0	40,000	9000	400
Total PAHs (ppb)[4]	858,000	17,000	98.0	—	n/a[5]	395,500
Arsenic (ppm)	68	85	—	20	20	7.5
Cadmium (ppm)	29	32	—	100	1	1
Chromium (ppm)	319	373	—	—	—	10
Copper (ppm)	1090	1310	—	600	600	25
Lead (ppm)	632	795	—	600	400	SB[6]
Mercury (ppm) total	3.5	5.3	—	270	14	0.1
Zinc (ppm)	1505	1750	—	1500	1500	20

[1]NJ Department of Environmental Protection. Non-residential soil, direct contact. J.J.A.C. 7:26D, revised 7/11/96. [2]NJ Department of Environmental Protection. Residential soil, direct contact. J.J.A.C. 7:26D, revised 7/11/96. [3]NY Department of Environmental Conservation. Recommended soil cleanup objectives. HWR-94-046 (Revised). January 24, 1994. [4]See Reference 12. [5]n/a = not available. [6]SB = Site background.

ATTACHMENT P

Port Jersey Dredge Sediment Analysis Data And Treated Summary

Port Authority of New York and New Jersey

ITEX

division of IRM, L.P.

PORT JERSEY DREDGE SEDIMENT ANALYSIS DATA SUMMARY

ATTACHMENT 8

INORGANICS IN (ppm) dW	Matrix Blank MDL	RAW SAMPLES				STABILIZED PRODUCT			
Sample Numbers	(ppm)	A	B	C	D	A	B	C	D
Antimony (Method 6010)	0.01	18.17	15.63	14.69	12.40	11.02	14.35	16.59	15.97
Arsenic (Method 7060)	0.01	6.94	7.51	10.64	10.33	1.05	3.57	3.35	10.36
Barium (Method 6010)	0.01	72.65	78.62	6.48	19.75	82.15	86.31	77.10	103.53
Beryllium (Method 6010)	0.01	0.89	1.26	0.83	0.82	0.87	0.81	0.79	0.83
Cadmium (Method 7131)	0.01	4.56	5.83	7.02	6.79	2.58	5.53	1.26	5.33
Chromium (Method 6010)	0.01	80.13	122.82	182.71	178.67	81.36	100.71	139.49	151.77
Copper (Method 6010)	0.01	101.85	145.12	221.51	230.68	120.06	154.05	188.61	227.65
Lead (Method 6010)	0.01	110.04	148.81	221.02	237.90	139.02	184.68	259.33	251.95
Manganese (Method 6010)	0.01	445.16	350.48	400.30	412.71	319.91	253.15	242.63	261.95
Mercury (Method 7471)	0.001	10.680	13.690	22.100	20.470	4.270	6.310	7.960	17.320
Nickel (Method 6010)	0.01	35.97	35.87	44.11	44.26	39.49	37.84	41.06	44.07
Selenium (Method 6010)	0.01	ND	ND	ND	ND	ND	ND	ND	ND
Silver (Method 6010)	0.01	3.21	5.09	7.22	6.52	3.32	5.23	5.99	6.21
Thallium (Method 6010)	0.01	1.14	1.00	1.16	1.12	1.15	1.00	1.00	1.03
Vanadium (Method 6010)	0.01	34.90	37.04	36.00	36.07	44.87	41.89	44.70	43.56
Zinc (Method 6010)	0.01	183.05	266.21	411.10	429.09	248.82	309.00	360 16	444.91
Cyanide (Method 9010)	0.01	ND	ND	ND	ND	0 58	1.26	1 71	2.49

dw = dry weight
(ppm) = parts per million
(ppb) = parts per billion
(B) = Blank Contamination
(B+) = Contaminant found in Blank and sample
(J) = Detected below limit
(ND) = Not Detected
MDL = Minimum Detection Limit
N/A = Not Applicable

ATTACHMENT 9

Estuaries Vol. 16, No. 2B, p. 608–616 September 1993

Sediment-Derived Chronologies of Persistent Contaminants in Jamaica Bay, New York[1]

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ABSTRACT: **Chronologies of particle-associated contaminant levels were developed for Jamaica Bay, an embayment of the Atlantic Ocean on southwestern Long Island. A major potential source of contaminants to the system is wastewater discharge, which comprises most of the freshwater input to the bay. Sediment core sections were analyzed for Cs-137, Pu-239, 240, and Be-7 activities which were then used to establish net particle accumulation rates. Samples deposited from the early 1950s through the late 1980s were analyzed for metals and chlorinated hydrocarbon contaminants. Trace metals, including copper, lead, chromium, zinc, and mercury, were elevated to levels several times those of pre-industrial concentrations. These metals decreased by about 50% between the mid 1960s and the late 1980s. Chlorinated hydrocarbon concentrations, including polychlorinated biphenyls, chlordane, and dichlorodiphenyltrichloroethane-derived compounds, decreased by a factor of five to ten between the late 1960s and the late 1980s. Local improvements in wastewater treatment and national efforts to regulate the uses and releases of specific chemicals are the most likely explanation of declines in contaminant levels in these sediments.**

Introduction

Jamaica Bay (Fig. 1) is a coastal ecosystem that has been significantly impacted by development (Dowling et al. 1970; Jamaica Bay Environmental Study Group 1971). Its islands belong to the Gateway National Recreation Area system, but about three quarters of the original surrounding wetlands no longer exist, having been filled decades ago. In the eastern part of the bay, former marshes are now covered by the John F. Kennedy (JFK) International Airport. Most of the drainage basin is occupied by residential housing.

Tidal currents exchange approximately one third of the volume of Jamaica Bay each semidiurnal cycle. Freshwater inputs total approximately one half of one percent of the bay volume per day (O'Brien & Gere Engineers, Inc. 1990). Over two thirds of these inputs consist of discharge from secondary sewage treatment plants and approximately ten percent enter from combined sewer overflow. This characteristic makes Jamaica Bay a good location for monitoring trends in contaminants derived from sewage effluent.

Jamaica Bay was chosen as one of approximately 200 coastal systems to be studied as part of the National Oceanic and Atmospheric Administration's National Status and Trends (NST) Program. Analyses of sediment grab samples indicated that Jamaica Bay was among the most contaminated systems in the study (National Oceanic and Atmospheric Administration 1988). Recently, the NST Program set out to obtain data on temporal trends in contaminant levels through the analysis of dated sediment core sections. This approach has been applied to numerous natural water systems (Alderton 1985) including several in the vicinity of Jamaica Bay (Bopp and Simpson 1989; Bopp et al. 1991). This paper presents the results of an initial NST study.

Methods

Gravity cores were collected on June 21, 1982 (JB 6) and October 1, 1988 (JB 13) from Jamaica Bay at a site adjacent to JFK International Airport (Fig. 1). The site is located in one of the deepest

[1] Lamont-Doherty Geological Observatory contribution number 5022.

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0160-8347/93/03B0608-09$01.50/0

ATTACHMENT 5

TABLE 4. Trace metal data from cores JB 6 and JB 13*.

Core	Depth (cm)	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cr (ppm)	Hg (ppm)
JB 6	12–16	344	350	544		
	28–32	250	280	414		
	36–40	164	208	401		
	40–44	148	237	633		
	44–47	169	188	460		
JB 13	0–2	208	152	325	102	1.0, 1.0, 0.9[b]
	2–4	251	196	369	124	1.1
	4–6	277	190	417	131	1.0
	6–8	226	241[c]	873[c]	150	1.3
	8–12	205	201	387	133	1.3
	12–16	222	231	412	148	1.0
	16–20	280	267	496	165	1.4
	20–24	385	332	622	187	1.5
	24–28	372	339	598	198	2.0
	28–32	406	372	704	243	2.4
	32–36	382	336	606	225	2.3, 2.3
	36–40	239	249	464	166	1.6
	40–44	285	269	479	140	1.6
	44–48	221	242	384	136	1.3
	48–52	196	210	382	118	1.2
	52–54	151	165	285	105	1.0

* Pre-industrial levels of these metals based on mean shale values would be about 45 ppm Cu, 20 ppm Pb, 95 ppm Zn, 90 ppm chromium (Turekian and Wedepohl 1961), and 0.18 ppm Hg (Marowsky and Wedepohl 1971). Estimates for pre-industrial fine-grained sediments, based on old Hudson River samples, are similar for Pb (25 ppm) and Zn (80 ppm) and somewhat lower for Cu (20 ppm) (Williams et al. 1978) and Cr (about 60 ppm, Chillrud unpublished data).

[b] Multiple entries give the results of analyses on separate aliquots of the sample.

[c] Results of analyses of six separate aliquots of the 6–8 cm section of core JB 13 gave an average Zn level of 873 ppm with a standard deviation of 266 ppm. Such variability is much greater than our analytical precision (Table 5) and indicates sample heterogeneity with respect to Zn. Pb analyses on the same six digests were much more reproducible yielding an average value of 211 ppm with a standard deviation of 11 ppm.

corded (National Oceanic and Atmospheric Administration 1984). Our trace metal data suggests that these storms may have initiated the most significant episode of combined sewer overflow into Jamaica Bay between the mid 1970s and late 1980s.

Discussion

The PCB maximum (Fig. 4) corresponds to the period of peak domestic production of polychlorinated biphenyls (PCBs), 1958–1970 (Conservation Foundation 1984). The termination of d mestic PCB production in 1978 has certain contributed to the recent dramatic decline in PC levels seen in our Jamaica Bay sediment cor Three of the four largest sewage treatment pla that discharge to the bay underwent major a tions or reconstructions that were completed b tween 1975 and 1978 (Interstate Sanitation Co mission 1989). This has probably made a signific contribution to the declines in the levels of PC as well as the other chlorinated hydrocarbons a trace metals.

Concentrations of pp'-DDD reached a maxim in the late 1960s, while γ-chlordane levels we highest a few years later. Prior to the mid 19 the ratio of γ-chlordane to pp'-DDD levels in maica Bay sediments was always less than one. Si that time γ-chlordane has been the more abund compound (Fig. 5, Table 3). These observati are consistent with the fact that chlordane use restricted, for most applications, in 1975, th years after the domestic ban on DDT use. Chl dane use on Long Island continued to be permit for in-ground applications for termite control u 1983 (personal communication, Francis Hege New York State Department of Environmer Conservation, 1992).

As mentioned above, levels of Pb, Zn, Cr, a Hg showed a strong tendency to vary directly w levels of Cu (Fig. 7). A more detailed examinat of the data reveals some interesting minor de tions. The ratio of the concentration of Cu to Zn, Cr, and Hg is consistently higher in th three samples of core JB 13 (1980s) than in bottom three (1950s) (Fig. 7). This implies relat enhancement of Cu inputs during the 1980s t could be related to increased use of copper p for plumbing applications or to restrictions on use of tributyltin anti-fouling paints on boat h and the increased use of Cu-based paints.

Relative to average ratios in the core, the Cu Cr and Cu to Zn ratios were 16% and 10% high respectively, in the top three samples (Table The Cu to Pb and Cu to Hg ratios were about 2 higher. This suggests an enhanced recent dec in Pb and Hg levels. Considering the specific eff made to control Pb emissions to the environme

TABLE 5. Trace metal analyses of standard sediment samples.

	Cu (ppm)	Pb (ppm)	Zn (ppm)	Cr (ppm)	Hg (ppm)
SLOSH IV*	101 ± 3	157 ± 12	358 ± 22	164 ± 19	1.54 ± 0.17
NBS 2704*	93.9	162	462	130 ± 16	1.35 ± 0.09
Accepted NBS value	95.0 ± 5.0	161 ± 17	438 ± 12	135 ± 5	1.44 ± 0.07

* SLOSH IV is a grab sample of Hudson River sediment that has been dried and ground to a fine powder. The standard deviation for Hg is based on analyses of 14 aliquots of this sample. For the other metals, over 30 aliquots were analyzed.

[b] The standard deviation for Cr is based on three analyses. Five aliquots were analyzed for Hg.

ATTACHMENT 10

Geographic and Temporal Distribution of Particle-Associated Contaminants in Sediments of the Hudson River Basin.

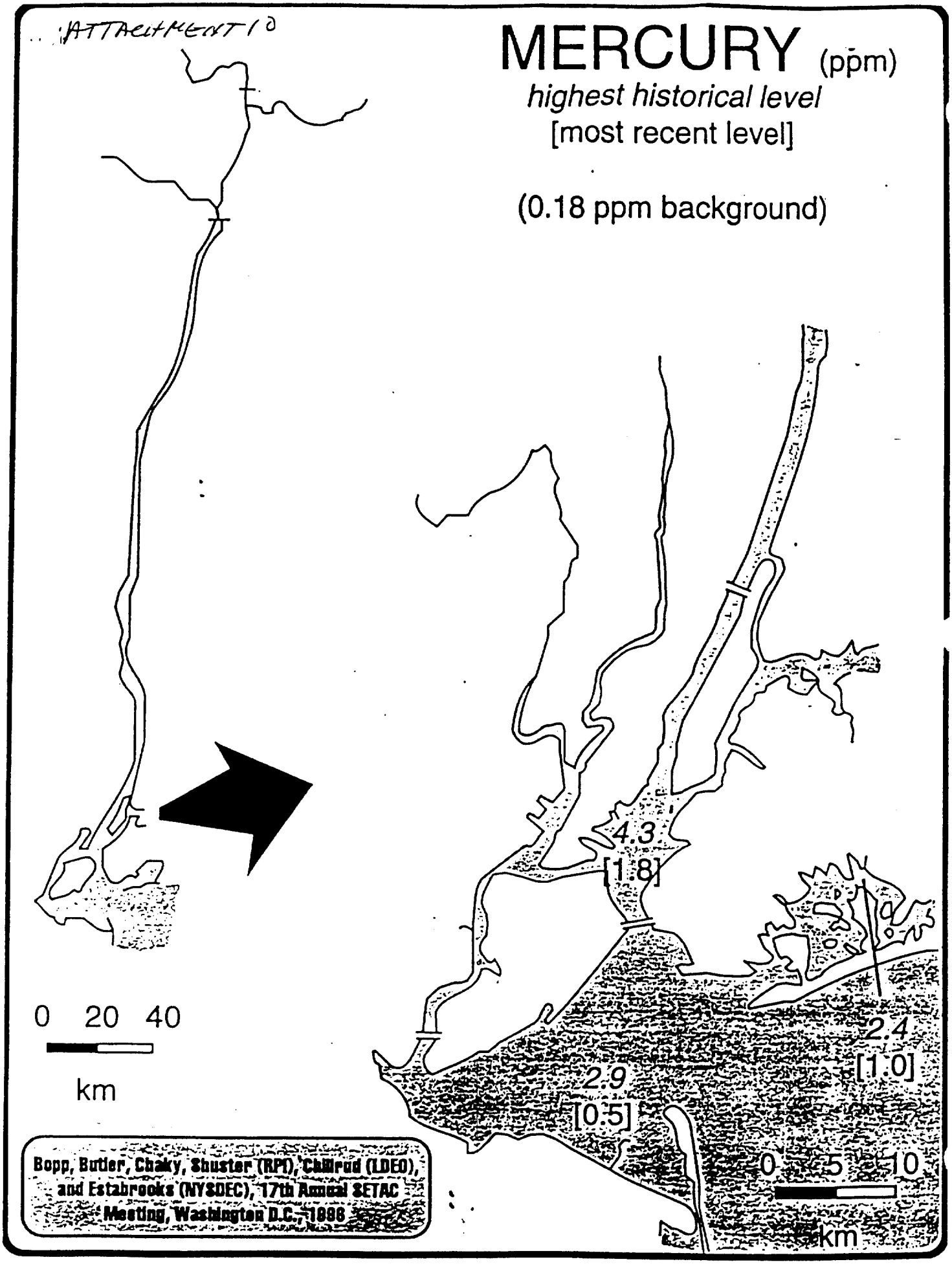
R.F. Bopp, J.A. Butler, D.A. Chaky and E.L. Shuster, Rensselaer Polytechnic Inst., Troy NY.

S.N. Chillrud, Lamont-Doherty Earth Observatory, Palisades NY

F.D. Estabrooks, New York State Dept. of Environmental Conservation, Albany NY.

Presented at the 17th Annual Meeting of the Society of Environmental Toxicology and Chemistry (SETAC)
17-21 November 1996
Washington D.C.

ATTACHMENT 10



Bopp, Butler, Chaky, Shuster (RPI), Chillrud (LDEO), and Estabrooks (NYSDEC), 17th Annual SETAC Meeting, Washington D.C., 1996

ATTACHMENT 11

Draft Final Report

SEDIMENT QUALITY OF THE NY/NJ HARBOR SYSTEM

An Investigation under the Regional Environmental Monitoring and Assessment Program (R-EMAP)



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October 1996

Attachment 11

Table E-1 Continued.	Harbor	Jamaica Bay	Newark Bay	Lower Harbor	Upper Harbor	W. Long Is. Sound	Bight Apex
DDE	8.53 ±2.54	3.18 ±1.60	65.20 ±35.68	4.04 ±1.66	7.32 ±2.04	2.72 ±0.54	1.18 ±0.69
Total DDT	31.59 ±16.64	5.95 ±2.90	320.31 ±256.91	10.28 ±4.52	19.84 ±5.07	6.38 ±1.30	2.78 ±2.63
Chlordane	5.11 ±1.01	5.19 ±2.50	21.64 ±2.83	2.95 ±1.21	6.60 ±1.77	2.65 ±0.74	14.32 ±22.58
Dieldrin	0.80 ±0.12	0.73 ±0.35	2.34 ±0.36	0.53 ±0.13	1.19 ±0.33	0.69 ±0.17	0.28 ±0.10
Endrin	0.67 ±0.19	0.47 ±0.04	0.76 ±0.42	0.51 ±0.05	1.22 ±0.90	1.56 ±1.44	0.41 ±0.07
Acenaphthene	82.78 ±65.43	45.05 ±48.02	92.82 ±30.15	17.81 ±5.69	294.62 ±312.96	28.21 ±12.24	10.57 ±4.38
Acenaphthylene	122.93 ±41.89	50.00 ±34.26	202.46 ±30.69	40.84 ±14.13	381.64 ±195.75	95.05 ±40.25	16.86 ±11.72
Anthracene	365.05 ±220.76	151.36 ±144.73	511.49 ±163.77	63.54 ±26.52	1335.14 ±1054.25	105.14 ±45.35	26.86 ±19.85
Benzo(a)anthracene	486.83 ±129.35	231.11 ±185.03	905.11 ±199.37	141.74 ±50.53	1525.6 ±593.1	395.20 ±320.69	49.34 ±39.34
Benzo(a)pyrene	303.05 ±83.12	138.96 ±111.32	516.92 ±79.50	113.25 ±40.94	889.96 ±375.20	194.09 ±52.38	33.19 ±24.55
Benzo(k)fluoranthene	781.78 ±177.51	531.68 ±415.14	1669.94 ±264.54	294.28 ±99.79	2107.79 ±769.94	518.25 ±164.81	94.86 ±68.05

ATTACHMENT II

Table E-1 Continued.	Harbor	Jamaica Bay	Newark Bay	Lower Harbor	Upper Harbor	W. Long Is. Sound	Bight Apex
Benzo(g,h,i)perylene	302.69 ±72.98	186.48 ±173.51	579.08 ±101.00	112.75 ±41.96	849.14 ±315.35	173.15 ±67.70	30.65 ±19.81
Biphenyl	32.16 ±11.74	38.86 ±42.83	45.73 ±7.67	15.02 ±4.21	77.14 ±51.31	17.01 ±4.11	9.06 ±3.10
Chrysene	544.76 ±145.85	313.48 ±271.91	1076.9 ±217.0	161.69 ±56.44	1653.2 ±664.7	311.20 ±123.95	51.54 ±41.17
Dibenz(a,h)anthracene	79.42 ±31.10	17.32 ±6.72	146.12 ±25.41	26.66 ±9.59	247.84 ±146.29	34.93 ±10.65	13.00 ±8.15
2,6-Dimethylnaphthalene	198.15 ±57.34	582.37 ±382.91	181.20 ±52.59	135.41 ±62.49	219.79 ±95.74	116.40 ±34.59	17.25 ±11.02
Fluoranthene	743.25 ±278.61	568.79 ±481.83	1280.0 ±397.6	201.34 ±80.22	2308.0 ±1292.0	325.36 ±109.31	65.51 ±51.71
Fluorene	176.41 ±182.11	77.62 ±87.06	107.72 ±23.17	28.20 ±13.07	693.43 ±873.05	37.15 ±13.42	12.32 ±5.96
Ideno(1,2,3-c,d)pyrene	291.62 ±90.08	132.04 ±106.36	575.81 ±74.23	117.62 ±42.01	806.89 ±409.94	195.27 ±60.61	35.54 ±27.73
2-Methylnaphthalene	89.91 ±42.02	95.08 ±122.30	114.36 ±21.63	33.04 ±13.05	253.21 ±189.86	43.72 ±12.86	14.33 ±7.65
1-Methylnaphthalene	46.37 ±24.30	59.61 ±81.69	47.24 ±6.97	15.16 ±4.83	135.10 ±109.67	19.08 ±5.86	9.71 ±3.65
1-Methylphenanthrene	156.10 ±88.28	130.93 ±187.12	150.03 ±84.70	9.65 ±3.57	615.18 ±414.55	29.18 ±27.49	6.00 ±0.00

ATTACHMENT 11

Table E-1 Continued.	Harbor	Jamaica Bay	Newark Bay	Lower Harbor	Upper Harbor	W. Long Is. Sound	Bight Apex
Naphthalene	163.96 ±100.34	96.04 ±92.26	217.87 ±28.42	48.90 ±16.84	528.57 ±477.41	82.89 ±24.35	26.32 ±12.43
Perylene	333.54 ±113.69	113.98 ±55.94	608.35 ±173.42	127.84 ±47.68	975.43 ±523.23	169.73 ±67.87	37.83 ±43.06
Phenanthrene	628.06 ±520.48	363.98 ±412.31	417.30 ±61.09	116.85 ±45.44	2368.6 ±2489.5	197.89 ±69.24	48.20 ±35.82
Pyrene	767.60 ±269.73	508.73 ±440.02	1144.7 ±288.8	202.19 ±77.94	2491.0 ±1255.0	364.17 ±141.09	69.63 ±57.35
2,3,5-Trimethylnaphthalene	47.00 ±29.87	183.02 ±287.39	70.47 ±37.44	9.82 ±2.60	91.21 ±57.89	10.70 ±3.60	7.29 ±1.48
Total PAHs	7177.4 ±2607.9	4838.5 ±4279.8	11471 ±1836.3	2179.2 ±723.5	22141 ±12165	3749.7 ±1310.2	730.0 ±521.7
Monobutyltin	5.32 ±1.37	8.51 ±5.13	11.74 ±3.92	4.48 ±1.93	4.46 ±1.38	1.21 ±0.24	2.77 ±1.28
Dibutyltin	16.33 ±6.04	11.25 ±6.78	38.95 ±22.07	15.45 ±9.06	14.39 ±5.02	2.45 ±0.46	6.08 ±3.33
Tributyltin	30.08 ±8.52	38.64 ±19.50	69.31 ±23.39	24.07 ±11.77	32.50 ±16.17	23.98 ±8.02	19.54 ±9.35
Tetrabutyltin	4.17 ±0.52	4.99 ±2.18	5.39 ±2.28	3.95 ±0.66	4.11 ±0.88	3.75 ±0.40	3.61 ±0.45

ATTACHMENT IV

Draft Final Report

SEDIMENT QUALITY OF THE NY/NJ HARBOR SYSTEM

An Investigation under the Regional Environmental Monitoring and Assessment Program (R-EMAP)



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Stephen B. Weisberg
Versar, Inc. (presently at Southern California Coastal Water Research Project)

October 1996

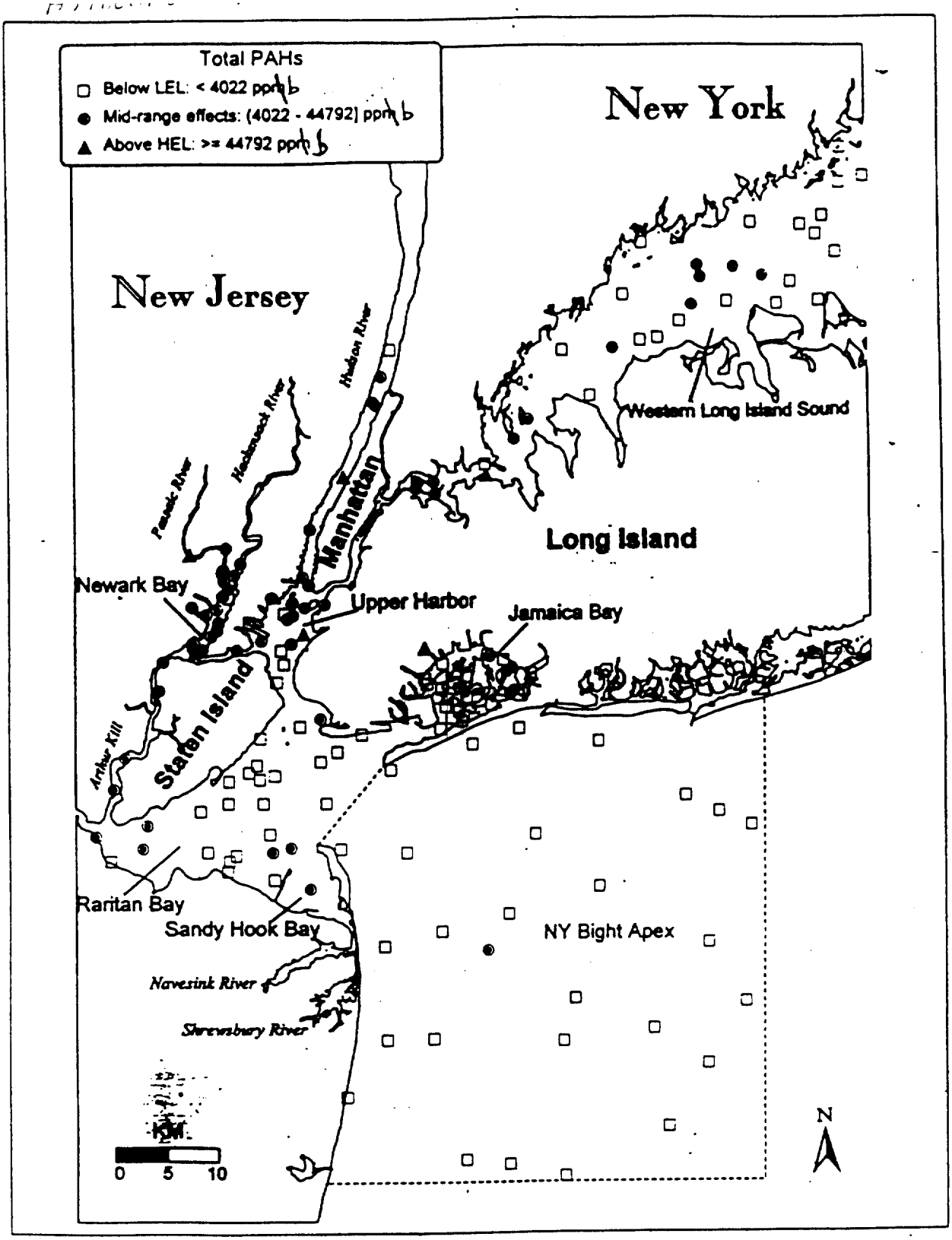

Figure 4-8. Distribution of Total PAH concentrations by station. Sediment Guidance Criteria LEL and HEL (NYSDEC, 1993) are equivalent to ER-L and ER-M (Long & Morgan, 1991; Long et al., 1995a).

QC Reference Sample, Prall's Is, Arthur Kill	1JMS00020	1999-11-15	SEDIMENT	NYSDECLRMS3	TOTAL	PAH	Fluoranthene	8020	NG/G_DRYWT
QC Reference Sample, Prall's Is, Arthur Kill	1JMS00020	1999-11-15	SEDIMENT	NYSDECLRMS3	TOTAL	PAH	Fluqrene	602	NG/G_DRYWT
QC Reference Sample, Prall's Is, Arthur Kill	1JMS00020	1999-11-15	SEDIMENT	NYSDECLRMS3	TOTAL	PAH	Indeno[1,2,3-c,d]-pyrene	2670	NG/G_DRYWT
QC Reference Sample, Prall's Is, Arthur Kill	1JMS00020	1999-11-15	SEDIMENT	NYSDECLRMS3	TOTAL	PAH	Naphthalene	1210	NG/G_DRYWT
QC Reference Sample, Prall's Is, Arthur Kill	1JMS00020	1999-11-15	SEDIMENT	NYSDECLRMS3	TOTAL	PAH	Perylene	1190	NG/G_DRYWT
QC Reference Sample, Prall's Is, Arthur Kill	1JMS00020	1999-11-15	SEDIMENT	NYSDECLRMS3	TOTAL	PAH	Phenanthrene	5840	NG/G_DRYWT
QC Reference Sample, Prall's Is, Arthur Kill	1JMS00020	1999-11-15	SEDIMENT	NYSDECLRMS3	TOTAL	PAH	Pyrene	8760	NG/G_DRYWT
QC Reference Sample, Prall's Is, Arthur Kill	1JMS00020	1999-11-15	SEDIMENT	NYSDECLRMS3	TOTAL	PAH	biphenyl	200	NG/G_DRYWT

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$\Sigma = 80902$ ppb
$n = 22$

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ATTACHMENT 13

Appendix C

Remedial Investigation Phase 1
Soil Boring Logs

HTRW DRILLING LOG

Hole No: FSS-01

X Coordinate: 5912.00 | Y Coordinate: 1362.00

Project: Ft. Totten Upland Area

Measuring Point: 0.00'

ation: Ft. Totten, Queens, NY

Riser:
type: dia: 0.00in fm: 0.0' to: 18.00'

Total Depth: 18.00' | Completed Depth: 18.00'

Screens:
type: size: dia: fm: to:

Drilled by: USACE Baltimore | Borehole Dia.: 8.00in

Drilling Method: Hollow Stem Auger

Annular Fill:
type: fm: to:
type: fm: to:
type: fm: to:

Elevation Top of Hole: 0.00' | Datum:

Logged By: A. Dimbirs

Date Started: 08/21/98 | Date Completed: 08/22/98

Remarks: Location not surveyed
FSS-01 = SB-1
Boring located 7.5' S, 1.5' E of MW-1

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
		SM	Dry, dark yellowish-brown fine SILTY SAND, rootlets 0.0-0.7', some concrete fragments 0.7-2.0'	FSS-SB-01-01	75	4 19 25 30		
	1							
	2		dark yellowish-orange and light gray, one cobble at base	FSS-SB-01-02	100	21 23 22 21		
	3							
	4			3	100	18 27 20 23		
	5							
	6			4	95	14 20 35 28		
	7							
	8			5	40	21 32 38 68		
	9		0.0-10.0'					

U.S. Army Corps of Engineers

HTRW DRILLING LOG

Logged By: A. Dimbirs	Hole No: FSS-01

Elevation (ft,	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	PID	Water Level
		SM	Dry, dark yellowish-orange and light gray fine SILTY SAND	6	35	44 45 39 31		
	11							
	12			7	80	15 23 28 37		
	13		moist, dusky yellow				7 ppm	
	14			FSS-SB-01-13	100	15 23 27 33		
	15		moist to wet, brown					
	16			14	85	25 36 40 45		
	17							
	18		10.0-18.0' BOH = 18.0'					
	19							
-20	20							
	21							
	22							
	23							
	24							

U.S. Army Corps of Engineers

HTRW DRILLING LOG

Hole No: FSS-02	
X Coordinate: 5713.50	Y Coordinate: 1571.50
Project: Ft. Totten Upland Area	Measuring Point: 0.00'
ɔtion: Ft. Totten, Queens, NY	Riser: type: dia: 0.00in fm: 0.0' to: 18.00'
Total Depth: 18.00' / Completed Depth: 18.00'	
Drilled by: USACE Baltimore / Borehole Dia.: 8.00in	Screens: type: size: dia: fm: to:
Drilling Method: Hollow Stem Auger	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to:
Elevation Top of Hole: 0.00' / Datum:	
Logged By: A. Dimbirs	Date Started: 08/24/98 / Date Completed: 08/24/98

Remarks: Location not surveyed
FSS-02 = SB-2
Boring located 7' S, 2' E of MW-3

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
		SP	Dry, dark yellowish-brown to medium dark gray fine GRAVELLY SAND, with rootlets and concrete fragments (Fill) 0.0-1.1'	FSS-SB-02-01	90	8 10 17 22		
	1	SM	Dry, dark yellowish-orange fine SILTY SAND, with some fine to coarse gravel					
	2			FSS-SB-02-02	50	13 23 37 32		
	3							
	4		Dry to moist	J	85	18 20 19 15		
	5							
	6			4	95	7 9 14 16		
	7							
	8			5	50	30 33 53 97		
	9							
			1.1-10.0'					

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HTRW DRILLING LOG

Logged By: A. Dimbirs	Hole No: FSS-02

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
		SM	Moist dark yellowish-orange fine SILTY SAND, trace gravel	[illegible]	25	80 50 40 30		
	11							
	12			H	75	21 30 30 42		
	13							
	14			[illegible]	70	65 59 53 58		
	15							
	16			[illegible]	100	44 50 51 56		
	17							
	18		10.0-18.0' BOH = 18.0'					
	19							
-20	20							
	21							
	22							
	23							
	24							

U.S. Army Corps of Engineers

HTRW DRILLING LOG

Hole No: FSS-03	
X Coordinate: 5781.50	Y Coordinate: 1573.00
Project: Ft. Totten Upland Area	Measuring Point: 0.00'
Location: Ft. Totten, Queens, NY	Riser: type: dia: 0.00in fm: 0.0' to: 20.00'
Total Depth: 20.00' / Completed Depth: 20.00'	Screens: type: size: dia: fm: to:
Drilled by: USACE Baltimore / Borehole Dia.: 8.00in	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to:
Drilling Method: Hollow Stem Auger	
Elevation Top of Hole: 0.00' / Datum:	
Logged By: A. Dimbirs	Date Started: 08/21/98 / Date Completed: 08/21/98

Remarks: Location not surveyed
FSS-03 = SB-3
Boring located 10' S, 21' E of SE corner Bldg 625

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
0		SM	Dry, yellowish-brown fine SILTY SAND, with rootlets	FSS-SB-03-01	50	9 25 32 21		
	1							
	2			FSS-SB-03-02	70	10 10 12 19		
	3		Dry to moist, moderate yellowish-brown and yellowish-gray fine SILTY SAND, with some thin, 1" interlaminated moderate yellowish-brown silty clay					
	4			3	100	16 22 23 33		
	5							
	6			4	75	9 18 20 17		
	7						10 ppm	
	8			5	90	15 20 26 24		
	9		0.0-10.0'					
10								

U.S. Army Corps of Engineers

HTRW DRILLING LOG

Logged By: A. Dimbirs | Hole No: FSS-03

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	PID	Water Level
		SM	Dry to moist, moderate yellowish-brown and yellowish-gray fine SILTY SAND	6	65	10 60 40 30		
	11							
	12			7	85	16 25 24 24		
	13							
	14			FSS-SB-03-03	90	21 25 25 31		
	15							
	16			H	80	16 33 32 38		
			10.0–16.8'					
	17	GP	Wet, dark brown fine GRAVEL 16.8–17.0'					
		SM	Very moist to wet, moderate yellowish-brown fine SILTY SAND with some coarse rounded gravel					
	18			10	100	21 35 52 28		
	19							
			17.0–20.0'					
-20	20		BOH = 20.0'					
	21							
	22							
	23							
	24							

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HTRW DRILLING LOG

Hole No: FSS-04	
X Coordinate: 5689.00	Y Coordinate: 1684.50
Project: Ft. Totten Upland Area	Measuring Point: 0.00'
Location: Ft. Totten, Queens, NY	Riser: type: dia: 0.00in fm: 0.0' to: 18.00'
Total Depth: 18.00' / Completed Depth: 18.00'	Screens: type: size: dia: fm: to:
Drilled by: USACE Baltimore / Borehole Dia.: 8.00in	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to:
Drilling Method: Hollow Stem Auger	
Elevation Top of Hole: 0.00' / Datum:	
Logged By: A. Dimbirs	Date Started: 08/22/98 / Date Completed: 08/24/98

Remarks: Location not surveyed
FSS-04 = SB-4
Boring located 7' S of MW-2

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
	0	SM	Dry, dark yellowish-brown fine SILTY SAND, with some fine gravel, rootlets, and brick (Fill) 0.0-0.6'	FSS-SB-04-01	85	7 15 10 7		
	1		Moist, dark yellowish-orange fine SILTY SAND					
	2			FSS-SB-04-02	90	4 5 6 11		
	3							
	4			3	100	8 23 17 84		
	5							
	6			4	85	93 41 33 32		
	7							
	8		Moist, dark yellowish-orange fine SILTY SAND, with some clay, some coarse rounded gravel	5	55	67 77 35 26		
	9							
	10		0.0-10.0'					

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HTRW DRILLING LOG

Logged By: A. Dimbirs	Hole No: FSS-04

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
		SM	Moist to wet, dark yellowish-orange fine SILTY SAND, with trace rounded coarse gravel	6	90	8 22 31 34		
	11							
	12			7	15	44 99 96 70		
	13							
	14			H	60	14 32 34 63		
	15							
	16			[illegible]	100	30 30 41 61		
	17							
			10.0-18.0'					
	18		BOH = 18.0'					
	19							
-20-	20							
	21							
	22							
	23							
	24							

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HTRW DRILLING LOG

Hole No: FSS-05	
X Coordinate: 5680.50	Y Coordinate: 1741.50
Project: Ft. Totten Upland Area	Measuring Point: 0.00'
:ation: Ft. Totten, Queens, NY	Riser: type: dia: 0.00in fm: 0.0' to: 20.00'
Total Depth: 20.00' / Completed Depth: 20.00'	Screens: type: size: dia: fm: to:
Drilled by: USACE Baltimore / Borehole Dia.: 8.00in	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to:
Drilling Method: Hollow Stem Auger	
Elevation Top of Hole: 0.00' / Datum:	
Logged By: A. Dimbirs	Date Started: 08/22/98 / Date Completed: 08/22/98
Remarks: Location not surveyed FSS-05 = SB-5 Boring located 54' N, 38' E of MW-2	

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
		SM	Dry, medium-dark gray fine SILTY SAND, with fine gravel, rootlets, and concrete fragments (0.0-0.9'), (Fill)	FSS-SB-05-01	100	12 18 17 13		
	1		Dry, dark yellowish-orange fine SILTY SAND					
	2			FSS-SB-05-02	80	8 20 22 29		
	3		Trace coarse rounded gravel and cobbles					
	4			3	80	25 47 55 45		
	5							
	6			4	85	27 51 51 49		
	7							
	8			5	70	52 40 39 35		
	9		0.0-10.0'					

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HTRW DRILLING LOG

Logged By: A. Dimbirs | Hole No: FSS-05

Elevation (ft,	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
		SM	Dry, dark yellowish-orange fine SILTY SAND	6	80	22 33 38 41		
	11							
	12			7	85	14 32 36 41		
	13							
	14		10.0-14.4'	6	95	15 21 28 43		
		ML	Moist to very moist, light olive gray fine SILT, with trace sand					
	15							
	16			H	90	18 36 38 43		
	17							
	18			FSS-SB-05-03	85	12 26 37 59		
	19							
			14.4-20.0'					
-20	20		BOH = 20.0'					
	21							
	22							
	23							
	24							

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HTRW DRILLING LOG

Hole No: FSS-06	
X Coordinate: 5445.50	Y Coordinate: 1073.00
Project: Ft. Totten Upland Area	Measuring Point: 0.00'
Location: Ft. Totten, Queens, NY	Riser: type: dia: 0.00in fm: 0.0' to: 8.00'
Total Depth: 8.00' / Completed Depth: 8.00'	Screens: type: size: dia: fm: to:
Drilled by: USACE Baltimore / Borehole Dia.: 8.00in	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to:
Drilling Method: Hollow Stem Auger	
Elevation Top of Hole: 0.00' / Datum:	
Logged By: A. Dimbirs	Date Started: 08/25/98 / Date Completed: 08/25/98

Remarks: Location not surveyed
FSS-06 = SB-6
Boring located 26' S, 48' W of SW corner Bldg 609

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
	0	SM	Dry, light olive gray fine SILTY SAND, with some fine gravel, rootlets (0.0–2.8'), brick and concrete fragments, (Fill)	FSS-SB-06-01	85	7 27 27 24		
	1							
	2			FSS-SB-06-02	100	6 8 6 4		
	3		Dry to moist, dark yellowish-brown to yellowish-gray, and olive gray					
	4			H	50	11 9 6 16		
	5							
	6	ML	0.0–6.0' ---------- Moist to wet, dusky yellowish-green fine SANDY SILT	FSS-SB-06-03	90	2 5 3 4		▽
	7							
	8		6.0–8.0' ---------- BOH = 8.0'					
	9							

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HTRW DRILLING LOG

Hole No: FSS-07	
X Coordinate: 5543.50	Y Coordinate: 1306.50
Project: Ft. Totten Upland Area	Measuring Point: 0.00'
Location: Ft. Totten, Queens, NY	Riser: type: dia: 0.00in fm: 0.0' to: 20.00'
Total Depth: 20.00' / Completed Depth: 20.00'	Screens: type: size: dia: fm: to:
Drilled by: USACE Baltimore / Borehole Dia.: 8.00in	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to:
Drilling Method: Hollow Stem Auger	
Elevation Top of Hole: 0.00' / Datum:	
Logged By: A. Dimbirs	Date Started: 08/24/98 / Date Completed: 08/24/98

Remarks: Location not surveyed
FSS-07 = SB-7
Boring located 3.2' S of MW-5

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
0		SM	Dry, light olive gray fine SILTY SAND, with grass and rootlets (0.0-1.0')	FSS-01/2/3	75	12 14 14 12		
	1		Dark yellowish-gray					
	2			FSS-04/5/6	85	11 11 10 7		
	3							
	4			3	100	11 18 17 21		
	5							
	6		Slightly moist, dark yellowish-orange fine SILTY SAND, some coarse rounded gravel and cobbles	4	70	9 14 19 28		
	7							
	8			5	50	9 45 56 75		
	9							
10			0.0-10.0'					

U.S. Army Corps of Engineers

HTRW DRILLING LOG

Logged By: A. Dimbirs | Hole No: FSS-07

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	PID	Water Level
	10	SP	Moist, dark yellowish-orange and dark yellowish-brown fine GRAVELLY SAND, with 30% coarse rounded gravel	6	70	37 81 37 21	2 ppm	
	11							
	12			7	15	2 10 27 21		
	13							
	14			8	10	15 15 36 40		
	15							
			10.0–16.0'					
	16			FSS-SB-07-07	95	18 25 21 15		
		SW-SM	Moist to wet, dark yellowish-orange, well-graded SAND with silt, trace fine rounded gravel					
	17							
	18			9-1	100	7 6 6 11		
			16.0–19.1'					
	19	ML	Moist, pale olive SILT, with some fine sand					
			19.1–20.0'					
-20	20		BOH = 20.0'					
	21							
	22							
	23							
	24							

U.S. Army Corps of Engineers

HTRW DRILLING LOG

Hole No: FSS-08	
X Coordinate: 5384.50	Y Coordinate: 1522.00
Measuring Point: 0.00'	
Project: Ft. Totten Upland Area	
ication: Ft. Totten, Queens, NY	
Riser: type: dia: 0.00in fm: 0.0' to: 10.00'	
Total Depth: 10.00' / Completed Depth: 10.00'	
Drilled by: USACE Baltimore / Borehole Dia.: 8.00in	Screens: type: size: dia: fm: to:
Drilling Method: Hollow Stem Auger	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to:
Elevation Top of Hole: 0.00' / Datum:	
Logged By: A. Dimbirs	Date Started: 08/25/98 / Date Completed: 08/25/98

Remarks: Location not surveyed
FSS-08 = SB-8
Boring located 25' S, 12' W of SE corner Bldg 615

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
		PV	Concrete 0.0–0.6'					
	1	SM	Moist, moderate yellowish-brown fine SILTY SAND, with some fine gravel, brick and concrete fragments, (Fill)	FSS-SB-08-01	60	7 21 12		
	2			FSS-SB-08-02	75	6 9 10 11		
	3							
	4			3	50	9 17 40 60		
			0.6–5.0'					
	5	GM	Moist, dark yellowish-brown and dark gray GRAVEL, with cobbles and boulders, some fine sand and silt, (Fill)					
	6			4-1	30	64 39 70 99		
	7							
			5.0–8.0'					
	8	SP-SM	Wet, moderate yellowish-brown to dark yellowish-orange and black, fine to medium SAND with silt and fine rounded gravel, poorly graded	FSS-SB-08-03	95	10 15 12 18		
	9		8.0–10.0' BOH = 10.0'					

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HTRW DRILLING LOG

Hole No: FLA-09	
X Coordinate: 5972.00	Y Coordinate: 1810.00
Project: Ft. Totten Upland Area	Measuring Point: 0.00'
Location: Ft. Totten, Queens, NY	Riser: type: dia: 0.00in fm: 0.0' to: 26.00'
Total Depth: 26.00' / Completed Depth: 26.00'	Screens: type: size: dia: fm: to:
Drilled by: USACE Baltimore / Borehole Dia.: 8.00in	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to:
Drilling Method: Hollow Stem Auger	
Elevation Top of Hole: 0.00' / Datum:	
Logged By: A. Dimbirs	Date Started: 08/18/98 / Date Completed: 08/18/98

Remarks: Location not surveyed
FLA-09 = SB-9
Boring located in fill area field, 37' S of fence and 22' W of North Loop Rd.

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
0		SM	Slightly moist, dark yellowish-brown SILTY SAND with some gravel and rootlets (0.0-0.7')	FLA-SB-09-01	80	16 40 72 55		
	1	ML	Dry, dark yellowish-brown fine SANDY SILT, with some fine gravel 0.7-2.0'					
	2	SM	Dry to slightly damp, dark yellowish-brown to yellowish-orange and yellowish-gray fine SILTY SAND, with some gravel, glass, concrete, coal and brick fragments, (Fill)	FLA-SB-09-05	60	13 23 18 17		
	3							
	4			3	60	9 7 6 5		
	5							
	6			4	70	4 2 2 2		
	7							
	8			5	75	4 4 4 9		
	9		2.0-10.0'					

U.S. Army Corps of Engineers

HTRW DRILLING LOG

Logged By: A. Dimbirs | Hole No: FLA-09

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	PID	Water Level
		SM	Dry to slightly damp, SILTY SAND, with some gravel, glass, concrete, coal and brick fragments, (Fill)	6	50	30 38 34 23		
	11							
	12			7	55	23 30 31 30		
	13						12 ppm	
			10.0–14.0'					
	14	SP	Moist, dark yellowish-orange fine SAND, poorly graded	8	90	14 10 11 9		
	15							
			14.0–16.0'					
	16	ML	Moist to very moist, light olive gray SILT, with some fine sand	9	80	4 7 7 11		
	17							
	18			J-1	100	11 18 25 50		
	19							
-20	20			FLA-SB-09-07	75	6 15 22 50		
	21							
	22		Moist to dry, light olive brown to light yellowish-brown SILT, with some fine sand	12	100	14 33 44 85		
	23							
	24			13	100	13 21 33 90		
			16.0–25.0'					

HTRW DRILLING LOG

Logged By: A. Dimbirs | Hole No: FLA-09

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	PID	Water Level
	26	ML	Moist to dry SILT, with some fine sand 25.0–26.0' BOH = 26.0'					
	27							
	28							
	29							
-30	30							
	31							
	32							
	33							
	34							
	35							
	36							
	37							
	38							
	39							

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HTRW DRILLING LOG

Hole No: FLA-10

X Coordinate: 5987.50 | Y Coordinate: 1723.50

Project: Ft. Totten Upland Area | Measuring Point: 0.00'

:ation: Ft. Totten, Queens, NY

Riser: type: dia: 0.00in fm: 0.0' to: 20.00'

Total Depth: 20.00' | Completed Depth: 20.00'

Screens: type: size: dia: fm: to:

Drilled by: USACE Baltimore | Borehole Dia.: 8.00in

Drilling Method: Hollow Stem Auger

Annular Fill: type: fm: to: type: fm: to: type: fm: to:

Elevation Top of Hole: 0.00' | Datum:

Logged By: A. Dimbirs

Date Started: 08/18/98 | Date Completed: 08/19/98

Remarks: Location not surveyed
FLA-10 = SB-10
Boring located in fill area field, 122' S of fence, 23' W of North Loop Rd.

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
		SM	Slightly moist, dark yellowish-brown SILTY SAND, with some rootlets and glass fragments 0.0-0.7'	FLA-SB-10-01	80	5 20 61 28		
	1		Dry, moderately dark yellowish-brown to yellowish-gray fine to medium SILTY SAND, with some fine gravel, with glass, brick and coal fragments, (Fill)					
	2			FLA-SB-10-02	75	11 9 5 5		
	3							
	4			3	85	8 12 11 17		
			0.0-5.1'					
	5	ML	Dry, dark yellowish-orange, interlaminated SANDY SILT					
	6			4	90	12 21 29 35		
	7							
	8			5	65	47 43 41 47		
	9							
			5.1-10.0'					

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HTRW DRILLING LOG

Logged By: A. Dimbirs	Hole No: FLA-10

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	PID	Water Level
		SM	Moist, dark yellowish-orange fine SILTY SAND, trace fine to coarse rounded gravel	6	100	27 36 35 32		
	11							
	12			7	90	12 30 29 31		
	13							
	14			8	85	20 25 25 37		
	15							
	16			FLA-SB-10-03	95	27 40 45 54		
	17						1 ppm	
	18		Wet	J-1	100	35 43 56 62		
	19							
			10.0-20.0'					
-20	20		BOH = 20.0'					
	21							
	22							
	23							
	24							

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HTRW DRILLING LOG

Hole No: FLA-11	
X Coordinate: 5923.50	Y Coordinate: 1749.50
Project: Ft. Totten Upland Area	Measuring Point: 0.00'
Location: Ft. Totten, Queens, NY	Riser: type: dia: 0.00in fm: 0.0' to: 20.00'
Total Depth: 20.00' / Completed Depth: 20.00'	
Drilled by: USACE Baltimore / Borehole Dia.: 8.00in	Screens: type: size: dia: fm: to:
Drilling Method: Hollow Stem Auger	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to:
Elevation Top of Hole: 0.00' / Datum:	
Logged By: A. Dimbirs	Date Started: 08/19/98 / Date Completed: 08/19/98

Remarks: Location not surveyed
FLA-11 = SB-11
Boring located 47' N of unnamed access rd. between fill area field and ball field, 85' W of North Loop Rd.

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
	1	SP-SM	Dry, moderate to dark yellowish-brown and yellowish-gray fine to medium SAND, with silt and gravel, with glass, brick and coal fragments, (Fill)	FLA-SB-11-01	80	10 17 18 20		
	2			FLA-02/3/4	75	8 9 10 9		
	3							
	4			3	80	12 12 8 6		
	5							
	6			4	65	2 2 3 3		
	7						2 ppm	
	8			5	80	8 5 7 5		
	9		0.0-10.0'				2 ppm	

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HTRW DRILLING LOG

Logged By: A. Dimbirs	Hole No: FLA-11

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	PID	Water Level
		SP-SM	SAND with silt and gravel	6	55	3 3 3 4		
			10.0-10.9'					
	11	SM	Damp to moist, dark yellowish-orange and yellowigh-brown fine SILTY SAND, trace gravel					
	12			7	100	5 7 10 9		
	13							
	14			8	100	6 11 19 21		
	15							
	16			FLA-SB-11-05	100	10 18 31 43		
	17		Wet, dark yellowish-orange					▽
	18			9	90	14 36 27 28		
	19		Wet, dusky yellow					
			10.9-20.0'					
-20	20		BOH = 20.0'					
	21							
	22							
	23							
	24							

U.S. Army Corps of Engineers

HTRW DRILLING LOG

Hole No: FLA-12	
X Coordinate: 5882.00	Y Coordinate: 1780.00
Project: Ft. Totten Upland Area	Measuring Point: 0.00'
cation: Ft. Totten, Queens, NY	Riser: type: dia: 0.00in fm: 0.0' to: 18.00'
Total Depth: 18.00' / Completed Depth: 18.00'	Screens: type: size: dia: fm: to:
Drilled by: USACE Baltimore / Borehole Dia.: 8.00in	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to:
Drilling Method: Hollow Stem Auger	
Elevation Top of Hole: 0.00' / Datum:	
Logged By: A. Dimbirs	Date Started: 08/19/98 / Date Completed: 08/20/98

Remarks: Location not surveyed
FLA-12 = SB-12
Boring located in fill area field, 45' S of fence and 127' W of North Loop Rd.

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
0		SM	Dry, dark yellowish-brown fine SILTY SAND, with some rootlets 0.0-0.5'	FLA-SB-12-01	55	5 4 3 2		
	1		Dry, dark yellowish-brown, yellowish-gray and olive gray fine SILTY SAND, with some gravel, with glass, brick and concrete fragments, (Fill)					
	2			FLA-SB-12-02	45	2 3 2 2		
	3							
	4			3	60	4 3 5 4		
	5							
	6			4	90	4 3 4 2		
	7							
	8			5	85	7 6 8 17		
	9							
0			0.0-10.0'					

U.S. Army Corps of Engineers

HTRW DRILLING LOG

Logged By: A. Dimbirs | Hole No: FLA-12

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
		SM	Dry, dark yellowish-brown to yellowish-gray, and olive gray fine SILTY SAND, with some gravel	6	50	13 28 55 62		
	11							
	12			7	55	50 80 60 51		
	13							
	14		Moist to wet, olive gray fine SILTY SAND, trace gravel	FLA-SB-12-03	50	30 14 10 10		
	15							
	16			H	100	7 8 6 17		
	17							
	18		10.0-18.0' BOH = 18.0'					
	19							
-20	20							
	21							
	22							
	23							
	24							

U.S. Army Corps of Engineers

HTRW DRILLING LOG

Hole No: FLA-13	
X Coordinate: 5870.00	Y Coordinate: 1705.00
Project: Ft. Totten Upland Area	Measuring Point: 0.00'
Location: Ft. Totten, Queens, NY	Riser: type: dia: 0.00in fm: 0.0' to: 20.00'
Total Depth: 20.00' / Completed Depth: 20.00'	Screens: type: size: dia: fm: to:
Drilled by: USACE Baltimore / Borehole Dia.: 8.00in	Annular Fill: type: fm: to: / type: fm: to: / type: fm: to:
Drilling Method: Hollow Stem Auger	
Elevation Top of Hole: 0.00' / Datum:	
Logged By: A. Dimbirs	Date Started: 08/20/98 / Date Completed: 08/21/98

Remarks: Location not surveyed
FLA-13 = SB-13
Boring located in fill area field, 33' directly N of E extent of Ball Field #2 fencing (across unnamed rd.)

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	Vapor	Water Level
0		SP-SM	Dry, dark yellowish-brown, yellowish-gray and yellowish-orange fine SAND with silt and gravel, with glass, concrete and coal fragments, (Fill)	FLA-SB-13-01	50	3 32 27 14		
	1						1.5 ppm	
	2			FLA-SB-13-02	75	6 5 3 3		
	3							
	4			3	40	10 9 7 5		
	5							
	6			4	35	4 4 3 3		
	7							
	8		0.0-8.5'	5	75	8 9 10 11		
		SM						
	9		Dry to moist, dark yellowish-orange to pale yellowish-brown fine SILTY SAND, trace black coarse gravel and cobbles 8.5-10.0'					

U.S. Army Corps of Engineers

HTRW DRILLING LOG

Logged By: A. Dimbirs | Hole No: FLA-13

Elevation (ft)	Depth (ft)	Legend	Material Description	Sample No.	Recovery Percent	Blow Count	PID	Water Level
		SM	Dry to moist, dark yellowish-orange to pale yellowish-brown fine SILTY SAND, trace black coarse gravel and cobbles	6	100	16 31 89 60		
	11							
	12			7	55	47 99 88 33		
	13							
	14			8	100	23 21 19 26		
	15							
	16			FLA-SB-13-03	75	6 16 21 29		
	17		Wet, dark yellowish-orange SILTY SAND					
	18			9	80	14 28 99 95		
	19							
			10.0-20.0'					
-20	20		BOH = 20.0'					
	21							
	22							
	23							
	24							

U.S. Army Corps of Engineers

Appendix D

Remedial Investigation Phase 1
Geotechnical Soil Sample Results

VISUAL-MANUAL CLASSIFICATIONS

(Test method: ASTM D2488)

PROJECT: Fort Totten
Remedial Investigation – Phase II

DATE: Sep. 2000

AREA: Queeens, NY

Classified by: **JGS**

Sample No.	Depth (ft.)	Visual Classification	Symbol
LTBSED-130			
Jar-1	10.0-12.0	Moist, dark olive gray & black, poorly graded sand with silt (tr. mica).	(SP-SM)
LTBSED-131			
Jar-1	7.9-9.9	Wet, black, silty sand. (w/shell frags. & tr. mica)	(SM)
LTBSED-132			
Jar-1	10.3-12.3	Very moist, very dark gray, clayey sand (tr. mica).	(SC)
LTBSED-133			
Jar-1	22.1-24.1	Very moist, dark olive gray & black, fat clay (tr. sand & mica).	(CH)
LTBSED-134			
Jar-1	19.5-21.5	Very moist, dark olive gray & black, fat clay (tr. sand & mica).	(CH)
LTBSED-135			
Jar-1	14.0-16.0	Very moist, dark olive gray & black, fat clay (tr. sand & mica).	(CH)
Jar-2	16.0-18.0	Very moist, dark olive gray & black, fat clay (tr. sand & mica).	(CH)
LTBSED-136			
Jar-1	11.6-13.6	Very moist, dark olive gray & black, fat clay with sand (tr. mica).	(CH)
LTBSED-137			
Jar-1	13.0-15.0	Very moist, dark olive gray & black, fat clay with sand (tr. mica).	(CH)
Jar-2	17.0-19.0	Moist, very dark gray, fat clay with sand (tr. mica).	(CH)

VISUAL-MANUAL CLASSIFICATIONS

(Test method: ASTM D2488)

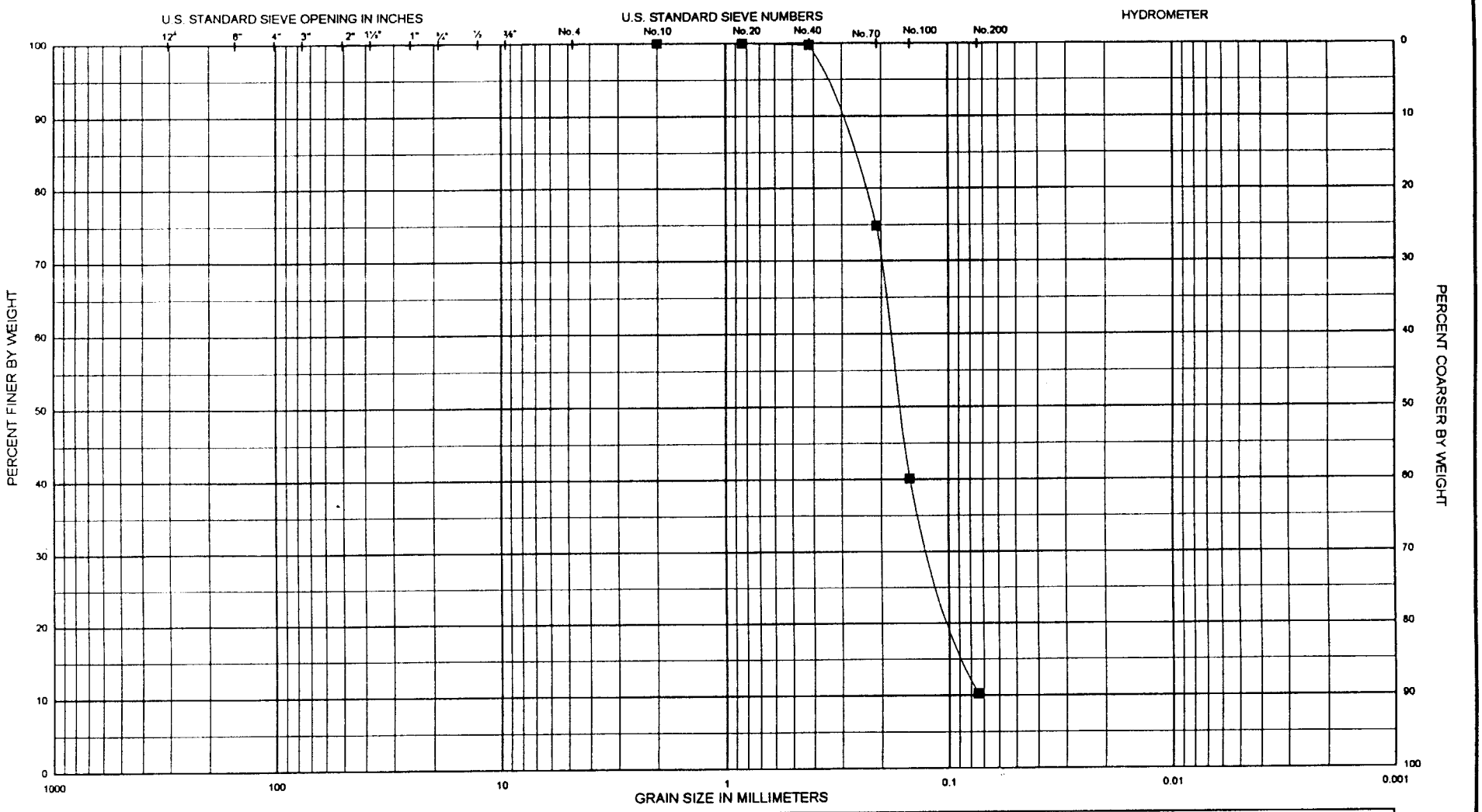
PROJECT: Fort Totten
Remedial Investigation – Phase II

AREA: Queeens, NY

DATE: Sep. 2000

Classified by: **JGS**

Sample No.	Depth (ft.)	Visual Classification	Symbol
LTBSED-138			
Jar-1	17.0-19.0	Very moist, dark olive gray & black, fat clay (tr. sand & mica).	(CH)
LTBSED-139			
Jar-1	24.6-26.6	Moist, very dark gray, fat clay with sand (tr. mica).	(CH)
LTBSED-141			
Jar-1	13.7-15.7	Very moist, dark olive gray & black, fat clay (tr. sand & mica).	(CH)
LTBSED-142			
Jar-1	13.0-15.0	Very moist, gray & black, sandy fat clay (tr. mica).	(CH)
LTBSED-144			
Jar-1	19.3-21.3	Very moist, dark olive gray & black, sandy fat clay (tr. mica).	(CH)

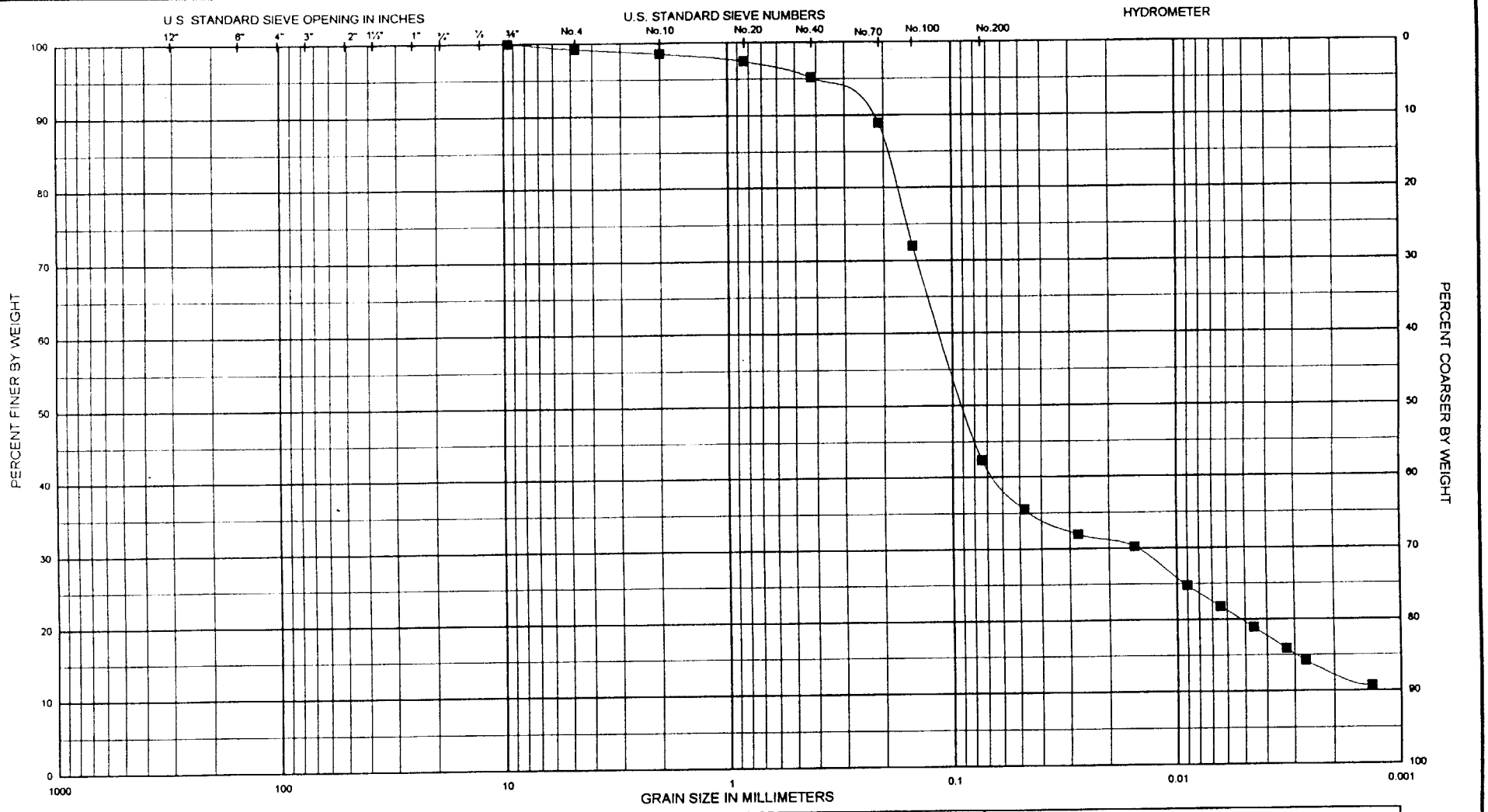


Legend	Sample No.	Depth (ft)	USCS Classification (ASTM D2487)	Nat w%	LL	PL	PI
—■—	Jar-1	10.0-12.0	Poorly graded sand with silt (tr. mica) (SP-SM)	———	———	———	———

PROJECT: Fort Totten
Remedial Investication - Phase II
AREA: Queens, NY
Boring No.: LTBSED-130
DATE: Sep 2000

ENG FORM 2087

GRADATION CURVES (Sieve Analysis: ASTM D422)



Legend	Sample No.	Depth (ft)	USCS Classification (ASTM D2487)	Nat w%	LL	PL	PI
—■—	Jar-1	10.3-12.3	Clayey sand (tr. mica) (SC)	———	37	22	15

PROJECT: Fort Totten
Remedial Investication - Phase II

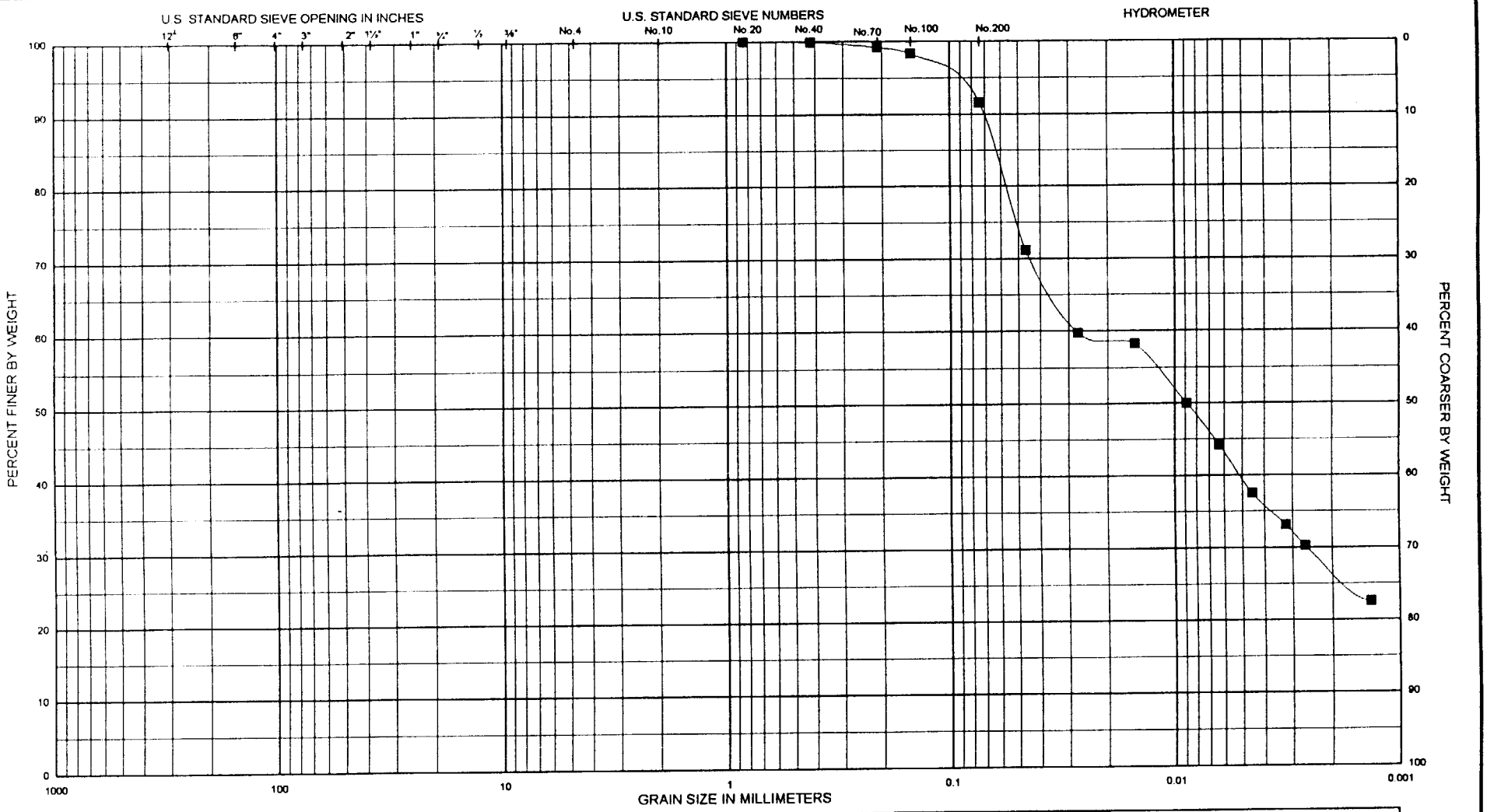
AREA: Queens, NY

Boring No.: LTBSED-132

DATE: Sep 2000

ENG FORM 2087

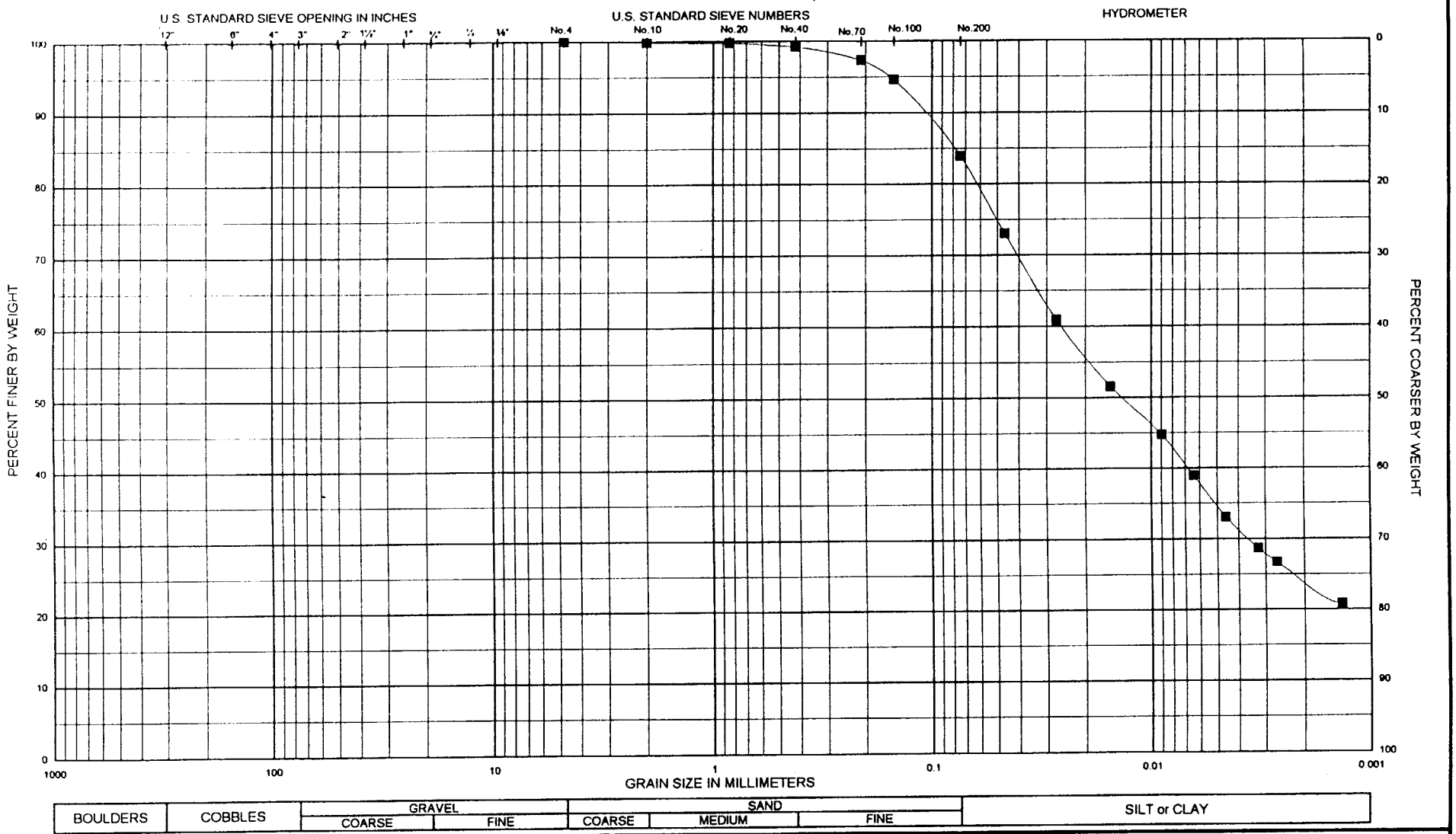
GRADATION CURVES (Sieve Analysis: ASTM D422)



Legend	Sample No.	Depth (ft)	USCS Classification (ASTM D2487)	Nat w%	LL	PL	PI
—■—	Jar-1	19.5-21.5	Lean clay (tr. sand & mica) (CL)	———	———	———	———

PROJECT: Fort Totten
Remedial Investication - Phase II
AREA: Queens, NY
Boring No.: LTBSED-134
DATE: Sep 2000

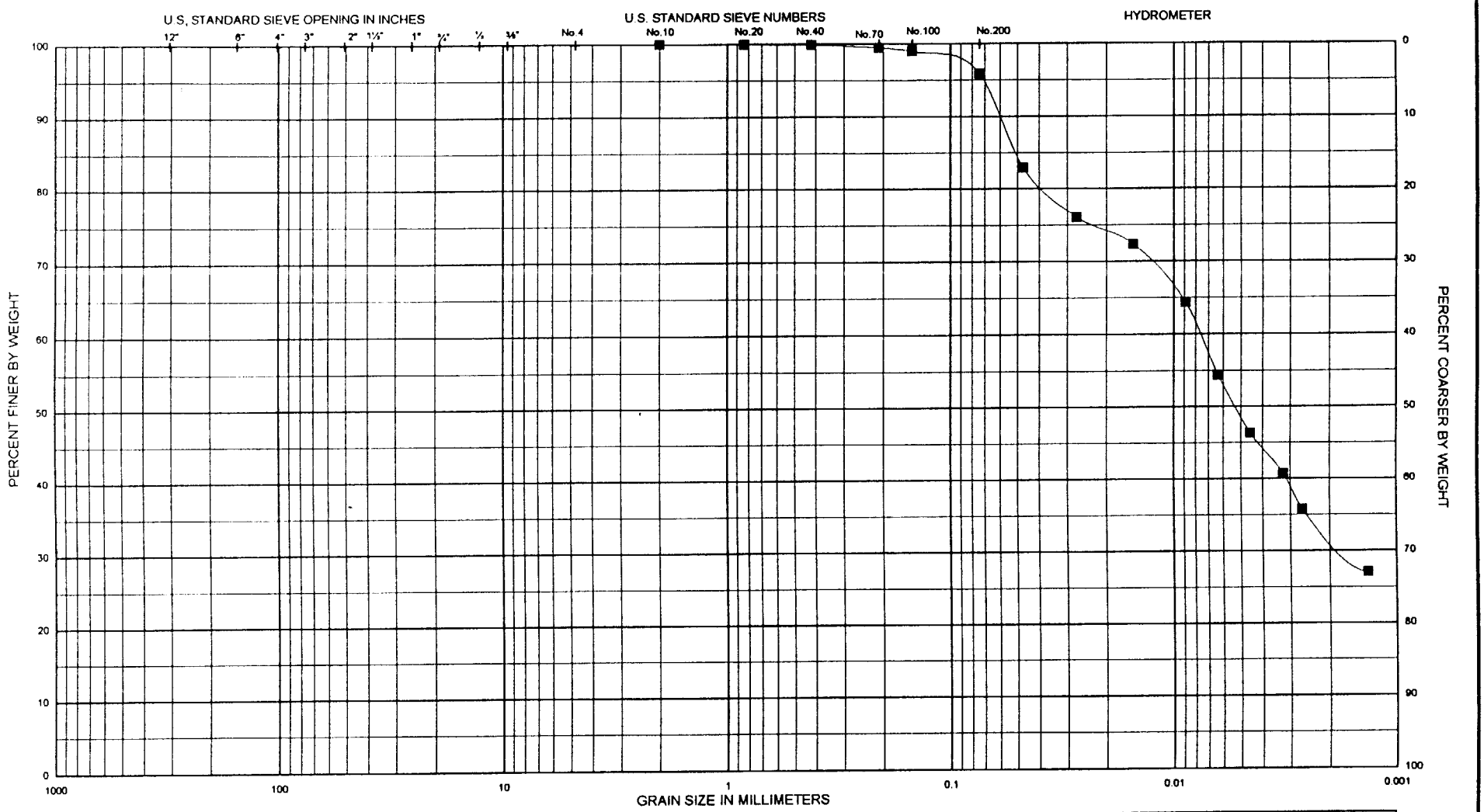
ENG FORM 2087 **GRADATION CURVES** (Sieve Analysis: ASTM D422)



Legend	Sample No.	Depth (ft)	USCS Classification (ASTM D2487)	Nat w%	LL	PL	PI
—■—	Jar-1	11.6-13.6	Lean clay with sand (tr. mica) (CL)	———	———	———	———

PROJECT: Fort Totten
Remedial Investication - Phase II
AREA: Queens, NY
Boring No.: LTBSED-136
DATE: Sep 2000

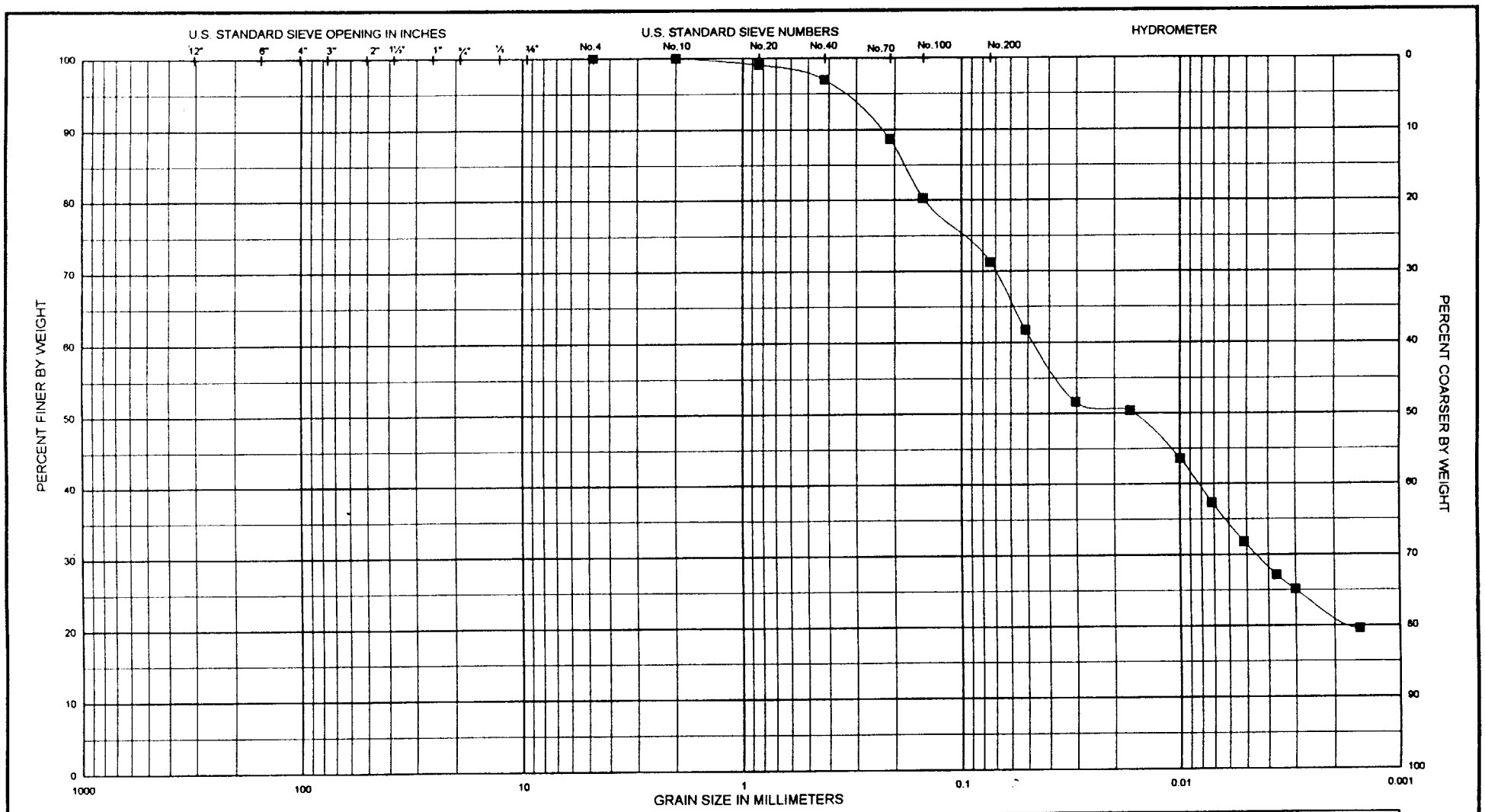
ENG FORM 2087 **GRADATION CURVES** (Sieve Analysis: ASTM D422)



Legend	Sample No.	Depth (ft)	USCS Classification (ASTM D2487)	Nat w%	LL	PL	PI
—■—	Jar-1	17.0-19.0	Lean clay (tr. sand & mica) (CL)	———	———	———	———

PROJECT: Fort Totten
Remedial Investication - Phase II
AREA: Queens, NY
Boring No.: LTBSED-138
DATE: Sep 2000

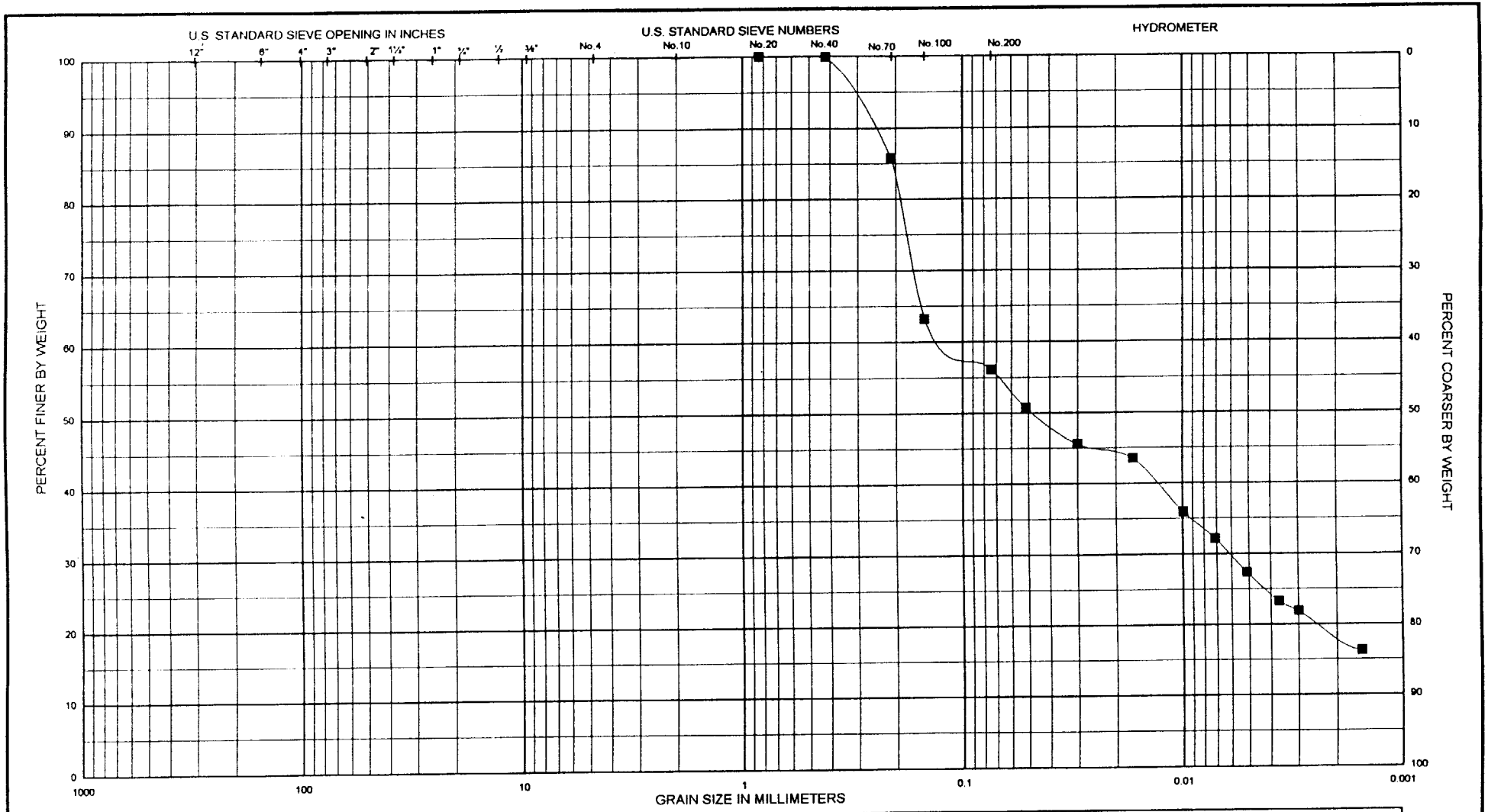
ENG FORM 2087 **GRADATION CURVES** (Sieve Analysis: ASTM D422)



Legend	Sample No.	Depth (ft)	USCS Classification (ASTM D2487)	Nat w%	LL	PL	PI
—■—	Jar-1	24.6-26.6	Fat clay with sand (tr. mica) (CH)	———	65	30	35

PROJECT: Fort Totten
Remedial Investication - Phase II
AREA: Queens, NY
Boring No.: LTBSED-139
DATE: Sep 2000

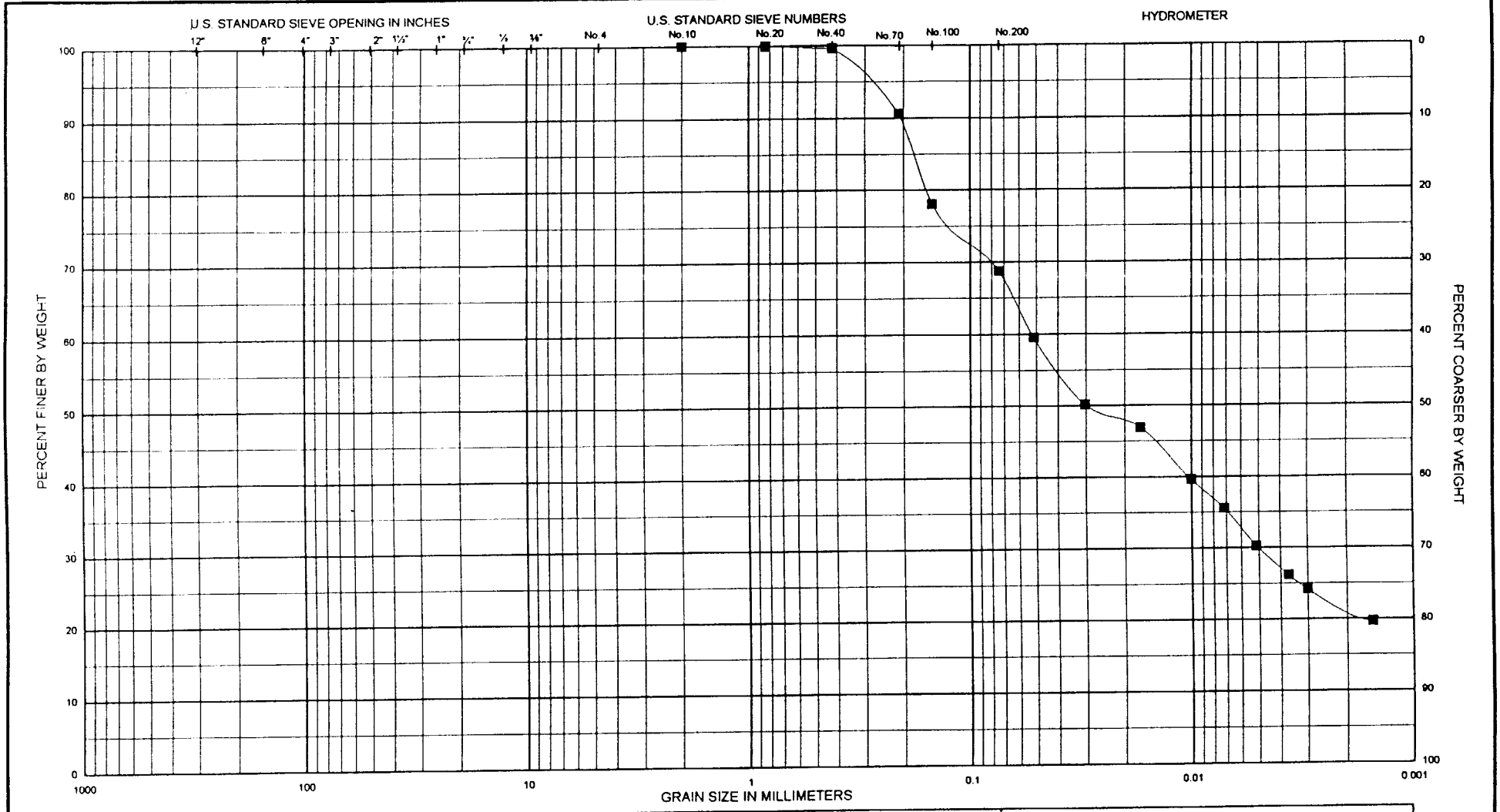
ENG FORM 2087 **GRADATION CURVES** (Sieve Analysis: ASTM D422)



Legend	Sample No.	Depth (ft)	USCS Classification (ASTM D2487)	Nat w%	LL	PL	PI
—■—	Jar-1	13.0-15.0	Sandy fat clay (tr. mica) (CH)	———	50	25	25

PROJECT: Fort Totten
Remedial Investication - Phase II
AREA: Queens, NY
Boring No.: LTBSED-142
DATE: Sep 2000

ENG FORM 2087 **GRADATION CURVES** (Sieve Analysis: ASTM D422)



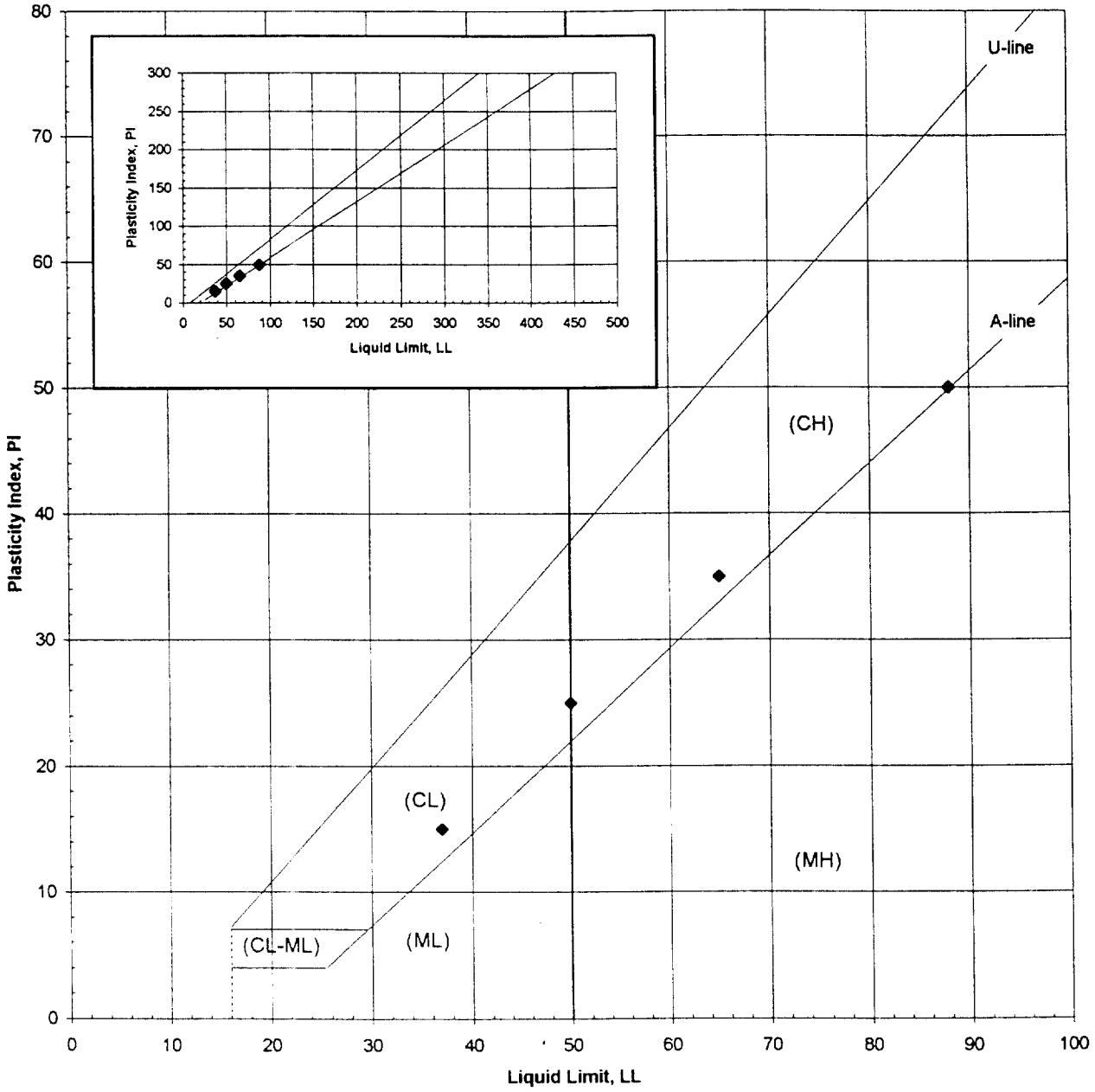
Legend	Sample No.	Depth (ft)	USCS Classification (ASTM D2487)	Nat w%	LL	PL	PI
—■—	Jar-1	19.3-21.3	Sandy fat clay (tr. mica) (CH)	——	88	38	50

PROJECT: Fort Totten
Remedial Investication - Phase II
AREA: Queens, NY
Boring No.: LTBSED-144
DATE: Sep 2000

ENG FORM 2087

GRADATION CURVES (Sieve Analysis: ASTM D422)

Plasticity Chart



NOTE: Atterberg Limits test is only performed on minus No.40 size material portion of sample and does not represent the entire sample. Refer to Visual Classification or the Gradation Analysis for the complete classification.

Hole Nos.: LTBSED-132, 139, 142 & 144	PROJECT: Fort Totten Remedial Investication - Phase II AREA: Queens, NY DATE: Sep.2000

Appendix E

Remedial Investigation Phase 2
Geotechnical Sediment Reports

VISUAL-MANUAL CLASSIFICATIONS

PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY

DATE: Sep.1998
Classified by: *Sharpe*

Sample No.	Depth (ft.)	Visual Classification	Symbol
SB-1			
Jar-1	15.0-16.0	Moist, brown, micaceous silty sand.	(SM)
SB-2			
Jar-1	15.0-16.0	Moist, yellowish red & brown, silty sand (tr. gravel).	(SM)
SB-3			
Jar-1	15.0-16.0	Damp, red, silty sand.	(SM)
SB-4			
Jar-1	17.0-18.0	Moist, red, silty sand (tr. gravel & mica).	(SM)
SB-5			
Jar-1	18.0-19.0	Moist, reddish brown, micaceous silt (tr. sand).	(ML)
SB-6			
Jar-1	6.0-7.0	Moist, brown & grayish brown, sandy silt.	(ML)
SB-7			
Jar-1	17.0-18.0	Moist, yellowish brown, well-graded sand with silt (tr. gravel & mica).	(SW-SM)
SB-8			
Jar-1	8.0-9.0	Moist, dark yellowish brown, poorly graded sand with silt (tr. gravel & mica).	(SP-SM)
SB-9			
Jar-1	20.0-22.0	Moist, brown, silt with sand (tr. mica).	(ML)

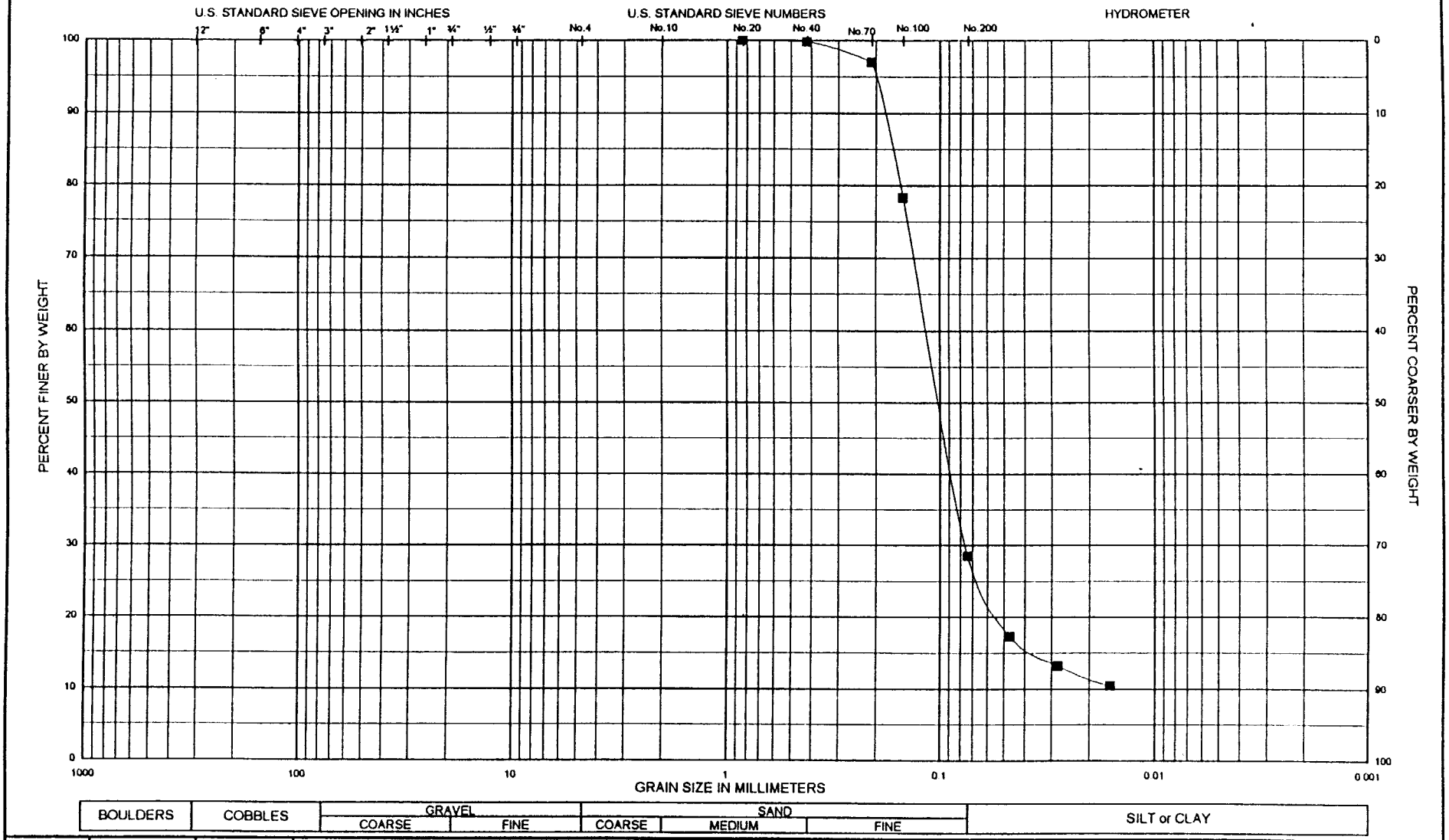
VISUAL-MANUAL CLASSIFICATIONS

PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY

DATE: Sep.1998

Classified by: *Sharpe*

Sample No.	Depth (ft.)	Visual Classification	Symbol
SB-10			
Jar-1	17.0-18.0	Moist, yellowish brown, silty sand (tr. gravel).	(SM)
SB-11			
Jar-1	17.0-18.0	Moist, reddish brown, silty sand (tr. gravel).	(SM)
SB-12			
Jar-1	16.0-17.0	Very moist, olive gray, silty sand (tr. gravel & mica).	(SM)
SB-13			
Jar-1	17.0-18.0	Moist, brown, silty sand (tr. gravel).	(SM)

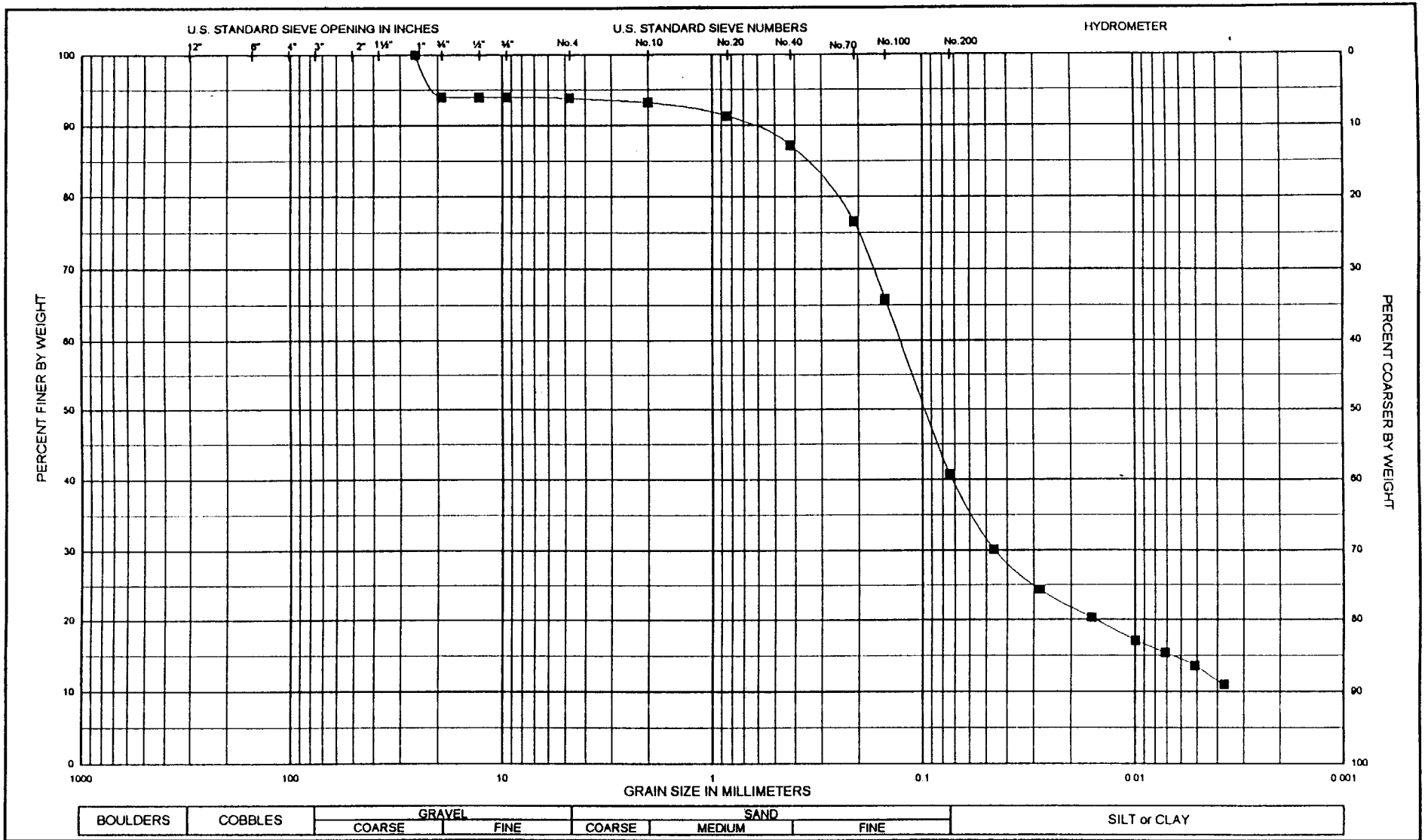


Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	15.0-16.0	Micaceous silty sand (SM)	———	———	———	———

PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY
Boring No.: SB-1
DATE: Sep 1998

ENG FORM 2087

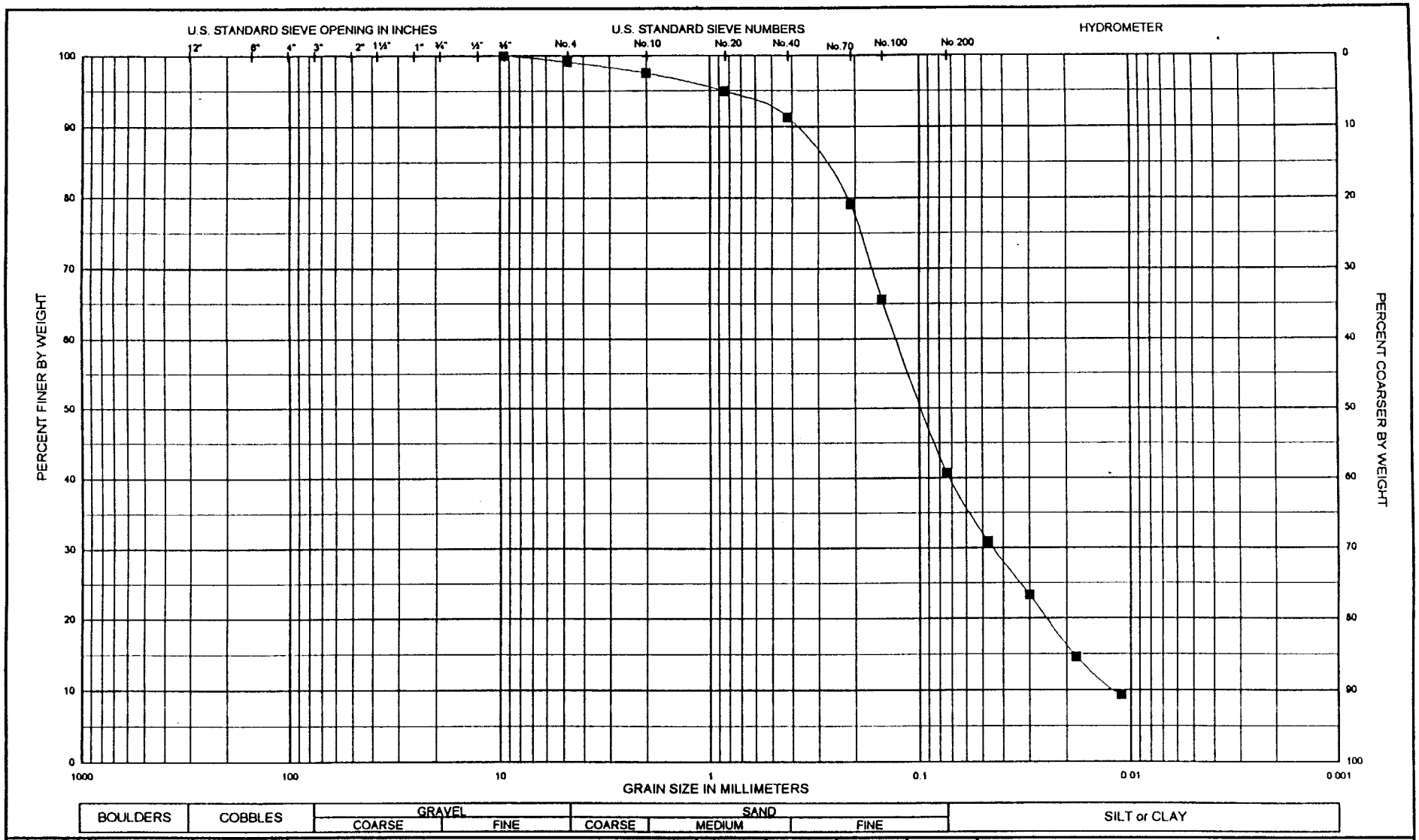
GRADATION CURVES



Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	15.0-16.0	Silty sand (tr. gravel) (SM)	12.9	19	16	3

PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY
Boring No.: SB-2
DATE: Sep 1998

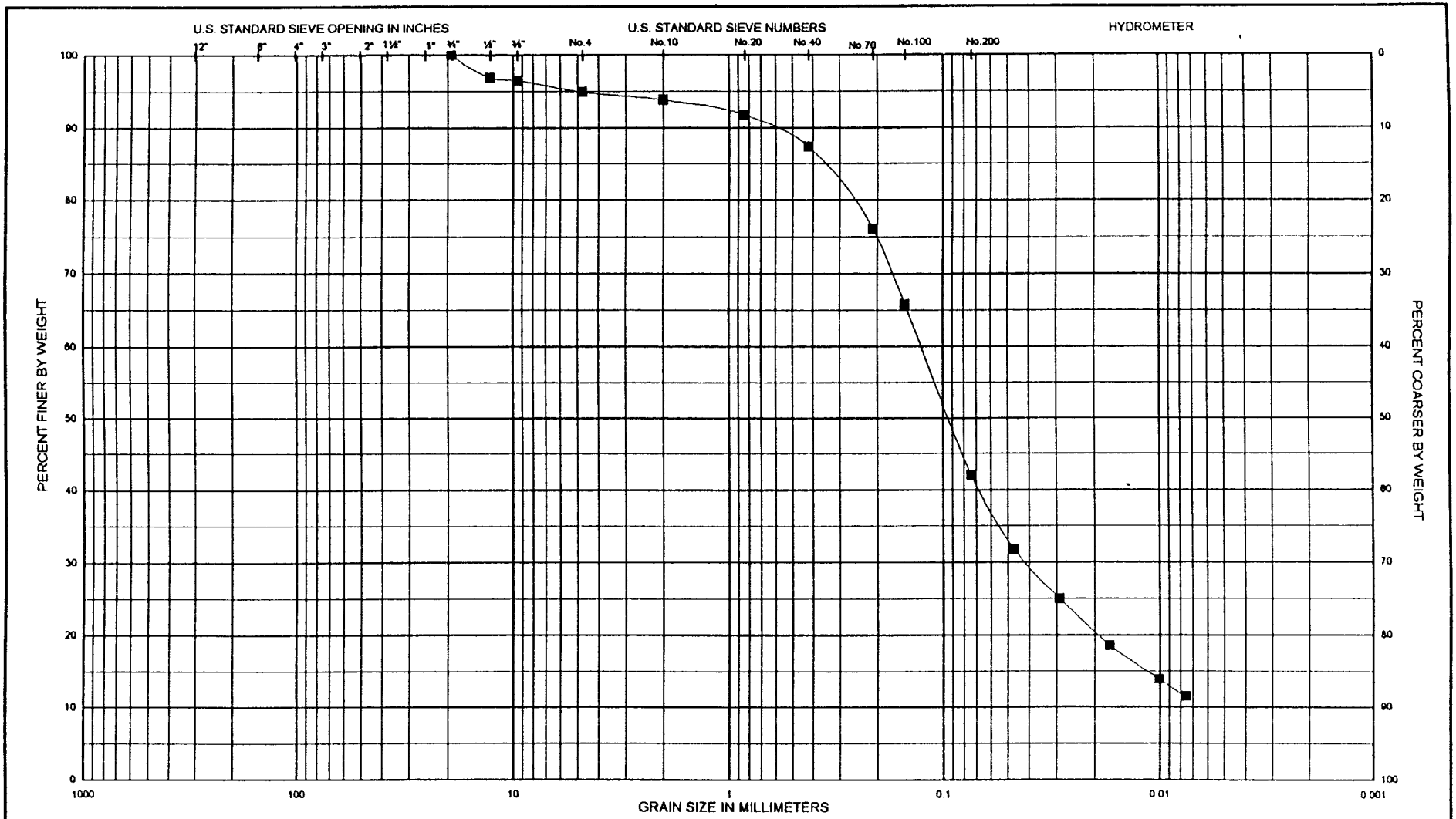
ENG FORM 2087 **GRADATION CURVES**



Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	15.0-16.0	Silty sand (SM)	12.2		N.P.	

ENG FORM 2087 **GRADATION CURVES**

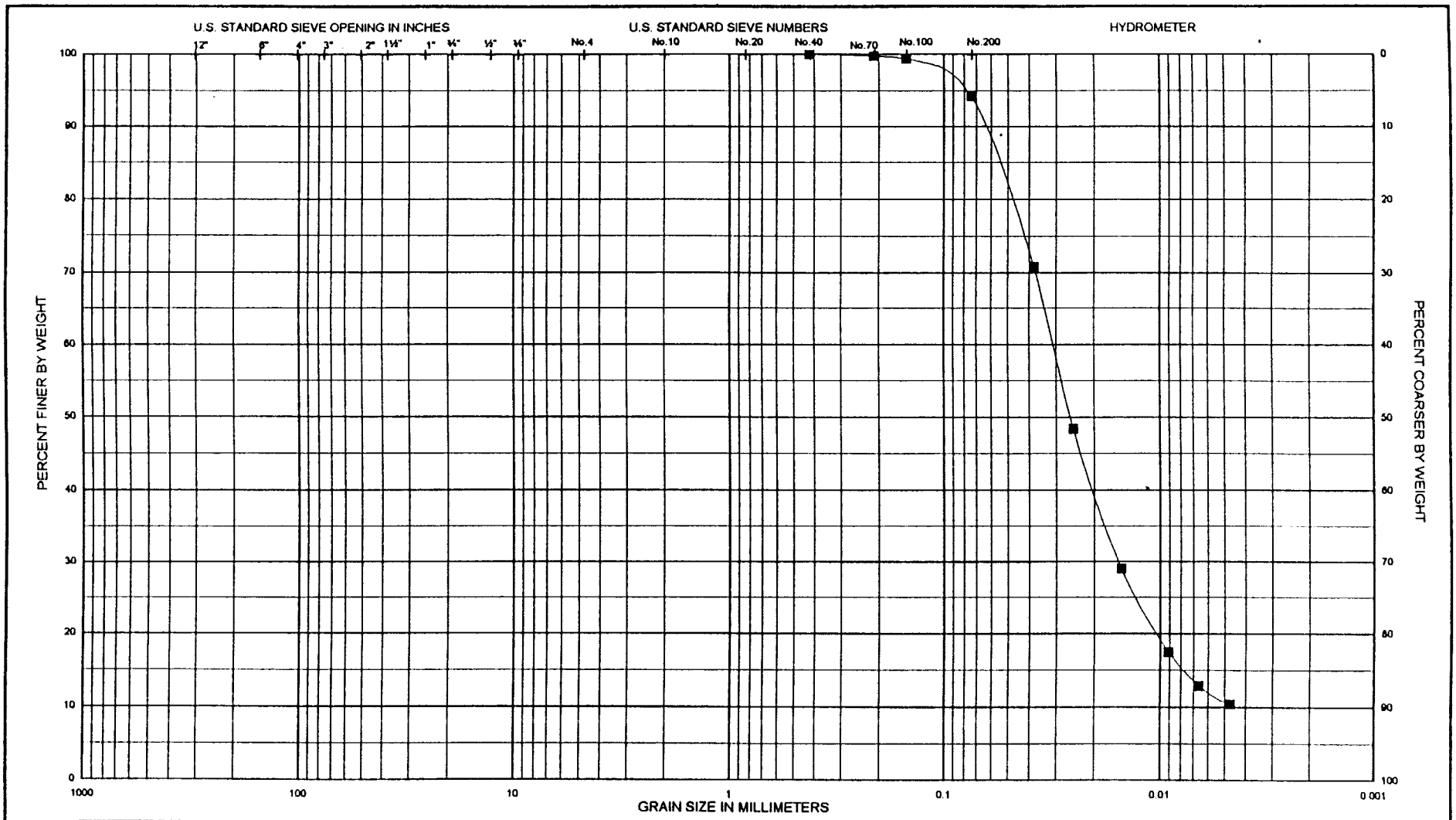
PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY
Boring No.: SB-3
DATE: Sep 1998



Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	17.0-18.0	Silty sand (tr. gravel & mica) (SM)	14.8	19	16	3

PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY
Boring No.: SB-4
DATE: Sep 1998

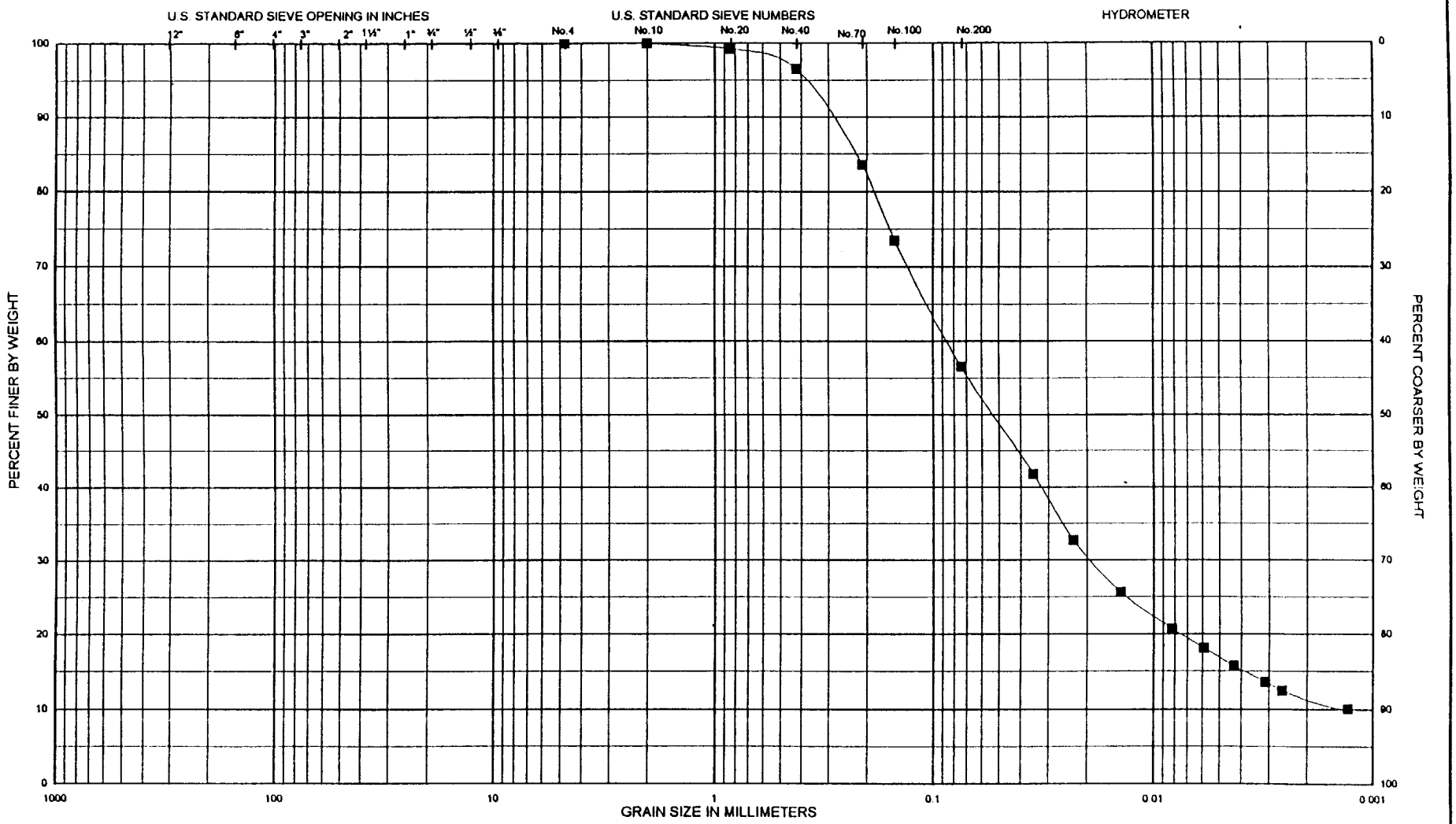
ENG FORM 2087 **GRADATION CURVES**



Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	18.0-19.0	Micaceous silt (tr. sand) (ML)	22.8	30	26	4

PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY
Boring No.: SB-5
DATE: Sep 1998

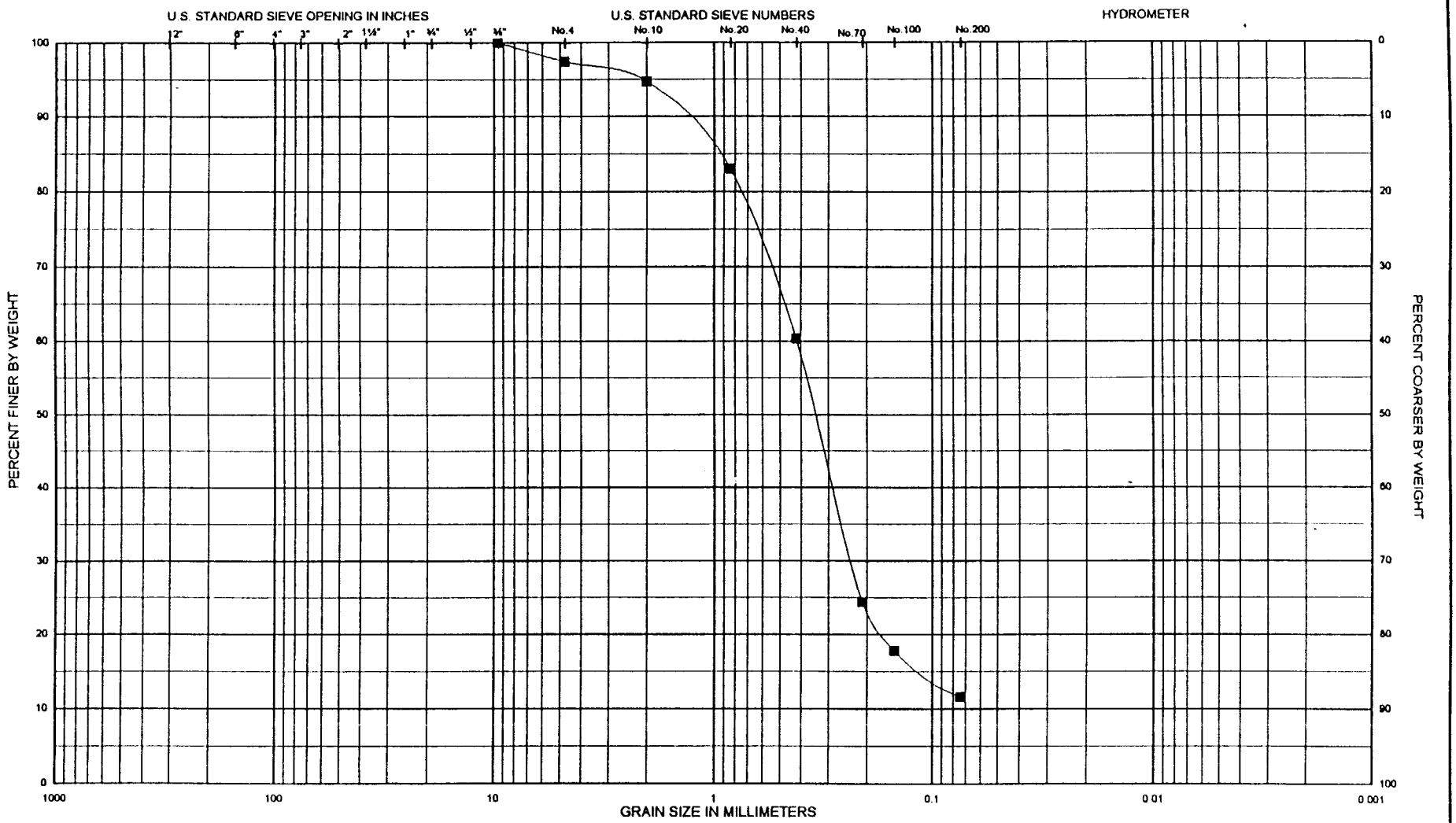
ENG FORM 2087 **GRADATION CURVES**



Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	6.0-7.0	Sandy silt (ML)	18.8	15	14	1

PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY
Boring No.: SB-6
DATE: Sep 1998

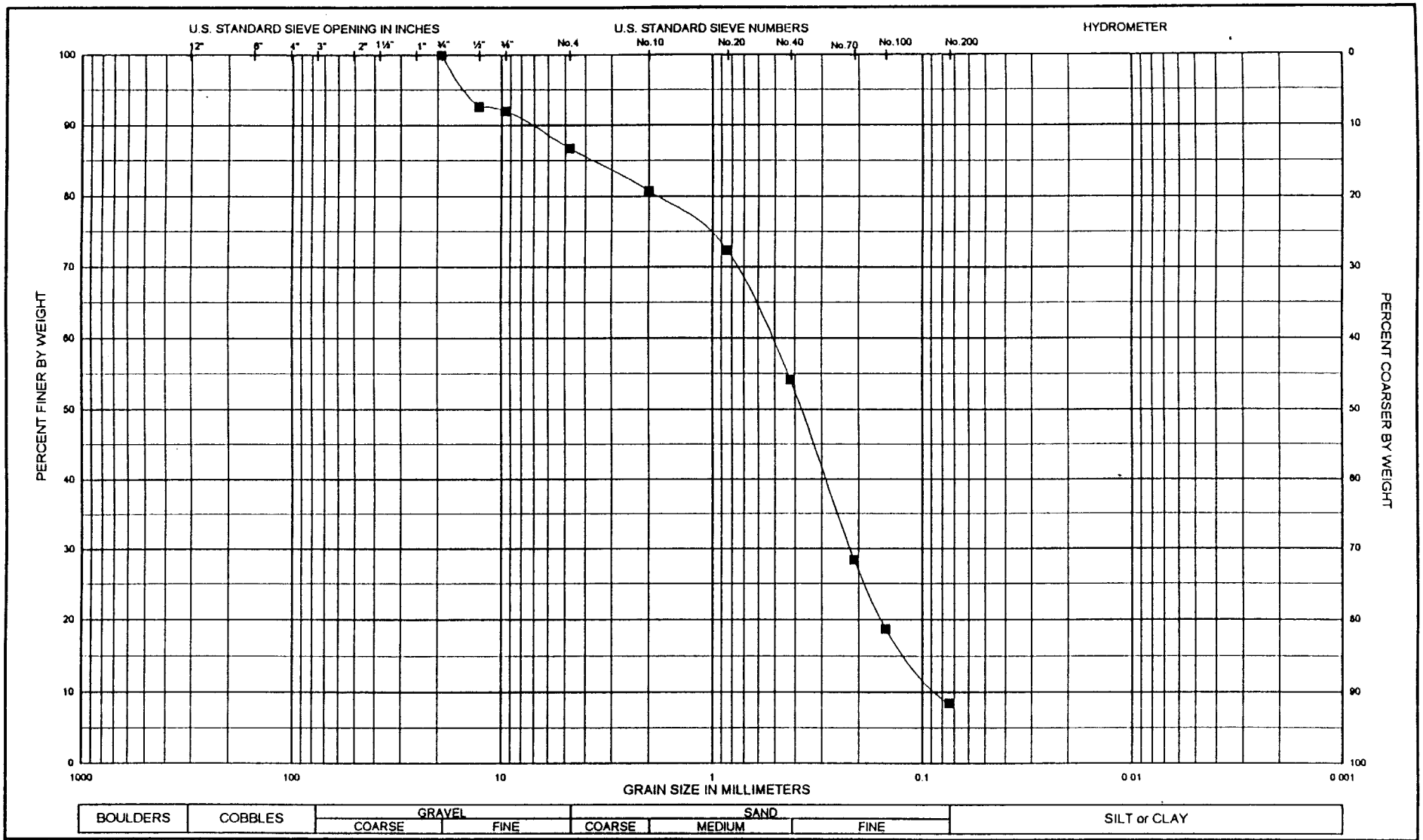
ENG FORM 2087 **GRADATION CURVES**



Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	17.0-18.0	Well-graded sand with silt (tr. gravel & mica) (SW-SM)	———	———	———	———

ENG FORM 2087 **GRADATION CURVES**

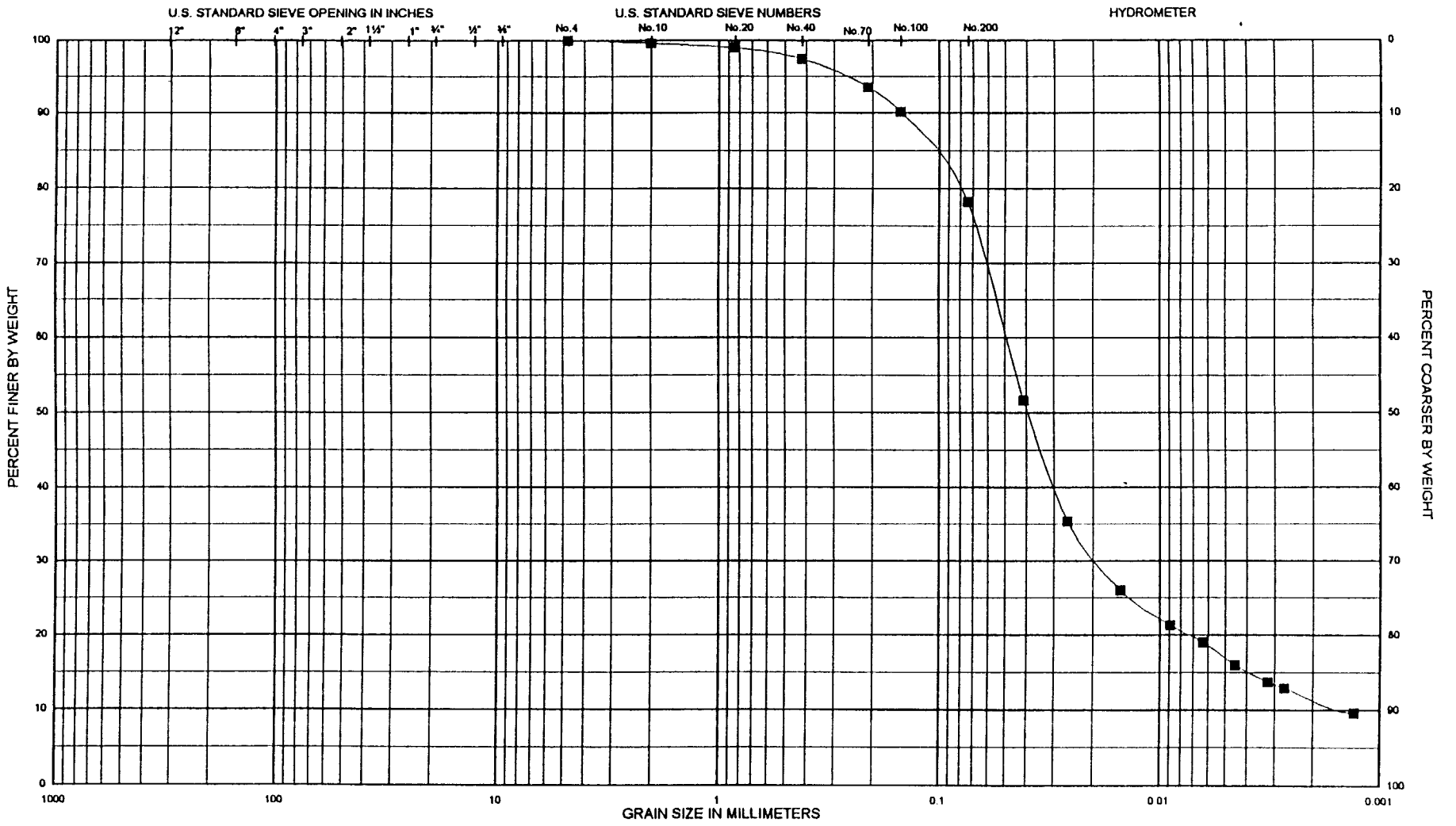
PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY
Boring No.: SB-7
DATE: Sep 1998



Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	8.0-9.0	Poorly graded sand with silt (tr. gravel & mic (SP-SM)	———	———	———	———

ENG FORM 2087 **GRADATION CURVES**

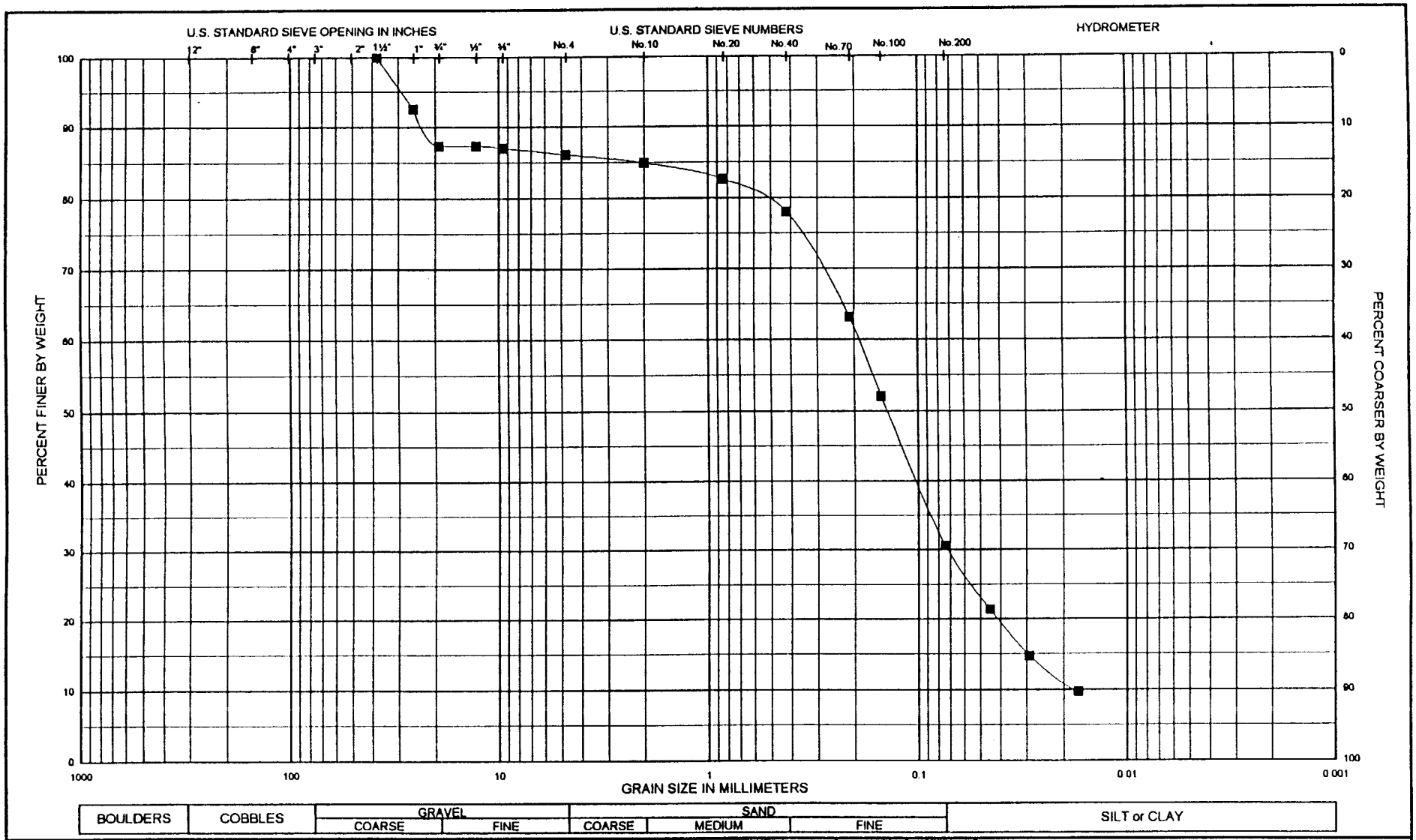
PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY
Boring No.: SB-8
DATE: Sep 1998



Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	20.0-22.0	Silt with sand (tr. mica) (ML)	26.7	28	24	4

PROJECT: Fort Totten Remedial Investigation
AREA: Queens, NY
Boring No.: SB-9
DATE: Sep 1998

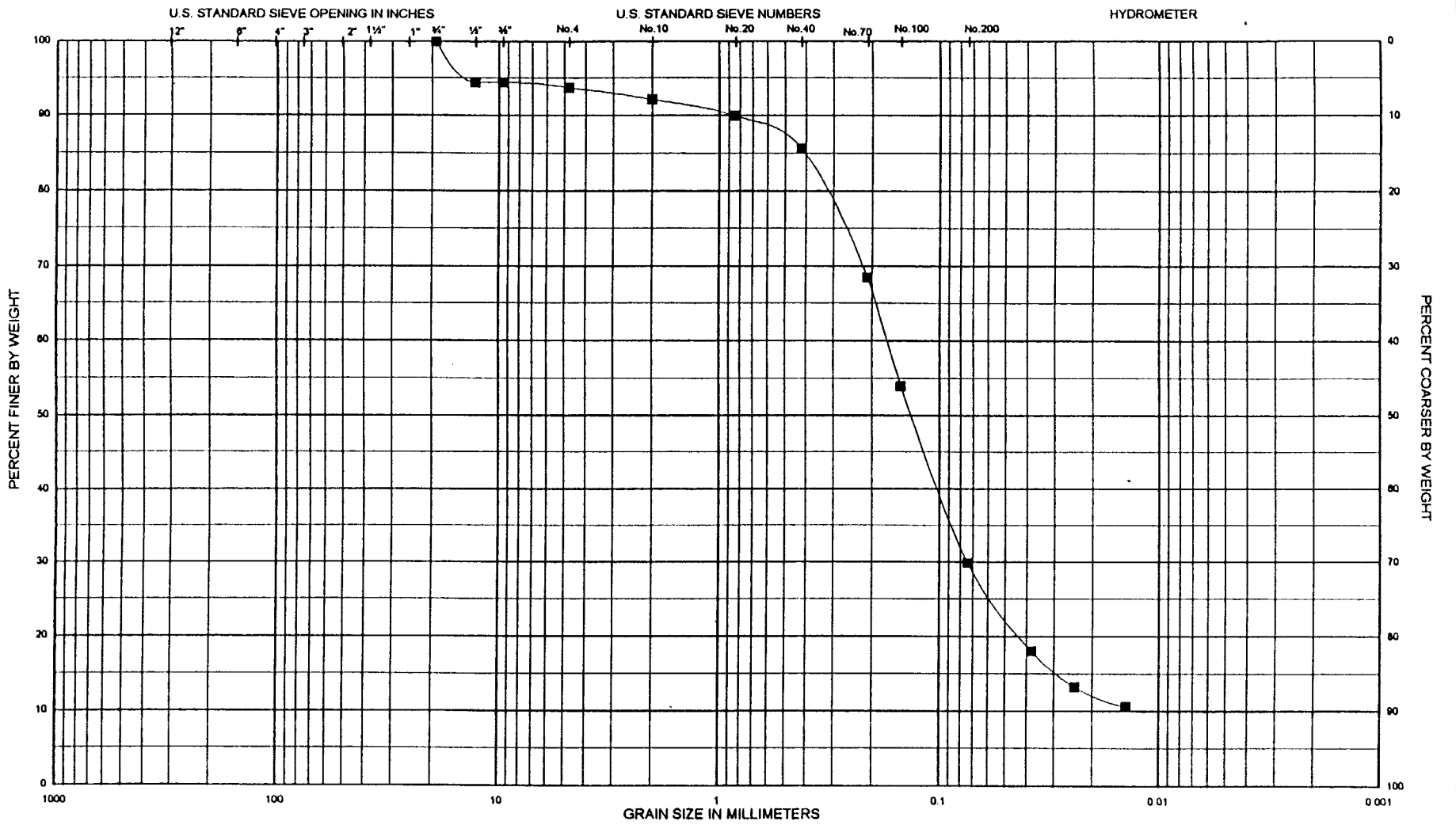
ENG FORM 2087 **GRADATION CURVES**



Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	17.0-18.0	Silty sand (tr. gravel) (SM)	———	———	———	———

PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY
Boring No.: SB-10
DATE: Sep 1998

ENG FORM 2087 **GRADATION CURVES**

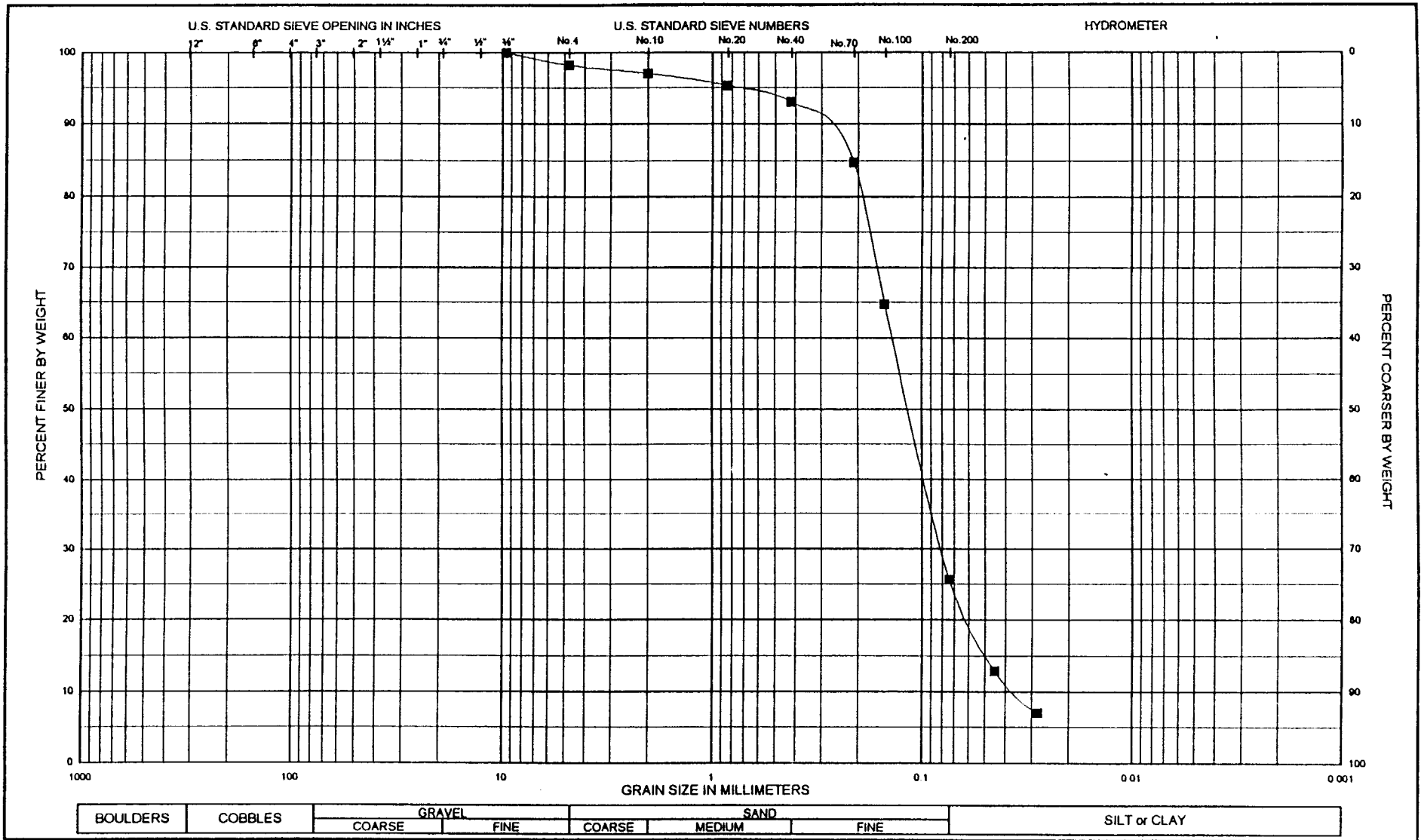


Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	17.0-18.0	Silty sand (tr. gravel) (SM)	11.9		N.P.	

PROJECT: Fort Totten Remedial Investigation
AREA: Queens, NY
Boring No.: SB-11
DATE: Sep 1998

ENG FORM 2087

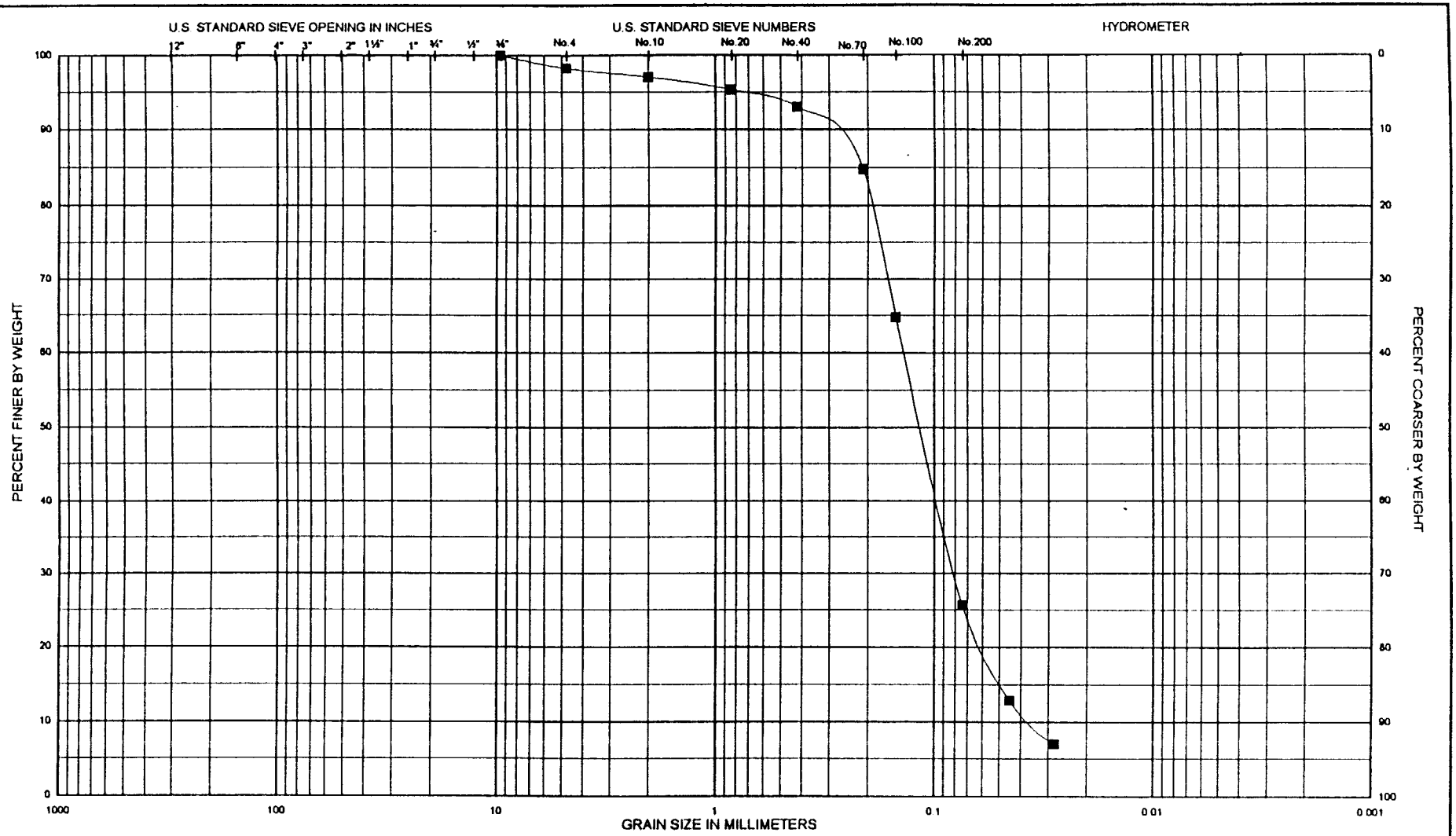
GRADATION CURVES



Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	16.0-17.0	Silty sand (tr. gravel & mica) (SM)	———	———	———	———

ENG FORM 2087 **GRADATION CURVES**

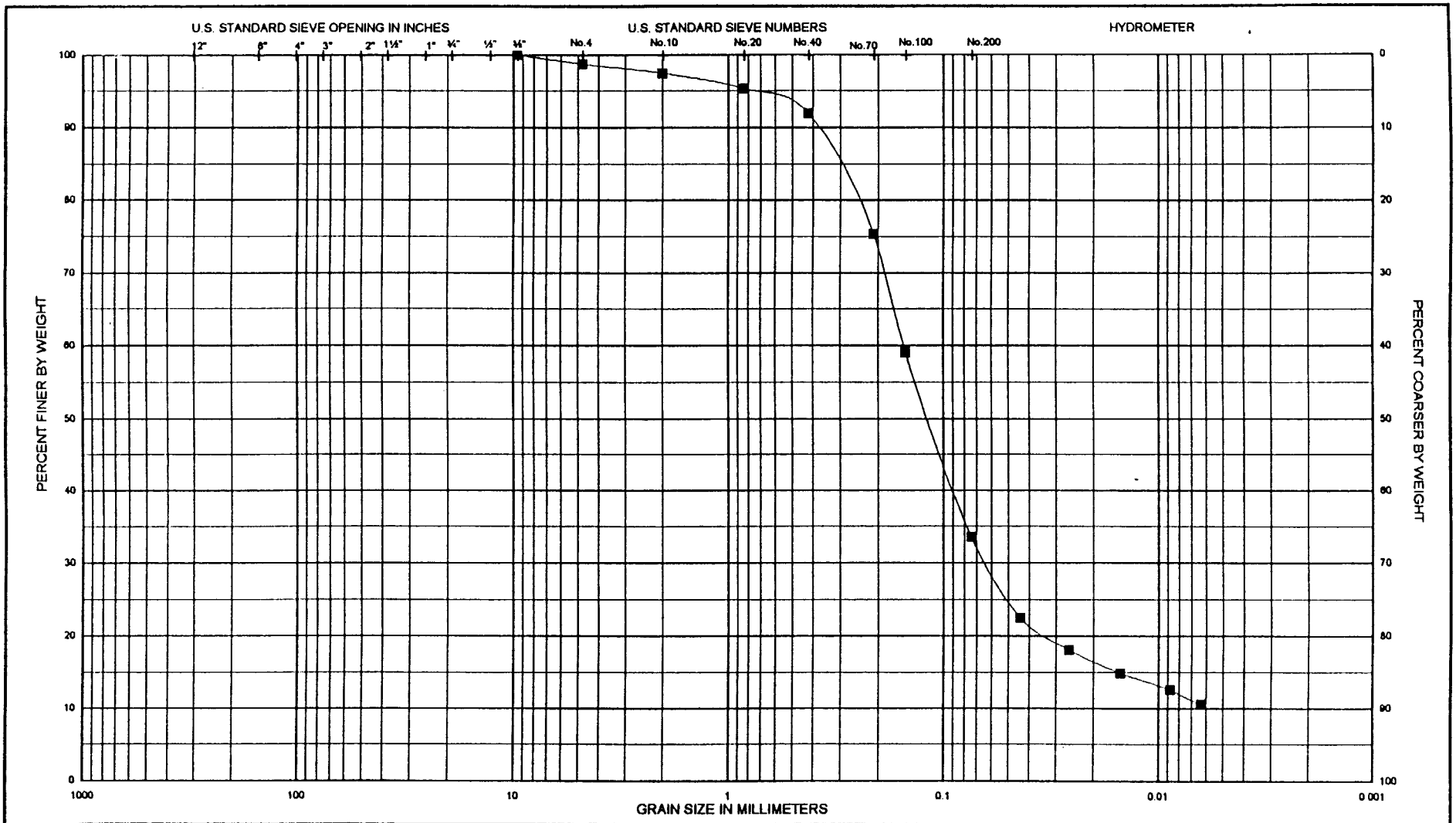
PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY
Boring No.: SB-12
DATE: Sep 1998



Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	16.0-17.0	Silty sand (tr. gravel & mica) (SM)	———	———	———	———

ENG FORM 2087 **GRADATION CURVES**

PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY
Boring No.: SB-12
DATE: Sep 1998



Legend	Sample No.	Depth (ft)	Classification	Nat w%	LL	PL	PI
—■—	Jar-1	17.0-18.0	Silty sand (tr. gravel) (SM)	14.5		N.P.	

PROJECT: Fort Totten
Remedial Investigation
AREA: Queens, NY
Boring No.: SB-13
DATE: Sep 1998

ENG FORM 2087 **GRADATION CURVES**

Appendix F

Remedial Investigation Phase 2
Sediment Boring Logs

Hole No. LTBSED132

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF SHEETS

1. PROJECT FT TOTTEN REMEDIAL INVESTIGATION PHASE 2	10. SIZE AND TYPE OF BIT 3" ID SPLIT SPOON
2. LOCATION (Coordinates or Station) BAYSIDE, QUEENS, NY	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY CENAB	12. MANUFACTURER'S DESIGNATION OF DRILL BARGE WITH TRIPOD
4. HOLE NO. (As shown on drawing title and file number) LTBSED132	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 1 — UNDISTURBED —
5. NAME OF DRILLER DAN BOWDEN	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER SURFACE
	16. DATE HOLE — STARTED 7-7-00 — COMPLETED 7-7-00
7. THICKNESS OF OVERBURDEN 10.0	17. ELEVATION TOP OF HOLE WATER SURFACE
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 14.3	19. SIGNATURE OF INSPECTOR WEBSTER SHIPLEY [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
4.3	2.0 / 4.0		WATER			DRILLING WAS DONE FROM BARGE WITH TRIPOD USING A 3" ID SPLIT SPOON DRIVEN BY A 140 LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING
	6.0		SAND, MEDIUM GRAY, WET, SOFT	80%		BLOW COUNTS 4.3-6.3 1,1,1,1 6.3-8.3 WOH, WOH, WOH, WOH
	8.0			70%		8.3-10.3 WOH, 1, WOH, 1 10.3-12.3 WOH, 1, WOH, 1
	10.0		10.3 SAND MEDIUM GRAY WET SOFT WITH INCREASING SILT AND MUD CONTENT TRACE SHELL FRAGMENTS	75%		12.3-14.3 3, 7, 10, 17
	12.0			100%	J-1	NO POCKET PENETROMETER READINGS TAKEN
	14.0			100%		
14.3			EOH - 14.3			OTHER SUITE OF SAMPLES TAKEN BY EHT.

PRELIMINARY INSPECTOR'S LOG CLASSIFICATION NOT FINAL

ENG FORM 1836 PROJECT FT TOTTEN REMEDIAL INV HOLE NO.

Hole No. LTBSED133

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT FT TOTTEN REMEDIAL INVESTIGATION PHASE 2	10. SIZE AND TYPE OF BIT 3.0" ID SPLIT SPOON
2. LOCATION (Coordinates or Station) BAYSIDE, QUEENS, NY	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY CENAB	12. MANUFACTURER'S DESIGNATION OF DRILL BARGE
4. HOLE NO. (As shown on drawing title and file number) LTBSED133	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 1 / UNDISTURBED —
5. NAME OF DRILLER DAN BOWDEN	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER SURFACE
7. THICKNESS OF OVERBURDEN 10.0'	16. DATE HOLE STARTED 7-6-00 / COMPLETED 7-6-00
8. DEPTH DRILLED INTO ROCK —	17. ELEVATION TOP OF HOLE SURFACE OF WATER
9. TOTAL DEPTH OF HOLE 24.1'	18. TOTAL CORE RECOVERY FOR BORING — %
	19. SIGNATURE OF INSPECTOR WEBSTER SHIPLEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOV-ERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2.0		WATER			DRILLING WAS DONE FROM BARGE WITH TRIPOD USING A 3" ID SPLITSPOON DRIVEN BY A 140 LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING
	4.0					
	6.0					
	8.0					
	10.0					
	12.0					
14.1	14.1					
	16.0		MUD, BLACK VERY WET VERY SOFT, ODOR OF DECAYING ORGANIC MATTER	25%		BLOW COUNTS 14.1-16.1 WOR, WOR, WOR, WOR
	18.0		18.1 - MUD AND SILT VERY WET, SOFT BUT FIRMER THAN ABOVE. NO STRUCTURE	80%		16.1-18.1 WOR, WOR, WOR, WOR 18.1-20.1 WOR, WOR, WOH, WOH
	20.0			85%		20.1-22.1 WOH, WOH, WOH, WOH 22.1-24.1 WOH, WOH, WOH, WOH
	22.0			100%		
	24.0			100%	J-1	
24.1			EOH 24.1'			NO POCKET PENETROMETER READINGS TAKEN OTHER SUITE OF SAMPLES TAKEN BY CHT

PRELIMINARY
[illegible] LOG
[illegible]

ENG FORM 1836 [illegible] EDITIONS ARE OBSOLETE. PROJECT FT TOTTEN REMEDIAL INV HOLE NO.

Hole No. LTBSED134

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT	FT TOTTEN REMEDIAL INVESTIGATION PHASE 2
2. LOCATION (Coordinates or Station)	BAYSIDE, QUEENS, NY
3. DRILLING AGENCY	CENAB
4. HOLE NO. (As shown on drawing title and file number)	LTBSED134
5. NAME OF DRILLER	DAN BOWDEN
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	10.0
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	23.5'
10. SIZE AND TYPE OF BIT	3.0" ID SPLIT SPOON
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	BARGE
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 1 / UNDISTURBED —
14. TOTAL NUMBER CORE BOXES	—
15. ELEVATION GROUND WATER	SURFACE
16. DATE HOLE	STARTED 7-6-00 / COMPLETED 7-6-00
17. ELEVATION TOP OF HOLE	SURFACE OF WATER
18. TOTAL CORE RECOVERY FOR BORING	— %
19. SIGNATURE OF INSPECTOR	WEBSTER SHIPLEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2.0		WATER			DRILLING WAS DONE FROM BARGE WITH TRIPOD USING A 3" ID SPLIT SPOON DRIVEN BY A 140LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING.
	4.0					
	6.0					
	8.0					
	10.0					
13.5'	12.0					
	14.0		MUD, BLACK VERY WET VERY SOFT, ODOR OF DECAYING ORGANIC MATTER	20%		BLOW COUNTS 13.5-15.5 WOR, WOR, WOR, WOR 15.5-17.5 WOR, WOR, WOR, WOR 17.5-19.5 WOR, WOR, WOR, WOR 19.5-21.5 WOR, WOR, WOR, WOR 21.5-23.5 WOR, WOR, WOR, WOH
	16.0			75%		
	18.0			70%		
	20.0			90%	J-1	
	22.0			90%		
23.5			EOH 23.5'			NO POCKET PENETROMETER READINGS TAKEN OTHER SUITE OF SAMPLES TAKEN BY EHT

PRELIMINARY
INSPECTOR'S LOG
NOT FOR CONSTRUCTION
PURPOSES

ENG FORM 1836 ... PREVIOUS EDITIONS ARE OBSOLETE

PROJECT FT TOTTEN REMEDIAL INV | HOLE NO.

Hole No. LTBSED135

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT	FT TOTTEN REMEDIAL INVESTIGATION PHASE 2
2. LOCATION (Coordinates or Station)	BAYSIDE, QUEENS, NY
3. DRILLING AGENCY	CENAB
4. HOLE NO. (As shown on drawing title and file number)	LTBSED135
5. NAME OF DRILLER	DAN BOWDEN
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	10.0'
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	18.0'
10. SIZE AND TYPE OF BIT	3.0" ID SPLIT SPOON
11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	BARGE
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 2 / UNDISTURBED —
14. TOTAL NUMBER CORE BOXES	—
15. ELEVATION GROUND WATER	SURFACE
16. DATE HOLE	STARTED 6-29-00 / COMPLETED 6-29-00
17. ELEVATION TOP OF HOLE	SURFACE OF WATER
18. TOTAL CORE RECOVERY FOR BORING	— %
19. SIGNATURE OF INSPECTOR	WEBSTER SHIPLEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2.0		WATER			DRILLING WAS DONE FROM A BARGE WITH TRIPOD USING A 3" ID SPLIT SPOON DRIVEN BY A 140 LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING
	4.0					
	6.0					
8.0	8.0					
	10.0		MUD, VERY WET, VERY SOFT ALMOST GELATINOUS, HOMOGENEOUS, ODOR OF DECAYING ORGANIC MATTER	45%		BLOW COUNTS 8.0 - 10.0 WOR, WOR, WOR, WOR 10.0 - 12.0 WOR, WOR, WOR, WOR 12.0 - 14.0 WOR, WOR, WOR, WOH 14.0 - 16.0 WOH, WOH, WOH, WOH 16.0 - 18.0 WOH, WOH, WOH, WOH
	12.0		12.0 - AS ABOVE W/ TRACE SILT AND VERY FINE SAND, ALSO BLACK BUT LESS SLFT AND LESS WET	80%		
	14.0			100%		
	16.0			100%	J-1	
	18.0	1		100%	J-2	
18.0			EOH - 18.0'			NO POCKET PENETROMETER READINGS TAKEN OTHER SUITE OF SAMPLES TAKEN BY EHT

PRELIMINARY
INSPECTOR'S LOG
[illegible]

ENG FORM 1836 [illegible] PROJECT FT TOTTEN REMEDIAL INV HOLE NO.

Hole No. LTBSED136

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT: FT TOTTEN REMEDIAL INVESTIGATION PHASE 2
2. LOCATION (Coordinates or Station): BAYSIDE, QUEENS, NY
3. DRILLING AGENCY: CENAB
4. HOLE NO. (As shown on drawing title and file number): LTBSED136
5. NAME OF DRILLER: DAN BOWDEN
6. DIRECTION OF HOLE: ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 10.0
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 17.6
10. SIZE AND TYPE OF BIT: 3.0 "ID SPLIT SPOON
11. DATUM FOR ELEVATION SHOWN (TBM or MSL):
12. MANUFACTURER'S DESIGNATION OF DRILL: BARGE
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 1 / UNDISTURBED —
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: SURFACE
16. DATE HOLE: STARTED 6-29-00 / COMPLETED 6-29-00
17. ELEVATION TOP OF HOLE: SURFACE OF WATER
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: WEBSTER SHIPLEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2.0 4.0 6.0		WATER			DRILLING WAS DONE FROM A BARGE WITH TRIPOD USING A 3"ID SPLIT SPOON DRIVEN BY A 140 LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING
7.6'	8.0 10.0 12.0 14.0 16.0		MUD, VERY WET VERY SOFT, BLACK, MED ODOR OF ORGANIC MATTER. 11.6 - MUD BLACK, SOFT AND WET BUT FIRMER THAN ABOVE	55% 100% 100% 100% 100%	 J-1 	BLOW COUNTS 7.6 - 9.6 WOR, WOR, WOR, WOR 9.6 - 11.6 WOR, WOR, WOR, WOR 11.6 - 13.6 WOR, WOR, WOR, WOR 13.6 - 15.6 WOH, WOH WOH WOH 15.6 - 17.6 WOH, WOH, WOH WOH
17.6			EOH 17.6			NO POCKET PENETROMETER READINGS TAKEN OTHER SUITE OF SAMPLES TAKEN BY EHT

PRELIMINARY
INSPECTOR'S LOG
CLASSIFICATION
NOT FINAL

ENG FORM 1836 — PROJECT FT TOTTEN REMEDIAL INV — HOLE NO.

Hole No. LTBSED137

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT: FT TOTTEN REMEDIAL INVESTIGATION PHASE 2	10. SIZE AND TYPE OF BIT: 30" ID SPLIT SPOON
2. LOCATION (Coordinates or Station): BAYSIDE, QUEENS, NY	11. DATUM FOR ELEVATION SHOWN (TBM or MSL):
3. DRILLING AGENCY: CENAB	12. MANUFACTURER'S DESIGNATION OF DRILL: BARGE
4. HOLE NO. (As shown on drawing title and file number): LTBSED137	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 2; UNDISTURBED —
5. NAME OF DRILLER: DAN BOWDEN	14. TOTAL NUMBER CORE BOXES: —
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER: SURFACE
	16. DATE HOLE: STARTED 6-28-00; COMPLETED 6-28-00
7. THICKNESS OF OVERBURDEN: 10.0	17. ELEVATION TOP OF HOLE: SURFACE OF WATER
8. DEPTH DRILLED INTO ROCK: —	18. TOTAL CORE RECOVERY FOR BORING: — %
9. TOTAL DEPTH OF HOLE: 19.0	19. SIGNATURE OF INSPECTOR: WEBSTER SHIPLEY [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
9.0	2.0, 4.0, 6.0, 8.0		WATER			DRILLING WAS DONE FROM A BARGE WITH TRIPOD USING A 3" ID SPLIT SPOON DRIVEN BY A 140 LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING
	10.0		MUD, BLACK VERY WET VERY SOFT, ODORIFEROUS TR BROKEN SHELLS	65%		BLOW COUNTS 9.0-11.0 WOR, WOR, WOR, WOR 11.0-13.0 WOR, WOR, WOR, WOR
	12.0		13- MUD, BLACK SOFT WET ORGANIC DEBRIS SLIGHT ODOR, LESS WET THAN ABOVE	50%		13.0-15.0 WOH, WOH, WOH, WOH 15.0-17.0 WOH, WOH, WOH, WOH
	14.0			100%	J-1	17.0-19.0 WOH, WOH, WOH, WOH
	16.0			100%		
	18.0			100%	J-2	
19.0			EOH 19.0'			NO POCKET PENETROMETER READINGS TAKEN OTHER SUITE OF SAMPLES TAKEN BY EHT

PRELIMINARY DRILLING LOG CLASSIFICATION NOT FINAL

ENG FORM 1836 ... PROJECT FT TOTTEN REMEDIAL INV | HOLE NO.

Hole No. LTBSED138

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS
1. PROJECT FT TOTTEN REMEDIAL INVESTIGATION PHASE 2		10. SIZE AND TYPE OF BIT 3.0" ID SPLIT SPOON	
2. LOCATION (Coordinates or Station) BAYSIDE, QUEENS, NY		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY CENAB		12. MANUFACTURER'S DESIGNATION OF DRILL BARGE	
4. HOLE NO. (As shown on drawing title and file number) LTBSED138		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 1 / UNDISTURBED —	
5. NAME OF DRILLER DAN BOWDEN		14. TOTAL NUMBER CORE BOXES —	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER SURFACE	
7. THICKNESS OF OVERBURDEN 10.0'		16. DATE HOLE: STARTED 6-29-00 / COMPLETED 6-29-00	
8. DEPTH DRILLED INTO ROCK —		17. ELEVATION TOP OF HOLE SURFACE OF WATER	
9. TOTAL DEPTH OF HOLE 21.0'		18. TOTAL CORE RECOVERY FOR BORING — %	
		19. SIGNATURE OF INSPECTOR WEBSTER SHIPLEY	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2.0		WATER			DRILLING WAS DONE FROM A BARGE WITH TRIPOD USING 3" ID SPLIT SPOON DRIVEN BY A 140 LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING
	4.0					
	6.0					
	8.0					
11.0'	10.0					
	12.0		MUD, BLACK, VERY WET, VERY SOFT, MILD ODOR OF DECAYING MATTER.	25%		BLOW COUNTS 11.0 - 13.0 WOR, WOR, WOR, WOR
	14.0		15. MUD, BLACK, SOFT AND WET BUT FIRMER THAN ABOVE	100%		13.0 - 15.0 WOR, WOR, WOR, WOR 15.0 - 17.0 2, 1, 1, 2
	16.0			60%		17.0 - 19.0 WOR, WOR, WOR, WOR 19.0 - 21.0 WOR, WOR, WOR, WOR
	18.0			100%	J-1	
	20.0			100%		
21.0'			EOH 21.0'			NO POCKET PENETROMETER READINGS TAKEN OTHER SUITE OF SAMPLES TAKEN BY EHT

PRELIMINARY
INVESTIGATORS LOG
CLASSIFICATION
NOT FINAL

ENG FORM 1836 — PROJECT FT TOTTEN REMEDIAL INV — HOLE NO.

Hole No. LTBSED139

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS
1. PROJECT FT TOTTEN REMEDIAL INVESTIGATION, PHASE 2		10. SIZE AND TYPE OF BIT 3.0" ID SPLIT SPOON	
2. LOCATION (Coordinates or Station) BAYSIDE, QUEENS, NY		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY CENAB		12. MANUFACTURER'S DESIGNATION OF DRILL BARGE	
4. HOLE NO. (As shown on drawing title and file number) LTBSED139		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 1 / UNDISTURBED —	
5. NAME OF DRILLER DAN BOWDEN		14. TOTAL NUMBER CORE BOXES —	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15. ELEVATION GROUND WATER SURFACE	
7. THICKNESS OF OVERBURDEN 10.0'		16. DATE HOLE: STARTED 6-29-00 / COMPLETED 6-29-00	
8. DEPTH DRILLED INTO ROCK —		17. ELEVATION TOP OF HOLE SURFACE OF WATER	
9. TOTAL DEPTH OF HOLE 26.6'		18. TOTAL CORE RECOVERY FOR BORING — %	
		19. SIGNATURE OF INSPECTOR WEBSTER SHIPLEY	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2.0		WATER			DRILLING WAS DONE FROM A BARGE WITH TRIPOD USING 3.0" ID SPLIT SPOON DRIVEN BY A 140 LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING
	4.0					
	6.0					
	8.0					
	10.0					
	12.0					
	14.0					
16.6	16.0					
	18.0		MUD, BLACK, VERY WET, VERY SOFT, MIXED ORGANIC DECAYING MATERIAL FEATURELESS	80%		BLOW COUNTS 16.6 - 18.6 WOR, WOR, WOR, WOR
	20.0		21.6 MUD MOSTLY LESS WET LESS SOFT	100%		18.6 - 20.6 WOR, WOR, WOR, WOR 20.6 - 22.6 WOR, WOR, WOR, WOR
	22.0			100%		22.6 - 24.6 WOR, WOR, WOR, WOR
	24.0			100%		24.6 - 26.6 WOR, WOH, WOR, WOR
	26.0			100%	J-1	
26.6			EOH 26.6'			NO POCKET PENETROMETER READINGS TAKEN OTHER SUITE OF SAMPLES TAKEN BY EHT

PRELIMINARY INSPECTOR'S LOG CONSTRUCTION NOT FINAL

ENG FORM 1072 ... OBSOLETE

PROJECT FT TOTTEN REMEDIAL INV. | HOLE NO.

Hole No. LTBSED 140

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT FT TOTTEN REMEDIAL INVESTIGATION PHASE 2	10. SIZE AND TYPE OF BIT 3.0" ID SPLIT SPOON
2. LOCATION (Coordinates or Station) BAYSIDE, QUEENS, NY	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY CENAB	12. MANUFACTURER'S DESIGNATION OF DRILL BARGE
4. HOLE NO. (As shown on drawing title and file number) LTBSED140	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 0 — UNDISTURBED —
5. NAME OF DRILLER DAN BOWDEN	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER SURFACE
	16. DATE HOLE — STARTED 7-6-00 — COMPLETED 7-6-00
7. THICKNESS OF OVERBURDEN 10.0'	17. ELEVATION TOP OF HOLE SURFACE OF WATER
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 21.2'	19. SIGNATURE OF INSPECTOR WEBSTER SHIPLEY [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2.0					DRILLING WAS DONE FROM A BARGE WITH TRIPOD USING A 3" ID SPLIT SPOON DRIVEN BY A 140 LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING
	4.0		WATER			
	6.0					
	8.0					
	10.0					
11.2'						
	12.0		MUD, BLACK, VERY WET, VERY SOFT, ODOR OF DECAYING ORGANIC MATTER	20%		BLOW COUNTS 11.2-13.2 WOR, WOR, WOR, WOR 13.2-15.2 WOR, WOR, WOR, WOR 15.2-17.2 1, 1, WOH, 1 17.2-19.2 1, 1, 1, 1 19.2-21.2 WOH, WOH, WOH, WOH
	14.0		SAND, LIGTH TO MEDIUM GRAY, FINE, SOFT AND WET	55%		
	16.0		17.0 MUD MEDIUM GRAY WET AND SOFT BUT FIRMER THAN ABOVE	70%		
	18.0	1		90%		
	20.0			100%		
21.2'			EOH - 21.2'			NO POCKET PENETROMETER READINGS TAKEN OTHER SUITE OF SAMPLES TAKEN BY EHT.

[redacted]

[redacted]

[redacted]

ENG FORM 1836 ... PREVIOUS EDITIONS ARE OBSOLETE | PROJECT FT TOTTEN REMEDIAL INV | HOLE NO.

Hole No. LTBSED141

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS
1. PROJECT FT TOTTEN REMEDIAL INVESTIGATION PHASE 2		10. SIZE AND TYPE OF BIT 3.0" ID SPLIT SPOON	
2. LOCATION (Coordinates or Station) BAYSIDE, QUEENS, NY		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY CENAB		12. MANUFACTURER'S DESIGNATION OF DRILL BARGE	
4. HOLE NO. (As shown on drawing title and file number) LTBSED141		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 1	UNDISTURBED —
5. NAME OF DRILLER DAN BOWDEN		14. TOTAL NUMBER CORE BOXES —	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.		15. ELEVATION GROUND WATER SURFACE	
7. THICKNESS OF OVERBURDEN 10.0'		16. DATE HOLE STARTED 7-6-00	COMPLETED 7-6-00
8. DEPTH DRILLED INTO ROCK —		17. ELEVATION TOP OF HOLE SURFACE OF WATER	
9. TOTAL DEPTH OF HOLE 17.7'		18. TOTAL CORE RECOVERY FOR BORING — %	
		19. SIGNATURE OF INSPECTOR WEBSTER SHIPLEY	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2.0		WATER			DRILLING WAS DONE FROM A BARGE WITH TRIPOD USING A 3"ID SPLIT SPOON DRIVEN BY A 140LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING.
	4.0					
	6.0					
7.7'	8.0		MUD, BLACK VERY WET VERY SOFT, TR SAND RING, MILD ODOR OF DECAYING MATER	25%		BLOW COUNTS 7.7-9.7 WOH, WOH, WOH, WOH 9.7-11.7 WOH, WOH, WOH, WOH 11.7-13.7 WOH, WOH, WOH, WOH 13.7-15.7 WOR, WOR, WOH, WOH 15.7-17.7 WOR, WOH, 1, 1
	10.0			30%		
	12.0			25%		
	14.0			60%	J-1	
	16.0			100%		
17.7'	18.0		EOH - 17.7			NO POCKET PENETROMETER READINGS TAKEN OTHER SUITE OF SAMPLES TAKEN BY EH

PRELIMINARY
GEOLOGIST'S LOG
INVESTIGATION
NOT FINAL

ENG FORM [illegible]

PROJECT FT TOTTEN REMEDIAL INV | HOLE NO.

Hole No. LTBSED142

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT	FT TOTTEN REMEDIAL INVESTIGATION PHASE 2
2. LOCATION (Coordinates or Station)	BAYSIDE, QUEENS, NY
3. DRILLING AGENCY	CENAB
4. HOLE NO. (As shown on drawing title and file number)	LTBSED142
5. NAME OF DRILLER	DAN BOWDEN
6. DIRECTION OF HOLE	☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN	10.0
8. DEPTH DRILLED INTO ROCK	—
9. TOTAL DEPTH OF HOLE	19.0
10. SIZE AND TYPE OF BIT	3.0" ID SPLIT SPOON
11. DATUM FOR ELEVATION SHOWN (USN or MSL)	
12. MANUFACTURER'S DESIGNATION OF DRILL	BARGE
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED 1 / UNDISTURBED —
14. TOTAL NUMBER CORE BOXES	—
15. ELEVATION GROUND WATER	SURFACE
16. DATE HOLE	STARTED 7-6-00 / COMPLETED 7-6-00
17. ELEVATION TOP OF HOLE	SURFACE OF WATER
18. TOTAL CORE RECOVERY FOR BORING	— %
19. SIGNATURE OF INSPECTOR	WEBSTER SHIPLEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2.0 4.0 6.0 8.0		WATER			DRILLING WAS DONE FROM A BARGE WITH TRIPOD USING A 3" ID SPLIT SPOON DRIVEN BY A 140 LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING
9.0'						
	10.0		MUD, BLACK, VERY WET VERY SOFT STRONG ODOR OF DECAYING ORGANIC MATTER	40%		BLOW COUNTS 9.0 - 11.0 WOR, WOR, WOR, WOR 11.0 - 13.0 WOR, WOR, WOR, WOR 13.0 - 15.0 WOR, WOR, 5, 3 15.0 - 17.0 5, 5, 4, 5 17.0 - 19.0 3, 4, 4, 4
	12.0			35%		
	14.0		14.0 MUDDY SAND, LIGHT GRAY, VERY WET, VERY SOFT, NO ODOR.	100%	J-1	
	16.0			55%		
	#8.0			20%		
19.0'			EOH - 19.0'			NO POCKET PENETROMETER READINGS TAKEN OTHER SUITE OF SAMPLES TAKEN BY ENT

PRELIMINARY
INSPECTOR'S LOG
CLASSIFICATION
NOT FINAL

ENG. FORM 1836 — PROJECT FT TOTTEN REMEDIAL INV — HOLE NO.

Hole No. LTBSED 143

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT FT TOTTEN REMEDIAL INVESTIGATION PHASE 2	10. SIZE AND TYPE OF BIT 3.0" ID SPLIT SPOON
2. LOCATION (Coordinates or Station) BAYSIDE, QUEENS, NY	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY CENAB	12. MANUFACTURER'S DESIGNATION OF DRILL BARGE
4. HOLE NO. (As shown on drawing title and file number) LTBSED143	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 0 — UNDISTURBED —
5. NAME OF DRILLER DAN BOWDEN	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER
	16. DATE HOLE — STARTED 6-30-00 — COMPLETED 6-30-00
7. THICKNESS OF OVERBURDEN 10.0'	17. ELEVATION TOP OF HOLE SURFACE OF WATER
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 24.2'	19. SIGNATURE OF INSPECTOR WEBSTER SHIPLEY [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2.0					DRILLING WAS DONE FROM A BARGE WITH TRIPOD USING A 3" ID SPLIT SPOON DRIVEN BY A 140 LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING
	4.0					
	6.0		WATER			
	8.0					
	10.0					
	12.0					
14.2	14.0					
	16.0		MUD BLACK, VERY SOFT VERY WET, MILD ODOR OF DECAYING ORGANIC MATTER	20%		BLOW COUNTS 14.2-16.2 WOR, WOR, WOR, WOR 16.2-18.2 WOR, WOR, WOR, WOR
	18.0			45%		18.2-20.2 WOR, WOR, WOR, WOR 20.2-22.2 WOR, WOR, WOR, WOR
	20.0			60%		22.2-24.2 WOR, WOR, WOR, WOR
	22.0		22.0 - SAME AS ABOVE BUT FIRMER	40%		
	24.0			60%		
24.2			EOH - 24.2			NO POCKET PENETROMETER READINGS TAKEN OTHER SUITE OF SAMPLES TAKEN BY EHT

PRELIMINARY
INSPECTOR'S LOG
CLASSIFICATION
NOT FINAL

ENG FORM ... PROJECT FT. TOTTEN REMEDIAL INV. HOLE NO.

Hole No. LTBSED144

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT FT TOTTEN REMEDIAL INVESTIGATION PHASE 2	10. SIZE AND TYPE OF BIT 3.0" ID SPLIT SPOON
2. LOCATION (Coordinates or Station) BAYSIDE, QUEENS, NY	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY CENAB	12. MANUFACTURER'S DESIGNATION OF DRILL BARGE
4. HOLE NO. (As shown on drawing title and file number) LTBSED144	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 1 — UNDISTURBED —
5. NAME OF DRILLER DAN BOWDEN	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER SURFACE
	16. DATE HOLE — STARTED 6-28-00 — COMPLETED 6-28-00
7. THICKNESS OF OVERBURDEN 10.0'	17. ELEVATION TOP OF HOLE SURFACE OF WATER
8. DEPTH DRILLED INTO ROCK —	18. TOTAL CORE RECOVERY FOR BORING — %
9. TOTAL DEPTH OF HOLE 27.3'	19. SIGNATURE OF INSPECTOR WEBSTER SHIPLEY [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2.0					DRILLING WAS DONE FROM A BARGE WITH TRIPOD USING A 3" ID SPLIT SPOON DRIVEN BY A 140 LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING
	4.0					
	6.0		WATER			
	8.0					
	10.0					
	12.0					
	14.0					
	16.0					
17.3						
	18.0		MUD, BLACK VERY WET VERY SOFT MILD ODOR OF DECAYING ORGANICS	55%		BLOW COUNTS 17.3-19.3 WOR, WOR, WOR, WOR
	20.0		21.3 - MUD, BLACK, LESS SOFT LESS WET	100%	J-1	19.3-21.3 WOR, WOR, WOR, WOR 21.3-23.3 WOR WOR WOR WOR
	22.0			100%		23.3-25.3 WOH WOH WOH WOH 25.3-27.3 WOR, WOR, WOH, WOH
	24.0		24.0 MUD MEDIUM TO DARK GRAY, LENSES LESS WET AND LESS SOFT.	75%		
	26.0			500%		
27.3			EOH 27.3			NO POCKET PENETROMETER READINGS TAKEN OTHER SUITE OF SAMPLES TAKEN BY EHT

PRELIMINARY INSPECTOR'S LOG CLASSIFICATION NOT FINAL

ENG FORM 1836 | PROJECT FT. TOTTEN REMEDIAL INV | HOLE NO.

Hole No. LTBSED145

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT: FT TOTTEN REMEDIAL INVESTIGATION PHASE 2
2. LOCATION (Coordinates or Station): BAYSIDE, QUEENS, NY
3. DRILLING AGENCY: CENAB
4. HOLE NO. (As shown on drawing title and file number): LTBSED145
5. NAME OF DRILLER: DAN BOWDEN
6. DIRECTION OF HOLE: [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.
7. THICKNESS OF OVERBURDEN: 10.0'
8. DEPTH DRILLED INTO ROCK: —
9. TOTAL DEPTH OF HOLE: 24.0'
10. SIZE AND TYPE OF BIT: 3.0" ID SPLIT SPOON
11. DATUM FOR ELEVATION SHOWN (TBM or MSL):
12. MANUFACTURER'S DESIGNATION OF DRILL: BARGE
13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED 0; UNDISTURBED —
14. TOTAL NUMBER CORE BOXES: —
15. ELEVATION GROUND WATER: SURFACE
16. DATE HOLE: STARTED 6-28-00; COMPLETED 6-28-00
17. ELEVATION TOP OF HOLE: SURFACE OF WATER
18. TOTAL CORE RECOVERY FOR BORING: — %
19. SIGNATURE OF INSPECTOR: WEBSTER SHIPLEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
	2.0		WATER			DRILLING WAS DONE FROM A BARGE WITH TRIPOD USING A 3" ID SPLIT SPOON DRIVEN BY A 140 LB HAMMER WITH A 30" DROP WITH CONTINUOUS SAMPLING SAMPLES TAKEN BY EHT ONLY
	4.0					
	6.0					
	8.0					
	10.0					
	12.0					
14.0	14.0					
	16.0		MUD, VERY WET, VERY SOFT BLACK, ORGANIC MATERIAL SHELL FRAGMENTS < .25" WEAK ODOR	25%		BLOW COUNTS 14.0-16.0 WOR,WOR,WOR,WOR
	18.0		16-17.5 MUD, WET, SOFT MEDIUM GRAY 17.0 - LIVE WORMS	100%		16.0-18.0 WOR WOR WOR, WOR
	20.0		17.5-20.0 LESS WET AND FIRMER MUD, MEDIUM TO DARK GRAY, TR SHELL FRAGMENTS	100%		18.0-20.0 WOH WOH WOH WOH
	22.0			100%		20.0-22.0 1, 1, WOH, 1
	24.0			100%		22.0-24.0 WOH, WOH, WOH, 1
24.0			EOH - 24.0'			NO POCKET PENETROMETER READINGS TAKEN

PRELIMINARY INSPECTOR'S LOG CLASSIFICATION

ENG FORM 1836 ... OBSOLETE

PROJECT FT TOTTEN REMEDIAL INV | HOLE NO.

Hole No. FSS-41

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT FT TOTTEN REMEDIAL INVESTIGATION PHASE 2	10. SIZE AND TYPE OF BIT 4" CORING BIT
2. LOCATION (Coordinates or Station) BAYSIDE, QUEENS, NY	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY CENAB	12. MANUFACTURER'S DESIGNATION OF DRILL
4. HOLE NO. (As shown on drawing title and file number) FSS-41	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN — DISTURBED 7 — UNDISTURBED —
5. NAME OF DRILLER DAN BOWDEN	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE [X] VERTICAL [ ] INCLINED ____ DEG. FROM VERT.	15. ELEVATION GROUND WATER NOT ENCOUNTERED
	16. DATE HOLE — STARTED 7-8-00 — COMPLETED 7-8-00
7. THICKNESS OF OVERBURDEN —	17. ELEVATION TOP OF HOLE —
8. DEPTH DRILLED INTO ROCK 7.5"	18. TOTAL CORE RECOVERY FOR BORING 100% %
9. TOTAL DEPTH OF HOLE 7.5"	19. SIGNATURE OF INSPECTOR WEBSTER SHIPLEY [signature]

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CONCRETE			DRILLED WITH 4" CONCRETE CORING BIT
	1.0		EOH - 7.5"			EAT TOOL SAMPLE AT BOTTOM OF HOLE. HOLE BECEMENTED AT COMPLETION

PRELIMINARY INSPECTOR'S LOG [illegible]

ENG FORM [illegible] PROJECT FT TOTTEN REMEDIAL INV HOLE NO.

Hole No. FSS-42

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS
1. PROJECT FT TOTTEN REMEDIAL INVESTIGATION, PHASE 2		10. SIZE AND TYPE OF BIT 4" CORE BIT	
2. LOCATION (Coordinates or Station) BAYSIDE, QUEENS, NY		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY CENAB		12. MANUFACTURER'S DESIGNATION OF DRILL CONCRETE CORING DRILL	
4. HOLE NO. (As shown on drawing title and file number) FSS-42		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED — / UNDISTURBED —
5. NAME OF DRILLER DAN BOWDEN		14. TOTAL NUMBER CORE BOXES —	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER NOT ENCOUNTERED	
7. THICKNESS OF OVERBURDEN —		16. DATE HOLE STARTED 7-5-00 / COMPLETED 7-5-00	
8. DEPTH DRILLED INTO ROCK 8"		17. ELEVATION TOP OF HOLE —	
9. TOTAL DEPTH OF HOLE 8"		18. TOTAL CORE RECOVERY FOR BORING 100%	
		19. SIGNATURE OF INSPECTOR WEBSTER SHIPLEY W/E Shipley	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CONCRETE			DRILLED WITH 4" CONCRETE CORING BIT
8"			EOH 8"			
	1.0					ENT TOOK SAMPLE AT BOTTOM OF HOLE
						HOLE RECEMENTED AT COMPLETION

PRELIMINARY INSPECTOR'S LOG [illegible]

ENG FORM 1836 [illegible] PROJECT FT TOTTEN REMEDIAL INV HOLE NO.

Hole No. FSS-43

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT FT TOTTEN REMEDIAL INVESTIGATION PHASE 2		10. SIZE AND TYPE OF BIT 4" CORING BIT.	
2. LOCATION (Coordinates or Station) BAYSIDE, QUEENS, NY		11. DATUM FOR ELEVATION SHOWN (TBM or MSL)	
3. DRILLING AGENCY CENAB		12. MANUFACTURER'S DESIGNATION OF DRILL CONCRETE CORING DRILL	
4. HOLE NO. (As shown on drawing title and file number) FSS-43		13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN	DISTURBED — / UNDISTURBED —
5. NAME OF DRILLER DAN BOWDEN		14. TOTAL NUMBER CORE BOXES —	
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.		15. ELEVATION GROUND WATER NOT ENCOUNTERED	
		16. DATE HOLE	STARTED 7-5-00 / COMPLETED 7-5-00
7. THICKNESS OF OVERBURDEN —		17. ELEVATION TOP OF HOLE —	
8. DEPTH DRILLED INTO ROCK 7"		18. TOTAL CORE RECOVERY FOR BORING 100%	
9. TOTAL DEPTH OF HOLE 7"		19. SIGNATURE OF INSPECTOR WEBSTER SHIPLEY	

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CONCRETE			DRILLED WITH 4" CONCRETE CORING BIT.
	10		EOH 7"			EHT TOOK SAMPLE AT BOTTOM OF HOLE HOLE BECEMENTED AT COMPLETION

PRELIMINARY
INSPECTOR'S LOG
[illegible]
NOT FINAL

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT FT TOTTEN REMEDIAL INV. | HOLE NO.

Hole No. FSS-44

DRILLING LOG	DIVISION NAD	INSTALLATION BALTIMORE DISTRICT	SHEET 1 OF 1 SHEETS

1. PROJECT FT TOTTEN REMEDIAL INVESTIGATION PHASE 2	10. SIZE AND TYPE OF BIT 4" CONCRETE DRILL BIT
2. LOCATION (Coordinates or Station) BAYSIDE, QUEENS, NY	11. DATUM FOR ELEVATION SHOWN (TBM or MSL)
3. DRILLING AGENCY CENAB	12. MANUFACTURER'S DESIGNATION OF DRILL CONCRETE CORING DRILL
4. HOLE NO. (As shown on drawing title and file number) FSS-44	13. TOTAL NO. OF OVER-BURDEN SAMPLES TAKEN: DISTURBED — UNDISTURBED —
5. NAME OF DRILLER DAN BOWDEN	14. TOTAL NUMBER CORE BOXES —
6. DIRECTION OF HOLE ☒ VERTICAL ☐ INCLINED _____ DEG. FROM VERT.	15. ELEVATION GROUND WATER DID NOT ENCOUNTER
7. THICKNESS OF OVERBURDEN —	16. DATE HOLE STARTED 7-8-00 COMPLETED 7-8-00
8. DEPTH DRILLED INTO ROCK 6"	17. ELEVATION TOP OF HOLE
9. TOTAL DEPTH OF HOLE 6"	18. TOTAL CORE RECOVERY FOR BORING 100%
	19. SIGNATURE OF INSPECTOR WEBSTER SHIPLEY

ELEVATION a	DEPTH b	LEGEND c	CLASSIFICATION OF MATERIALS (Description) d	% CORE RECOVERY e	BOX OR SAMPLE NO. f	REMARKS (Drilling time, water loss, depth of weathering, etc., if significant) g
			CONCRETE			DRILLED WITH 4" CONCRETE CORING BIT
	1.0					1 AIT TOOK SAMPLE AT BOTTOM OF HOLE HOLE RECEMENTED AT COMPLETION

PRELIMINARY
INSPECTOR'S LOG
CLASSIFICATION
UNTIL

ENG FORM 1836 PREVIOUS EDITIONS ARE OBSOLETE

PROJECT FT TN REMEDIAL INV. | HOLE NO.

Appendix G

Remedial Investigation Phase 2
Analytical Data and QA/QC Evaluation Results

Remedial Investigation Phase 2, Draft Report
Analytical Data and QA/QC Evaluation Results
Fort Totten DERP-FUDS INPR # C02NY0057, Queens, New York

1.0 Chemical Analysis

EA Laboratories, Sparks, MD was the primary contract laboratory to analyze the field samples for the Phase 1 investigation. Severn Trent Laboratories (STL) purchased EA Laboratories in 1999 and has operated the laboratory facility in the same location. STL was contracted to analyze most of the primary field samples and Brooks Rand Ltd., Seatle, WA was contracted to determine mercury in sea water samples by using a special analytical method for the Phase 2 investigation. USACE Chemical Materials Quality Assurace Laboratory, Omaha, NE was contracted to analyze the QA Split samples for the both Phases 1 and 2 investigations.

1.1 Methodologies

EPA Methods 8260 and 8270 of GC/MS were used to analyze volatile organic compounds (VOCs) and semi-volatile organic compounds (SVOCs) respectively. EPA Method 7471 (Cold Vapor AA Method) was a key analytical method for analysis of mercury in most of the project samples with exception of the Phase 2 sea water samples that were analyzed by the extremely sensitive EPA Method 1631. TAL or RACA metals were analyzed by EPA Method 6000 – 7000 Series. Pesticides were analyzed by EPA Method 8081A. Polycyclic aromatic hydrocarbons were analyzed by EPA Method 8310. Details of chemical methods, precision and accuracy are listed in Tables RI-G-1 and RI-G-2 below. The primary contract and QA laboratories set the method detection limits (MDLs) for the project analytes as low as possible to meet the regulatory critera and standards set forth in the NYSDEC TAGM and TOGS. Reporting limits (RLs) defined in the USACE QA Split Program and USACE Shell for Analytical Chemistry Requirements were used in the project investigations.

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Table RI-G-1 Chemical Parameters of Remedial Investigation, Phase 1, Fort Totten, Queens, NY

Analyte	**Matrix**	**Analytical Method**	**Precision (Relative Percent Difference)**	**Accuracy (% Recovered)**	**Method Detection Limits^**
VOC	Soil/ Sediment	EPA5035/8260	<40	60-140	< NYSDEC CRQLs@
SVOC	Soil/ Sediment	EPA3540/8270	<40	60-140	< NYSDEC CRQLs@
TAL.Metals	Soil/ Sediment	EPA3050/6000&7000*	<35	75-125	< NYSDEC CRQLs@
8 RCRA Metals	Sediment	EPA3050/6000&7000*	<35	75-125	< NYSDEC CRQLs@
Mercury	Sediment	EPA 7471	<50	50-150	< EPA RBC#
TOC	Soil	EPA415.1/@	<35	80-120	< NYSDEC CRQLs@
Pesticides	Soil/Wipe	EPA3540/8081A	<40	60-130	< NYSDEC CRQLs@
Mercury	Wipe	EPA 7471	<25	75-125	< NYSDEC CRQLs@
VOC	SeaW./GW	EPA5030/8260	<40	60-140	<# for SeaW/♣ for GW
SVOC	SeaW./GW	EPA3540/8270	<40	60-140	<# for SeaW/♣ for GW
TAL.Metals	SeaW./GW	EPA3050/6000&7000*	<35	75-125	<# for SeaW/♣ for GW
8 RCRA Metals	SeaWater	EPA3050/6000&7000*	<35	75-125	<# for SeaW/♣ for GW
Mercury	Tissues	EPA 7471	<50	50-150	< EPA RBC#

Notes: ^ = See text for details
* = Mercury by the Cold Vapor AA Method/GF-AA if the ICP is inadequate.
@ = New York State Department of Environmental Conservation (NYSDEC) Contract Required Quantitation Limits (CRQLs) listed in Appendices A & B of Technical Administrative Guidance Memorandum (TAGM), HWR-94-4046, Determination of Soil Cleanup Levels, revised Jan. 24, 1994.
♣= Standards/Guidance values of NYSDEC Technical & Operational Guidance Series (TOGS), Oct. 22, 1993
= EPA Region III Risk-Based Concentration Table, April 19 1996.
SeaW./GW = Sea Water/Ground Water

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Primary field samples were analyzed by Severn Trent Laboratories (STL), Sparks, MD and Brooks Rand Ltd., Seatle, WA. The QA Split samples were analyzed by USACE Chemistry and Material Quality Assurance Laboratory (CMQAL), Omaha, NE. All field and laboratory QC samples were analyzed by using U. S. Environmental Protection Agency, Test Methods for Evaluating Solid Waste: Physical/Chemical Methods, SW-846, Third Edition, including UPDATE III, July, 1998. The chemical parameters of sample analyses for this project are presented in Tables RI-G-1 and RI-G-2.

Table RI-G-2. Chemical Parameters of Remedial Investigation, Phase 2, Fort Totten, Queens, NY

Analyte	Matrix	Anal. Method	Precision (RPD)	Accuracy(%Rec)	Meth. Det. Limits^
SVOC	Soil	EPA3540/8270	See USACE Shell^	See USACE Shell^	< NYSDEC CRQLs@
Pesticides	Soil	EPA3540/8081	See USACE Shell^	See USACE Shell^	< NYSDEC CRQLs@
PCBs	Soil	EPA3540/8082	See USACE Shell^	See USACE Shell^	< NYSDEC CRQLs@
23 TAL Metals *	Soil	EPA3050/6000&7000*	See USACE Shell^	See USACE Shell^	< NYSDEC CRQLs@
Mercury	Soil	EPA7471/7471	See USACE Shell^	See USACE Shell^	< NYSDEC MCL@
VOC	GW	EPA5030/8260	See USACE Shell^	See USACE Shell^	< NYSDEC CRQLs♣
SVOC	GW	EPA3540/8270	See USACE Shell^	See USACE Shell^	< NYSDEC CRQLs♣
PAHs	GW	EPA3540/8310	See USACE Shell^	See USACE Shell^	< NYSDEC CRQLs♣
23 TAL .Metals *	GW	EPA3050/6000&7000*	See USACE Shell^	See USACE Shell^	< NYSDEC CRQLs♣
Mercury	Sediment	EPA7471/7471	See USACE Shell^	See USACE Shell^	< NYSDEC MCL@
Mercury	Sea Water	EPA1631	<35	75-125	0.2 ng/L
Mercury	Tissues	EPA7471/7471	<50	50-150	< EPA RBC#

Notes: ^ = USACE Shell for Analytical Chemistry Requirements: Interim Chemical Data Quality Management (CDQM) Policy for USACE Hazardous, Toxic and Radioactive Waste (HTRW) Projects, 23 November 1998

* = Mercury by EPA 7471 Method (Cold Vapor AA Method/GF-AA) .

@ = New York State Department of Environmental Conservation (NYSDEC) Contract Required Quantitation Limits (CRQLs) listed in Appendices A & B of Technical Administrative Guidance Memorandum (TAGM), HWR-94-4046, Determination of Soil Cleanup Levels, revised Jan. 24, 1994.

♣= Standards/Guidance values of NYSDEC Technical & Operational Guidance Series (TOGS), Oct. 22, 1993

= EPA Region III Risk-Based Concentration Table, April 19 1996.

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Table RI-G-3 Ft Totten Little Bay Sediment, Mercury - Statistical Analysis

SAMPLE ID	DEPTH	MERCURY (mg/kg) NYDEC Standard ER-L = 0.15; ER-M = 0.71	*Relative Precision Difference (RPD)* Project Chemist Criterium: <0.50
LTB-SD-130-01	0-3" BGS	0.36 (*)	Accepted
LTB-SD-130-02	3-12" BGS	0.41	Accepted
LTB-SD-130-22 (QC duplicate of 130-02)	3-12" BGS	0.26	0.201
LTB-SD-130-33 (QA duplicate of 130-02)	3-12" BGS	0.149	0.292
LTB-SD-130-03	1-2' BGS	0.25	Accepted
LTB-SD-130-04	2-3' BGS	0.29	Accepted
LTB-SD-130-42 (QC duplicate of 130-04)	2-3' BGS	0.27	0.022
LTB-SD-130-43 (QA duplicate of 130-04)	2-3' BGS	0.199	0.089
LTB-SD-130-05	3-4' BGS	0.40	Accepted
LTB-SD-130-06	4-5' BGS	0.15	Accepted
LTB-SD-130-07	5-6' BGS	0.42	Accepted
LTB-SD-130-08	6-7' BGS	0.63	Accepted
LTB-SD-130-09	7-8' BGS	0.05 (B)	Accepted
LTB-SD-130-10	8-9' BGS	0.05(U)	Accepted
LTB-SD-130-11	9-10' BGS	0.05(U)	Accepted
LTB-SD-131-01	0-3" BGS	Spilled before analysis	
LTB-SD-131-02	3-12" BGS	0.05(U)	Accepted
LTB-SD-131-03	1-2' BGS	0.05(U)	Accepted
LTB-SD-131-04	2-3' BGS	0.05(U)	Accepted
LTB-SD-131-05	3-4' BGS	0.05(U)	Accepted
LTB-SD-131-22 (QC duplicate of 131-05)	3-4' BGS	0.05(U)	0.000
LTB-SD-131-33 (QA duplicate of 131-05)	3-4' BGS	0.0055	0.000
LTB-SD-131-06	4-5' BGS	0.05(U)	Accepted
LTB-SD-131-07	5-6' BGS	0.05(U)	Accepted
LTB-SD-131-08	6-7' BGS	0.05(U)	Accepted
LTB-SD-131-09	7-8' BGS	0.05(U)	Accepted
LTB-SD-131-10	8-9' BGS	0.05(U)	Accepted
LTB-SD-131-11	9-10' BGS	0.05(U)	Accepted
LTB-SD-132-01	0-3" BGS	0.12	Accepted
LTB-SD-132-02	3-12" BGS	0.05(U)	Accepted
LTB-SD-132-03	1-2' BGS	0.05(U)	Accepted
LTB-SD-132-04	2-3' BGS	0.05(U)	Accepted
LTB-SD-132-05	3-4' BGS	0.05(U)	Accepted
LTB-SD-132-06	4-5' BGS	0.05(U)	Accepted
LTB-SD-132-22 (QC duplicate of 132-06)	4-5' BGS	0.05(U)	0.000
LTB-SD-132-33 (QA duplicate of 132-06)	4-5' BGS	0.0107	0.000

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Table RI-G-3 Ft Totten Little Bay Sediment, Mercury - Statistical Analysis

SAMPLE ID	DEPTH	MERCURY (mg/kg) NYDEC Standard ER-L = 0.15; ER-M = 0.71	*Relative Precision Difference (RPD)* Project Chemist Criterium: <0.50
LTB-SD-132-07	5-6' BGS	0.06 (B)	Accepted
LTB-SD-132-08	6-7' BGS	0.05(U)	Accepted
LTB-SD-132-09	7-8' BGS	0.05(U)	Accepted
LTB-SD-132-10	8-9' BGS	0.05(U)	Accepted
LTB-SD-132-11	9-10' BGS	0.05(U)	Accepted
LTB-SD-133-01	0-3" BGS	**1.5 (*)**	Accepted
LTB-SD-133-02	3-12" BGS	**2.8**	Accepted
LTB-SD-133-03	1-2' BGS	**2.8**	Accepted
LTB-SD-133-04	2-3' BGS	**2.4**	Accepted
LTB-SD-133-05	3-4' BGS	**2.5**	Accepted
LTB-SD-133-06	4-5' BGS	**2.6**	Accepted
LTB-SD-133-07	5-6' BGS	**2.8**	Accepted
LTB-SD-133-22 (QC duplicate of 133-07)	5-6' BGS	**2.4**	0.154
LTB-SD-133-33 (QA duplicate of 133-07)	5-6' BGS	**3.2**	0.133
LTB-SD-133-08	6-7' BGS	**2.4**	Accepted
LTB-SD-133-09	7-8' BGS	**2.9**	Accepted
LTB-SD-133-10	8-9' BGS	**2.9**	Accepted
LTB-SD-133-11	9-10' BGS	**1.5**	Accepted
LTB-SD-134-01	0-3" BGS	**0.72**	Accepted
LTB-SD-134-02	3-12" BGS	**2.6**	Accepted
LTB-SD-134-03	1-2' BGS	**2.6**	Accepted
LTB-SD-134-04	2-3' BGS	**2.4**	Accepted
LTB-SD-134-22 (QC duplicate of 134-04)	2-3' BGS	**3.0**	0.222
LTB-SD-134-33 (QA duplicate of 134-04)	2-3' BGS	**3.14**	0.267
LTB-SD-134-05	3-4' BGS	**3.0**	Accepted
LTB-SD-134-06	4-5' BGS	**3.1**	Accepted
LTB-SD-134-07	5-6' BGS	**2.8**	Accepted
LTB-SD-134-08	6-7' BGS	**2.5**	Accepted
LTB-SD-134-09	7-8' BGS	**4.1**	Accepted
LTB-SD-134-10	8-9' BGS	**2.9**	Accepted
LTB-SD-134-11	9-10' BGS	**2.5**	Accepted
LTB-SD-135-01	0-3" BGS	**1.2**	Accepted
LTB-SD-135-02	3-12" BGS	**1.6**	Accepted
LTB-SD-135-03	1-2' BGS	**1.5**	Accepted
LTB-SD-135-04	2-3' BGS	**2.4**	Accepted
LTB-SD-135-05	3-4' BGS	**2.2**	Accepted
LTB-SD-135-06	4-5' BGS	**1.7**	Accepted
LTB-SD-135-07	5-6' BGS	**1.7**	Accepted

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Table RI-G-3 Ft Totten Little Bay Sediment, Mercury - Statistical Analysis

SAMPLE ID	DEPTH	MERCURY (mg/kg) NYDEC Standard ER-L = 0.15; ER-M = 0.71	*Relative Precision Difference (RPD)* Project Chemist Criterium: <0.50
LTB-SD-135-08	6-7' BGS	**2.0**	Accepted
LTB-SD-135-22 (QC duplicate of 135-08)	6-7' BGS	**2.2**	0.095
LTB-SD-135-33 (QA duplicate of 135-08)	6-7' BGS	**2.5**	0.222
LTB-SD-135-09	7-8' BGS	**2.0**	Accepted
LTB-SD-135-10	8-9' BGS	**1.9**	Accepted
LTB-SD-135-11	9-10' BGS	**1.7**	Accepted
LTB-SD-136-01	0-3" BGS	**1.1**	Accepted
LTB-SD-136-02	3-12" BGS	**1.3**	Accepted
LTB-SD-136-03	1-2' BGS	**1.2**	Accepted
LTB-SD-136-04	2-3' BGS	**1.6**	Accepted
LTB-SD-136-05	3-4' BGS	**2.2**	Accepted
LTB-SD-136-06	4-5' BGS	**1.0**	Accepted
LTB-SD-136-07	5-6' BGS	**2.5**	Accepted
LTB-SD-136-08	6-7' BGS	**2.5**	Accepted
LTB-SD-136-09	7-8' BGS	**2.9**	Accepted
LTB-SD-136-22 (QC duplicate of 136-09)	7-8' BGS	**2.8**	0.035
LTB-SD-136-33 (QA duplicate of 136-09)	7-8' BGS	**3.01**	0.037
LTB-SD-136-10	8-9' BGS	**3.0**	Accepted
LTB-SD-136-11	9-10' BGS	**2.9**	Accepted
LTB-SD-137-01	0-3" BGS	**1.3 (N)**	Accepted
LTB-SD-137-02	3-12" BGS	**1.2 (N)**	Accepted
LTB-SD-137-03	1-2' BGS	**2.0 (N)**	Accepted
LTB-SD-137-22 (QC duplicate of 137-03)	1-2' BGS	**1.8 (N)**	0.105
LTB-SD-137-33 (QA duplicate of 137-03)	1-2' BGS	**2.33**	0.152
LTB-SD-137-04	2-3' BGS	**0.87 (N)**	Accepted
LTB-SD-137-05	3-4' BGS	**1.2 (N)**	Accepted
LTB-SD-137-06	4-5' BGS	**1.2 (N)**	Accepted
LTB-SD-137-07	5-6' BGS	**1.9 (N)**	Accepted
LTB-SD-137-08	6-7' BGS	**1.6 (N)**	Accepted
LTB-SD-137-09	7-8' BGS	**2.6 (N)**	Accepted
LTB-SD-137-10	8-9' BGS	**3.1 (N)**	Accepted
LTB-SD-137-11	9-10' BGS	0.060 (BN)	Accepted
LTB-SD-138-01	0-3" BGS	**0.97 (N)**	Accepted
LTB-SD-138-02	3-12" BGS	**1.0 (N)**	Accepted
LTB-SD-138-03	1-2' BGS	**1.0 (N)**	Accepted
LTB-SD-138-04	2-3' BGS	**1.4 (N)**	Accepted
LTB-SD-138-05	3-4' BGS	**1.7 (N)**	Accepted
LTB-SD-138-06	4-5' BGS	**1.4 (N)**	Accepted

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Table RI-G-3 Ft Totten Little Bay Sediment, Mercury - Statistical Analysis

SAMPLE ID	DEPTH	MERCURY (mg/kg) NYDEC Standard ER-L = 0.15; ER-M = 0.71	*Relative Precision Difference (RPD)* Project Chemist Criterium: <0.50
LTB-SD-138-07	5-6' BGS	**2.0 (N)**	Accepted
LTB-SD-138-08	6-7' BGS	**2.3 (N)**	Accepted
LTB-SD-138-09	7-8' BGS	**2.1 (N)**	Accepted
LTB-SD-138-10	8-9' BGS	**1.9 (N)**	Accepted
LTB-SD-138-22 (QC duplicate of 138-10)	8-9' BGS	**1.7 (N)**	0.111
LTB-SD-138-33 (QA duplicate of 138-10)	8-9' BGS	**1.91**	0.005
LTB-SD-138-11	9-10' BGS	**1.7 (N)**	Accepted
LTB-SD-139-01	0-3" BGS	**1.0 (N)**	Accepted
LTB-SD-139-02	3-12" BGS	**1.7 (N)**	Accepted
LTB-SD-139-03	1-2' BGS	**0.76 (N)**	Accepted
LTB-SD-139-04	2-3' BGS	0.66 (N)	Accepted
LTB-SD-139-05	3-4' BGS	**1.6 (N)**	Accepted
LTB-SD-139-22 (QC duplicate of 139-05)	3-4' BGS	**1.0 (N)**	0.462
LTB-SD-139-33 (QA duplicate of 139-05)	3-4' BGS	**1.84**	0.140
LTB-SD-139-06	4-5' BGS	**2.0 (N)**	Accepted
LTB-SD-139-07	5-6' BGS	**1.9 (N)**	Accepted
LTB-SD-139-08	6-7' BGS	**2.2 (N)**	Accepted
LTB-SD-139-09	7-8' BGS	**1.8 (N)**	Accepted
LTB-SD-139-10	8-9' BGS	0.05(U)	Accepted
LTB-SD-139-11	9-10' BGS	0.05(U)	Accepted
LTB-SD-140-01	0-3" BGS	**1.0 (N)**	Accepted
LTB-SD-140-02	3-12" BGS	**1.7 (N)**	Accepted
LTB-SD-140-03	1-2' BGS	**1.3 (N)**	Accepted
LTB-SD-140-04	2-3' BGS	0.67 (N)	Accepted
LTB-SD-140-05	3-4' BGS	**2.6 (N)**	Accepted
LTB-SD-140-06	4-5' BGS	0.64 (N)	Accepted
LTB-SD-140-22 (QC duplicate of 140-06)	4-5' BGS	**0.76 (N)**	0.171
LTB-SD-140-33 (QA duplicate of 140-06)	4-5' BGS	**0.777**	0.193
LTB-SD-140-07	5-6' BGS	**1.8 (N)**	Accepted
LTB-SD-140-08	6-7' BGS	**0.73 (N)**	Accepted
LTB-SD-140-09	7-8' BGS	**0.71 (N)**	Accepted
LTB-SD-140-10	8-9' BGS	0.05(U)	Accepted
LTB-SD-140-11	9-10' BGS	0.05(U)	Accepted
LTB-SD-141-01	0-3" BGS	**1.1**	Accepted
LTB-SD-141-02	3-12" BGS	**1.7**	Accepted
LTB-SD-141-03	1-2' BGS	**1.2**	Accepted
LTB-SD-141-04	2-3' BGS	**1.7**	Accepted
LTB-SD-141-05	3-4' BGS	**1.8**	Accepted

APPENDIX G:

Table RI-G-3 Ft Totten Little Bay Sediment, Mercury - Statistical Analysis

SAMPLE ID	DEPTH	MERCURY (mg/kg) NYDEC Standard ER-L = 0.15; ER-M = 0.71	*Relative Precision Difference (RPD)* Project Chemist Criterium: <0.50
LTB-SD-141-06	4-5' BGS	**1.5**	Accepted
LTB-SD-141-07	5-6' BGS	**2.4**	Accepted
LTB-SD-141-08	6-7' BGS	**2.2**	Accepted
LTB-SD-141-09	7-8' BGS	**1.9**	Accepted
LTB-SD-141-10	8-9' BGS	**1.9**	Accepted
LTB-SD-141-11	9-10' BGS	0.2	Rejected
LTB-SD-141-22 (QC duplicate of 141-11)	9-10' BGS	0.52	0.889
LTB-SD-141-33 (QA duplicate of 141-11)	9-10' BGS	0.271	0.301
LTB-SD-142-01	0-3" BGS	**1.1**	Accepted
LTB-SD-142-02	3-12" BGS	**1.8**	Accepted
LTB-SD-142-03	1-2' BGS	**0.97**	Accepted
LTB-SD-142-04	2-3' BGS	**1.2**	Accepted
LTB-SD-142-05	3-4' BGS	**1.6**	Accepted
LTB-SD-142-06	4-5' BGS	**1.9**	Accepted
LTB-SD-142-07	5-6' BGS	**2.5**	Accepted
LTB-SD-142-22 (QC duplicate of 142-07)	5-6' BGS	**2.4**	0.041
LTB-SD-142-33 (QA duplicate of 142-07)	5-6' BGS	**2.92**	0.155
LTB-SD-142-08	6-7' BGS	**2.1**	Accepted
LTB-SD-142-09	7-8' BGS	0.44	Accepted
LTB-SD-142-10	8-9' BGS	**1.2**	Accepted
LTB-SD-142-11	9-10' BGS	0.050 (B)	Accepted
LTB-SD-143-01	0-3" BGS	**0.98**	Accepted
LTB-SD-143-02	3-12" BGS	**0.81 (N)**	Accepted
LTB-SD-143-03	1-2' BGS	**1.0 (N)**	Accepted
LTB-SD-143-04	2-3' BGS	**1.4 (N)**	Accepted
LTB-SD-143-05	3-4' BGS	**0.99 (N)**	Accepted
LTB-SD-143-06	4-5' BGS	**1.4 (N)**	Accepted
LTB-SD-143-07	5-6' BGS	**2.1 (N)**	Accepted
LTB-SD-143-08	6-7' BGS	**2.0 (N)**	Accepted
LTB-SD-143-22 (QC duplicate of 143-08)	6-7' BGS	**2.0 (N)**	0.000
LTB-SD-143-33 (QA duplicate of 143-08)	6-7' BGS	**2.49**	0.218
LTB-SD-143-09	7-8' BGS	**1.2 (N)**	Accepted
LTB-SD-143-10	8-9' BGS	**2.3 (N)**	Accepted
LTB-SD-143-11	9-10' BGS	**2.5 (N)**	Accepted
LTB-SD-144-01	0-3" BGS	**0.92 (N)**	Accepted
LTB-SD-144-02	3-12" BGS	**0.92 (N)**	Accepted
LTB-SD-144-03	1-2' BGS	**2.9 (N)**	Rejected
LTB-SD-144-22 (QC duplicate of 144-03)	1-2' BGS	**1.2 (N)**	0.829

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Table RI-G-3 Ft Totten Little Bay Sediment, Mercury - Statistical Analysis

SAMPLE ID	DEPTH	MERCURY (mg/kg) NYDEC Standard ER-L = 0.15; ER-M = 0.71	*Relative Precision Difference (RPD)* Project Chemist Criterium: <0.50
LTB-SD-144-33 (QA duplicate of 144-03)	1-2' BGS	**1.42**	0.684
LTB-SD-144-04	2-3' BGS	**0.71 (N)**	Accepted
LTB-SD-144-05	3-4' BGS	**2.1 (N)**	Accepted
LTB-SD-144-06	4-5' BGS	0.53 (N)	Accepted
LTB-SD-144-07	5-6' BGS	**2.1 (N)**	Accepted
LTB-SD-144-08	6-7' BGS	**1.1 (N)**	Accepted
LTB-SD-144-09	7-8' BGS	**1.3 (N)**	Accepted
LTB-SD-144-10	8-9' BGS	0.36 (N)	Accepted
LTB-SD-144-11	9-10' BGS	0.05(U)	Accepted
LTB-SD-145-01	0-3" BGS	0.080 (B)	Accepted
LTB-SD-145-02	3-12" BGS	**2.2**	Accepted
LTB-SD-145-03	1-2' BGS	0.05(U)	Accepted
LTB-SD-145-04	2-3' BGS	0.05(U)	Accepted
LTB-SD-145-22 (QC duplicate of 145-04)	2-3' BGS	0.05(U)	0.000
LTB-SD-145-33 (QA duplicate of 145-04)	2-3' BGS	0.0293	0.000
LTB-SD-145-05	3-4' BGS	**1.5**	Accepted
LTB-SD-145-06	4-5' BGS	**0.92**	Accepted
LTB-SD-145-07	5-6' BGS	0.05(U)	Accepted
LTB-SD-145-08	6-7' BGS	0.05(U)	Accepted
LTB-SD-145-09	7-8' BGS	0.05(U)	Accepted
LTB-SD-145-10	8-9' BGS	0.05(U)	Accepted
LTB-SD-145-11	9-10' BGS	0.05(U)	Accepted

NYDEC Sediment Standards for Mercury: Effects Range-Low: 0.15 mg/kg
Effects Range-Medium: 0.71 mg/kg

APPENDIX G:

1.2 Chemical Data Quality Assurance

Quality assurance and quality control for the chemical analyses were conducted according to the U. S. EPA SW-846 Methods and U. S. Army Corps of Engineers ER 110-1-263 and EM 200-1-3.

In the period of the project investigations, EA and STL were certified by the State of New York and USACE HTRW Center of Expertise in Omaha, NE. USACE QA Split Program was used to ensure the qualty of chemical data obtained by the primary contract laboratories. Approximate 10 to 20 percents of the project field samples were used as the QA Split samples and sent to USACE QA Lab in Omaha, NE for analysis and comparison. The QA Lab provided Chemical Quality Assurance Report (CQAR) with data comparison tables. Two CQARs for the both Phases of this investigation are presented in Appendices G and H.

1.3 Reliability of Lab Data and Evaluation of Chemical Data with Qualifiers/Flags

The CQARs indicate that the quality of the project chemical data is fairly good and generally acceptable for comparison with the regulatory criteria/standards and purpose of the environmental assessments. Most of the detected chemicals obtained by the EA and STL are acceptable and usable in the environmental assessments. The detected chemicals with the lab data qualifiers “N”, “E” and “P” in this project need further examination, explanations and chemist professional judgments.

The qualifier “N” is used in the inorganic data if the spiked sample recovery is not within control limit. In case of mercury in sediments and surface soils, EA and STL indicate in their reports that the MS/MSD recovery for mercury was generally 3 to 5 % below the QC limit of 75 % and that a potential for negative bias to the sample data for this element. The post-digestion spike (82 or 83 %) was within QC Limits. The low recovery for mercury was caused by the matrix effects known in the EPA SW-846 Methods. It is logic to analyze this problem by using a statistical analysis in relative precision difference (RPD) defined in the two project QAPPs. In the Phase 1 QAPP (January 1998), the RPD for mercury in sediments was set by Project Chemist (see the above section) as <50 % due to the modified (doubled) sample size used the EPA Method 7471 in order to meet the low detection limit required by the NYDEC TAGM. The interim USACE Shell program was announced in the spring of 1998. Thus, in the Phase 2 QAPP (used since May1998), the general and strict RPD set in the USACE Shell program (<10 %) was used overdemandingly for mercury (see the above section also). The Project Chemist performed the RPD statistical analysis on the mercury chemical data of the sediment primary and QC/QA duplicate sampples. Results of the RPD statistical analysis are presented in Table RI-G-3. If the USACE Shell criterium of <20 % RPD for mercury is applied to the project sediment data, it will reject half of the good data that are without qualifier/flag and the uncertain data with the “N” qualifier/flag. If the Project Chemist criterium of <50 % RPD for mercury is applied to the project sediment data, it will accept the good data that are without qualifier/flag and reject some of the uncertain data with the “N” qualifier/flag. The Project Chemist criterium of <50 % RPD

for mercury for the project sediment data is a chemist professional judgement and a scientifically sound basis and should be applied in this project.

The qualifiers “D”, and “P” are applied in the pesticides, polycyclic aromatic hydrocarbons (PAH) and other organic data: “D” is used for results of the diluted samples and “P” is used if a reported value from a GC analysis has 25 % or more difference in detected concentractions between the two GC columns. The RPD statistical analysis is performed on the chemical data of semi-volatiles, pesticides and polycyclic aromatic hydrocarbons. Results of the organics RPD statistcal analysis are shown in Tables RI-G-4, RI-G-5 and RI-G-6. The results in Table RI-G-4 indicate that the chemical data of semi-volatiles should be accepted and used in the environmental assessments. The results in Tables RI-G-5 and RI-G-6 indicate that the chemical data of pesticides and polycyclic aromatic hydrocarbons should be rejected and should not be used in the environmental assessments.

APPENDIX G:

Table RI-G-4 Ft Totten Surface Soil, Semivolatiles - Statistical Analysis

SAMPLE ID	Chemical	NYSDEC TAGM (mg/kg)	Conc.	RPD (mg/kg)
FSS-SS-12-01	BENZO[A]PYRENE	0.061 or MDL	**6.300 (D)**	Accepted
FSS-SS-12-22(QC)	BENZO[A]PYRENE	0.061 or MDL	**7.200 (D)**	0.133
FSS-SS-12-33(QA)	BENZO[A]PYRENE	0.061 or MDL	**9.000**	0.353
FSS-SS-12-01	BENZO[B]FLUORANTHENE	1.1	**8.800 (D)**	Accepted
FSS-SS-12-22(QC)	BENZO[B]FLUORANTHENE	1.1	**9.900 (D)**	0.118
FSS-SS-12-33(QA)	BENZO[B]FLUORANTHENE	1.1	**16.000**	0.581
FSS-SS-12-01	CHRYSENE	0.4	**4.600 (D)**	Accepted
FSS-SS-12-22(QC)	CHRYSENE	0.4	**4.900 (D)**	0.063
FSS-SS-12-33(QA)	CHRYSENE	0.4	**7.170**	0.437
FSS-SS-12-01	INDENO[1,2,3-CD]PYRENE	3.2	**3.500 (D)**	Accepted
FSS-SS-12-22(QC)	INDENO[1,2,3-CD]PYRENE	3.2	**4.100 (D)**	0.158
FSS-SS-12-33(QA)	INDENO[1,2,3-CD]PYRENE	3.2	**7.340**	0.708

Table RI-G-5 Ft Totten Building 624 Surface Soil, Pesticides - Statistical Analysis

SAMPLE ID	Chemical	NYSDEC TAGM (mg/kg)	Conc.	RPD (mg/kg)
624-SS-54-01	4,4'-DDT	2.1	0.21	Rejected
624-SS-54-33 (QA)	4,4'-DDT	2.1	0.7	1.077

APPENDIX G:

Table RI-G-6 Ft Totten Monitoring Wells, PAHs - Statistical Analysis

SAMPLE ID	Chemical	NYSDEC TOGS (ug/L)	Conc. (ug/L)	RPD
MW4-GW-01-01	Benz[a]anthracene	0.002	4.4(D)	Rejected
MW4-GW-01-22(QC)	Benz[a]anthracene	0.002	0.71	1.444
MW4-GW-01-33(QA)	Benz[a]anthracene	0.002	0.14(U)	1.868
MW4-GW-01-01	Benzo[a]pyrene	None	4.7(D)	Rejected
MW4-GW-01-22(QC)	Benzo[a]pyrene	None	0.77	1.437
MW4-GW-01-33(QA)	Benzo[a]pyrene	None	0.14(U)	1.877
MW4-GW-01-01	Chrysene	0.002	5.4(D)	Rejected
MW4-GW-01-22(QC)	Chrysene	0.002	0.83	1.467
MW4-GW-01-33(QA)	Chrysene	0.002	0.14(U)	1.893
MW4-GW-01-01	Benzo[b]fluoranthene	0.002	5.9(P)	Rejected
MW4-GW-01-22(QC)	Benzo[b]fluoranthene	0.002	1.1	1.371
MW4-GW-01-33(QA)	Benzo[b]fluoranthene	0.002	0.19(U)	1.875
MW4-GW-01-01	Acenaphthene	20 (Guidance value)	11(P)	Rejected
MW4-GW-01-22(QC)	Acenaphthene	20 (Guidance value)	1.6(P)	1.492
MW4-GW-01-33(QA)	Acenaphthene	20 (Guidance value)	0.95(U)	1.682
MW4-GW-01-01	Indeno[1,2,3-cd]pyrene	0.002	3.7	Rejected
MW4-GW-01-22(QC)	Indeno[1,2,3-cd]pyrene	0.002	0.62(P)	1.426
MW4-GW-01-33(QA)	Indeno[1,2,3-cd]pyrene	0.002	0.14(U)	1.854
MW4-GW-01-01	Benzo[k]fluoranthene	0.002	2.6	Rejected
MW4-GW-01-22(QC)	Benzo[k]fluoranthene	0.002	0.47	1.388
MW4-GW-01-33(QA)	Benzo[k]fluoranthene	0.002	0.14(U)	1.796

Table 1: Statistical Analysis on Analytical Results of VOCs in the Samples of Monitoring Well 3, Fort Totten, NY (2002 Spring GW)

	SITE	MWG-03	MWG-03		MWG-03	
	SAMPLE ID	MW3-GW-0402-01	MW3-GW-0402-22		MW3-GW-0402-33	
	DATE	04/10/2002	04/10/2002		04/10/2002	
	RESULT TYPE	Primary	Duplicate	% RPD between	QA Sample	% RPD between
CONSTITUENT	Unit	Concentration	Concentration	Primary & Duplicate	Concentration	Primary & QA Sample
1,1,1-Trichloroethane	(ug/l)	<0.1 U	<0.1 U		<0.14 U	
1,1,2,2-Tetrachloroethane	(ug/l)	<0.1 U	<0.1 U		<0.127 U	
1,1,2-Trichloroethane	(ug/l)	<0.1 U	<0.1 U		<0.092 U	
1,1-Dichloroethane	(ug/l)	<0.1 U	<0.1 U		<0.102 U	
1,1-Dichloroethylene	(ug/l)	<0.2 U	<0.2 U		<0.105 U	
1,2-Dichloroethane	(ug/l)	<0.1 U	<0.1 U		<0.067 U	
1,2-Dichloropropane	(ug/l)	<0.2 U	<0.2 U		<0.078 U	
2-Hexanone	(ug/l)	<0.29 U	<0.29 U		<0.718 U	
4-Methyl-2-pentanone	(ug/l)	<0.39 U	<0.39 U		<0.4 U	
Acetone	(ug/l)	<1.39 U	<1.39 U		<0.995 U	
Benzene	(ug/l)	<0.1 U	<0.1 U		<0.092 U	
Bromodichloromethane	(ug/l)	<0.1 U	<0.1 U		<0.076 U	
Bromoform	(ug/l)	<0.2 U	<0.2 U		<0.156 U	
Bromomethane	(ug/l)	<0.3 U	<0.3 U		<0.078 U	
Carbon disulfide	(ug/l)	<0.13 U	<0.13 U		<0.654 U	
Carbon tetrachloride	(ug/l)	<0.2 U	<0.2 U		<0.112 U	
Chlorobenzene	(ug/l)	<0.1 U	<0.1 U		<0.063 U	
Chloroethane	(ug/l)	<0.2 U	<0.2 U		<0.109 U	
Chloroform	(ug/l)	<0.1 U	<0.1 U		<0.084 U	
Methyl chloride	(ug/l)	0.9	2.3	87.5	<0.089 U	
cis-1,3-Dichloropropene	(ug/l)	<0.1 U	<0.1 U		<0.097 U	
Dibromochloromethane	(ug/l)	<0.2 U	<0.2 U		<0.09 U	
Ethylbenzene	(ug/l)	<0.09 U	<0.09 U		<0.089 U	
Methylene chloride	(ug/l)	<0.1 U	<0.1 U		<0.056 U	
Styrene	(ug/l)	<0.09 U	<0.09 U		<0.11 U	
Tetrachloroethene	(ug/l)	<0.3 U	<0.3 U		<0.127 U	
Toluene	(ug/l)	<0.1 U	<0.1 U		<0.092 U	
trans-1,3-Dichloropropene	(ug/l)	<0.1 U	<0.1 U		<0.07 U	
Trichloroethene	(ug/l)	<0.2 U	<0.2 U		<0.2 U	
Vinyl chloride	(ug/l)	<0.1 U	<0.1 U		<0.181 U	
Xylene (total)	(ug/l)	<0.2 U	<0.2 U		<0.29 U	
m/p-Xylene	(ug/l)	<0.18 U	<0.18 U		<0.209 U	
o-Xylene	(ug/l)	<0.08 U	<0.08 U		<0.084 U	
Methyl tert-butyl ether	(ug/l)	0.1 J	0.2 J		<0.1 U	
n-Butylbenzene	(ug/l)	0.07 J	<0.07 U		<0.117 U	
Reported at the MDL level	The following qualifiers exist: U, J		--- = Not analyzed			

Table 2: Statistical Analysis on Analytical Results of SVOCs in the Samples of Monitoring Well 3, Fort Totten, NY (2002 Spring GW)

	SITE	MWG-03	MWG-03		MWG-03	
	SAMPLE ID	MW3-GW-0402-01	MW3-GW-0402-22		MW3-GW-0402-33	
	DATE	04/10/2002	04/10/2002		04/10/2002	
	RESULT TYPE	Primary	Duplicate	% RPD between	QA Sample	% RPD between
CONSTITUENT	Unit	Concentration	Concentration	Primary & Duplicate	Concentration	Primary & QA Sample
1,2,4-Trichlorobenzene	(ug/l)	<0.1 U	<0.1 U		<0.079 U	
1,2-Dichlorobenzene	(ug/l)	<0.1 U	<0.1 U		<0.064 U	
1,3-Dichlorobenzene	(ug/l)	<0.08 U	<0.08 U		<0.079 U	
1,4-Dichlorobenzene	(ug/l)	<0.2 U	<0.2 U		<0.065 U	
2,4,6-Trichlorophenol	(ug/l)	<0.3 U	<0.3 U		---	
2,4-Dichlorophenol	(ug/l)	<0.3 U	<0.3 U		<0.178 U	
2,4-Dinitrophenol	(ug/l)	<3 U	<3 U		<0.357 U	
2,4-Dinitrotoluene	(ug/l)	<0.3 U	<0.3 U		<0.05 U	
2,6-Dinitrotoluene	(ug/l)	<0.3 U	<0.3 U		<0.038	
2-Methylnaphthalene	(ug/l)	<0.03 U	<0.03 U		<0.02 U	
2-Methylphenol	(ug/l)	<0.3 U	<0.3 U		---	
Di(2-ethylhexyl)phthalate	(ug/l)	14	8	54.5	17	19.4
Butylbenzylphthalate	(ug/l)	0.1 J	0.1 J	0.0	<0.023 U	
Chrysene	(ug/l)	<0.02 U	<0.02 U		<0.01 U	
Di-n-butyl phthalate	(ug/l)	0.6	0.6	0.0	0.4	40.0
Dibenzofuran	(ug/l)	<0.02 U	<0.02 U		---	
Diethyl phthalate	(ug/l)	2	2	0.0	1.3	42.4
Dimethyl phthalate	(ug/l)	0.1 J	0.1 J	0.0	<0.02 U	
Hexachlorobenzene	(ug/l)	<0.02 U	<0.02 U		<0.02 U	
Hexachlorobutadiene	(ug/l)	<0.24 U	<0.24 U		<0.02 U	
Hexachlorocyclopentadiene	(ug/l)	<0.3 U	<0.3 U		<0.048 U	
Hexachloroethane	(ug/l)	<0.12 U	<0.12 U		---	
Nitrobenzene	(ug/l)	<2.56 U	<2.56 U		<3.7 U	
Bis(2-ethylhexyl) adipate	(ug/l)	0.1 J	0.2 J	66.7	0.12 J	18.2
Reported at the MDL level	The following qualifiers exist: U, J		--- = Not analyzed			

Table 3: Statistical Analysis on Analytical Results of PAHs in the Samples of Monitoring Well 3, Fort Totten, NY (2002 Spring GW)

	SITE	MWG-03	MWG-03		MWG-03	
	SAMPLE ID	MW3-GW-0402-01	MW3-GW-0402-22		MW3-GW-0402-33	
	DATE	04/10/2002	04/10/2002		04/10/2002	
	RESULT TYPE	Primary	Duplicate	% RPD between	QA Sample	% RPD between
CONSTITUENT	Unit	Concentration	Concentration	Primary & Duplicate	Concentration	Primary & QA Sample
Acenaphthene	(ug/l)	<0.02 U	<0.02 U		<0.017 U	
Acenaphthylene	(ug/l)	<0.03 U	<0.03 U		<0.017 U	
Anthracene	(ug/l)	<0.02 U	<0.02 U		<0.017 U	
Benzo(a)anthracene	(ug/l)	<0.03 U	<0.03 U		<0.018 U	
Benzo(a)pyrene	(ug/l)	<0.02 U	<0.02 U		<0.008 U	
Benzo(b)fluoranthene	(ug/l)	<0.02 U	<0.02 U		<0.006 U	
Benzo(ghi)perylene	(ug/l)	<0.02 U	<0.02 U		<0.02 U	
Benzo(k)fluoranthene	(ug/l)	<0.02 U	<0.02 U		<0.037 U	
Chrysene	(ug/l)	<0.02 U	<0.02 U		<0.01 U	
Dibenzo(a,h)anthracene	(ug/l)	<0.02 U	<0.02 U		<0.016 U	
Fluoranthene	(ug/l)	<0.02 U	<0.02 U		<0.016 U	
Fluorene	(ug/l)	<0.02 U	<0.02 U		<0.022 U	
Indeno(1,2,3-cd)pyrene	(ug/l)	<0.02 U	<0.02 U		<0.041 U	
2-Methylnaphthalene	(ug/l)	<0.03 U	<0.03 U		<0.017 U	
Naphthalene	(ug/l)	<0.14 U	<0.14 U		<0.018 U	
Phenanthrene	(ug/l)	<0.02 U	<0.02 U		<0.021 U	
Pyrene	(ug/l)	<0.02 U	<0.02 U		<0.016 U	
Reported at the MDL level	The following qualifier exists: U --- = Not analyzed					

Table 4: Statistical Analysis on Analytical Results of Metals in the Samples of Monitoring Well 3, Fort Totten,. NY (2002 Spring GW)

	SITE	MWG-03	MWG-03		MWG-03	
	SAMPLE ID	MW3-GW-0402-01	MW3-GW-0402-22		MW3-GW-0402-33	
	DATE	04/10/2002	04/10/2002		04/10/2002	
	RESULT TYPE	Primary	Duplicate	% RPD between	QA Sample	% RPD between
CONSTITUENT	Unit	Concentration	Concentration	Primary & Duplicate	Concentration	Primary & QA Sample
Aluminum (Total)	(mg/l)	0.1	0.07	35.3	0.17	51.9
Aluminum (Dissolved)	(mg/l)	<0.01 U	<0.01 U		0.007	
Antimony (Total)	(mg/l)	<0.0002 U	<0.0002 U		0.0012	
Antimony (Dissolved)	(mg/l)	<0.00009 U	<0.00009 U		<0.00023 U	
Arsenic (Total)	(mg/l)	<0.001 U	<0.001 U		0.0025	
Arsenic (Dissolved)	(mg/l)	<0.002 U	<0.002 U		<0.00053 U	
Barium (Total)	(mg/l)	0.074	0.072	2.7	0.072	2.7
Barium (Dissolved)	(mg/l)	0.07	0.07	0.0	0.068	2.9
Beryllium (Total)	(mg/l)	<0.00004 U	<0.00004 U		<0.000013 U	
Beryllium (Dissolved)	(mg/l)	<0.0001 U	<0.0001 U		<0.000013 U	
Cadmium (Total)	(mg/l)	<0.0002 U	<0.0002 U		<0.00021 U	
Cadmium (Dissolved)	(mg/l)	<0.0003 U	<0.0003 U		<0.00021 U	
Calcium (Total)	(mg/l)	60.5	61	0.8	75	21.4
Calcium (Dissolved)	(mg/l)	63	63.1	0.2	54	15.4
Chromium (Total)	(mg/l)	0.014	0.012	15.4	0.013	7.4
Chromium (Dissolved)	(mg/l)	0.009	0.009	0.0	0.011	20.0
Cobalt (Total)	(mg/l)	<0.0004 U	<0.0004 U		<0.0014 U	
Cobalt (Dissolved)	(mg/l)	<0.001 U	<0.001 U		<0.0014 U	
Copper (Total)	(mg/l)	<0.0006 U	<0.0006 U		0.023	
Copper (Dissolved)	(mg/l)	<0.004 U	<0.004 U		<0.00019 U	
Iron (Total)	(mg/l)	0.88	0.24	114.3	0.3	98.3
Iron (Dissolved)	(mg/l)	<0.01 U	<0.01 U		<0.01 U	
Lead (Total)	(mg/l)	<0.0009 U	<0.0009 U		<0.00012 U	
Lead (Dissolved)	(mg/l)	<0.001 U	<0.001 U		<0.00012 U	
Magnesium (Total)	(mg/l)	30.2	29.8	1.3	31	2.6
Magnesium (Dissolved)	(mg/l)	30.3	29.9	1.3	33	8.5
Manganese (Total)	(mg/l)	0.008	0.004	66.7	0.066	156.8
Manganese (Dissolved)	(mg/l)	<0.0003 U	<0.0003 U		<0.0001 U	
Mercury (Total)	(mg/l)	<0.0001 U	<0.0001 U		<0.000025 U	
Mercury (Dissolved)	(mg/l)	<0.0001 U	<0.0001 U		<0.000025 U	
Nickel (Total)	(mg/l)	<0.0004 U	<0.0004 U		0.0078	
Nickel (Dissolved)	(mg/l)	<0.0008 U	<0.0008 U		0.0076	
Potassium (Total)	(mg/l)	2.13	2	6.3	2.9	30.6
Potassium (Dissolved)	(mg/l)	2.18	2.16	0.9	2.2	0.9
Selenium (Total)	(mg/l)	<0.001 U	<0.001 U		<0.0004 U	
Selenium (Dissolved)	(mg/l)	<0.004 U	<0.004 U		<0.0004 U	
Silver (Total)	(mg/l)	<0.0007 U	<0.0007 U		<0.0007 U	
Silver (Dissolved)	(mg/l)	<0.0007 U	<0.0007 U		<0.0007 U	
Sodium (Total)	(mg/l)	7.7	7.35	4.7	7.9	2.6
Sodium (Dissolved)	(mg/l)	7.89	7.65	3.1	7.5	5.1
Thallium (Total)	(mg/l)	<0.00001 U	<0.00001 U		<0.00002 U	
Thallium (Dissolved)	(mg/l)	<0.00002 U	<0.00002 U		<0.00002 U	
Vanadium (Total)	(mg/l)	<0.00004 U	<0.00004 U		<0.00024 U	
Vanadium (Dissolved)	(mg/l)	<0.00001 U	<0.00001 U		<0.00024 U	

Table 4: Statistical Analysis on Analytical Results of Metals in the Samples of Monitoring Well 3, Fort Totten,. NY (2002 Spring GW)

	SITE	MWG-03	MWG-03		MWG-03	
	SAMPLE ID	MW3-GW-0402-01	MW3-GW-0402-22		MW3-GW-0402-33	
	DATE	04/10/2002	04/10/2002		04/10/2002	
	RESULT TYPE	Primary	Duplicate	% RPD between	QA Sample	% RPD between
CONSTITUENT	Unit	Concentration	Concentration	Primary & Duplicate	Concentration	Primary & QA Sample
Zinc (Total)	(mg/l)	<0.0007 U	<0.0007 U		0.0088	
Zinc (Dissolved)	(mg/l)	<0.004 U	<0.004 U		<0.00072 U	
Reported at the MDL level	The following qualifier exists: U --- = Not analyzed					

Appendix H

Remedial Investigation Phase 2
Analytical Data, Form I

Received
February 20, 2001

Mr. Scott Chang
CENAB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Re: ARL (70047.67)

Dear Mr. Chang:

Enclosed is our report on the analysis of 96 samples collected for the St. Georges Bridge project on 28, 29, and 30 June 2000. The electronic data deliverables (EDD) will follow. The invoice is included.

Please contact me if you have any questions or require further information and refer to report 000814. Unless other arrangements are made, we reserve the right to dispose of your samples sixty (60) days from the date of this letter. We will retain the raw data for seven years from this date.

Sincerely,

Natasha K. Sullivan
Laboratory Project Manager

NKS/gsp
enclosure

LABORATORY DATA REPORT

Prepared for:

CENAB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Prepared by:

Severn Trent Laboratories
19 Loveton Circle
Sparks, MD 21152

Report 000814

February 2001

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000814**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **20 February 2001**

This report contains the results of the analysis of 96 soil samples collected on 28, 29, and 30 June 2000 in support of the referenced project.

SAMPLE RECEIPT

The samples arrived with custody seals absent by Federal Express at Severn Trent Laboratories on 1 July 2000. Upon receipt, the samples were inspected and compared with the chain-of-custody records. The samples were then logged into the laboratory computer system with an assigned laboratory accession number and released for analysis.

Client Sample Designation	STL - Baltimore Number
LTB-SD-135-01	0007449
LTB-SD-135-02	0007450
LTB-SD-135-03	0007451
LTB-SD-135-04	0007452
LTB-SD-135-05	0007453
LTB-SD-135-06	0007454
LTB-SD-135-07	0007455
LTB-SD-135-08	0007456
LTB-SD-135-22	0007457
LTB-SD-135-09	0007458
LTB-SD-135-10	0007459
LTB-SD-135-11	0007460
LTB-SD-136-01	0007461
LTB-SD-136-02	0007462
LTB-SD-136-03	0007463
LTB-SD-136-07	0007464
LTB-SD-136-05	0007465
LTB-SD-136-06	0007466
LTB-SD-136-07	0007467
LTB-SD-136-08	0007468
LTB-SD-136-09	0007469
LTB-SD-136-22	0007470
LTB-SD-136-10	0007471
LTB-SD-136-11	0007472
LTB-SD-138-01	0007473
LTB-SD-138-02	0007474
LTB-SD-138-03	0007475
LTB-SD-138-04	0007476

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000814**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **20 February 2001**

LTB-SD-138-05	0007477
LTB-SD-138-06	0007478
LTB-SD-138-07	0007479
LTB-SD-138-08	0007480
LTB-SD-138-09	0007481
LTB-SD-138-10	0007482
LTB-SD-138-22	0007483
LTB-SD-138-11	0007484
LTB-SD-139-01	0007485
LTB-SD-139-02	0007486
LTB-SD-139-03	0007487
LTB-SD-139-04	0007488
LTB-SD-139-05	0007489
LTB-SD-139-22	0007490
LTB-SD-139-06	0007491
LTB-SD-139-07	0007492
LTB-SD-139-08	0007493
LTB-SD-139-09	0007494
LTB-SD-139-10	0007495
LTB-SD-139-11	0007496
LTB-SD-144-01	0007497
LTB-SD-144-02	0007498
LTB-SD-144-03	0007499
LTB-SD-144-22	0007500
LTB-SD-144-04	0007501
LTB-SD-144-05	0007502
LTB-SD-144-06	0007503
LTB-SD-144-07	0007504
LTB-SD-144-08	0007505
LTB-SD-144-09	0007506
LTB-SD-144-10	0007507
LTB-SD-144-11	0007508
LTB-SD-143-01	0007509
LTB-SD-143-02	0007510
LTB-SD-143-03	0007511
LTB-SD-143-04	0007512
LTB-SD-143-05	0007513
LTB-SD-143-06	0007514
LTB-SD-143-07	0007515

LTB-SD-143-08	0007516
LTB-SD-143-22	0007517
LTB-SD-143-09	0007518
LTB-SD-143-10	0007519
LTB-SD-143-11	0007520
LTB-SD-137-01	0007521
LTB-SD-137-02	0007522
LTB-SD-137-03	0007523
LTB-SD-137-22	0007524
LTB-SD-137-04	0007525
LTB-SD-137-05	0007526
LTB-SD-137-06	0007527
LTB-SD-137-07	0007528
LTB-SD-137-08	0007529
LTB-SD-137-09	0007530
LTB-SD-137-10	0007531
LTB-SD-137-11	0007532
LTB-SD-145-01	0007533
LTB-SD-145-02	0007534
LTB-SD-145-03	0007535
LTB-SD-145-04	0007536
LTB-SD-145-22	0007537
LTB-SD-145-05	0007538
LTB-SD-145-06	0007539
LTB-SD-145-07	0007540
LTB-SD-145-08	0007541
LTB-SD-145-09	0007542
LTB-SD-145-10	0007543
LTB-SD-145-11	0007544

Following this narrative section are a glossary of data qualifiers (Tables 1) and the original chain-of-custody records. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

ANALYTICAL METHODS

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000814**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **20 February 2001**

The analytical methods used by the laboratory are referenced by the STL Baltimore Method SOP which is formatted as STL-M-XXXXX-Y, where XXXXX is the reference method and Y is the SOP revision number. For example, analyses performed using EPA SW846 Method 8260B are identified as STL-M-8260B-3 where 3 is the laboratory SOP revision number. General Chemistry methods which are a consolidation of several reference methods, e.g. STL-M-CN for cyanide determinations, also include the identification of the specific reference method used for the analyses.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

METALS - SOIL (STL0007449 - STL0007460)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 10 July 2000 and

analyzed for mercury by STL-M-7470A/1A-2 on13 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

METALS - SOIL (STL0007461 - STL0007472)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 10 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on13 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

METALS - SOIL (STL0007473 - STL0007484)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 17 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 17 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

The MS/MSD recovery (performed on sample LTB-SD-138-01) for mercury (73.6%, 71.4%) was below the QC limit of 75%, indicating a potential for negative bias to the sample data for this element. The post-digestion spike (87.0%) was within QC limits.

METALS - SOIL (STL0007485 - STL0007496)

Sample Chronology: Eleven samples were prepared by STL-M-7470A/1A-2 on 17 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 17 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the

reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

The MS/MSD recovery (performed on sample LTB-SD-139-01) for mercury (71.5%, 70.0%) was below the QC limit of 75%, indicating a potential for negative bias to the sample data for this element. The post-digestion spike (83.0%) was within QC limits.

METALS - SOIL (STL0007497 - STL0007508)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 17 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 17 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

The MS/MSD recovery (performed on sample LTB-SD-144-01) for mercury (73.0%, 72.7%) was below the QC limit of 75%, indicating a potential for negative bias to the sample data for this element. The post-digestion spike (82.5%) was within QC limits.

METALS - SOIL (STL0007509 - STL0007520)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 19 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 20 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

The MSD recovery (performed on sample LTB-SD-143-01) for mercury (70.7%) was below the QC limit of 75%, indicating a potential for negative bias to the sample data for this element.

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
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Project number: **70047.67**

STL Baltimore Report: **000814**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **20 February 2001**

METALS - SOIL (STL0007521 - STL0007532)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 17 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 17 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.
Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

The MS/MSD recovery (performed on sample LTB-SD-137-01) for mercury (73.8%, 71.7%) was below the QC limit of 75%, indicating a potential for negative bias to the sample data for this element. The post-digestion spike (88.0%) was within QC limits.

METALS - SOIL (STL0007533 - STL0007544)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 20 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 20 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

METALS - SEDIMENT (STL0007485, STL0007497, STL0007521)

Sample Chronology:Three samples were prepared by STL-M-3050B-2 on 25 July 2000 and analyzed for TAL metals minus mercury by STL-M-6010B-1/7000S-2 on 26 and 27 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exceptions:

The method blank had the target analyte iron (16.4 mg/kg) detected above the reporting limit (10.0 mg/kg). However, the associated samples were detected at significantly higher concentrations than the method blank. Data usability should not be impacted for this element.

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000814**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **20 February 2001**

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

The MS/MSD recoveries (performed on sample LTB-SD-137-01) for antimony (31.6%, 33.1%), lead (34.1%, 23.8%) and selenium (42.5%, 41.9%) were below the QC limit of 75%, indicating a potential for negative bias to the sample data for these elements. The MS/MSD recoveries for aluminum, calcium, chromium, copper, iron, potassium, magnesium, manganese, sodium and zinc, could not be reliably determined because the high native concentrations of these elements were significantly higher than the spike concentration added.

The percent difference (%D) of arsenic (10.6%) for the serial dilution test was above the QC limit of 10%. This may indicate a possible matrix interference for these elements.

CERTIFICATION OF RESULTS

The Laboratory certifies that the reported results relate only to those samples tested and that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in STL Baltimore's Quality Assurance program for other than the conditions detailed above. Release of the data contained in this report has been authorized by the Laboratory Project Manager as verified by the following signature.

_____February 20, 2001
Natasha K. Sullivan, Laboratory Project Manager

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Company Name:	Project Manager or Contact:
USACE	Scott Chang
Project No: Ft. TOTTEN	Phone:
Dept.: Task:	Project Name: Ft. TOTTEN
Sample Storage Location: K6	ATO Number:
Page 1 of 1	Report #: 000814

Methods:
(a) Hg 7471
SAMPLE ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/25/00
LPM: NKS
PS-090

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	Parameters/Method Numbers (a) Hg 7471	Accession Number	Remarks
6/29	1545		X	4TB-SD-135-01	1	X	000744 8	LPM:
	1550			4TB-SD-135-02	1	X	000 7449	56
	1555			4TB-SD-135-03	1	X	000 7450	51
	1600			4TB-SD-135-04	1	X	000 7451	52
	1605			4TB-SD-135-05	1	X	000 7452	53
	1610			4TB-SD-135-06	1	X	000 7453	54
	1615			4TB-SD-135-07	1	X	000 7454	55
	1620			4TB-SD-135-08	1	X	000 7455	56
	1620			4TB-SD-135-22	1	X	000 7456	57
	1625			4TB-SD-135-09	1	X	000 7457	58
	1630			4TB-SD-135-10	1	X	000 7458	59 96402
	1635			4TB-SD-135-11	1	X	000 7459	60
								COC000 7399

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
	6/30/00		7/3/00	Fed EX	
Relinquished by: (Signature)	**Date/Time**	**Received by Laboratory: (Signature)**	**Date/Time**	**Airbill Number:**	**Sample Shipped by: (Circle)**
			7/10/00 1113	805411683450	Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp. 4 °C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☒ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

STL BALTIMORE
ANALYTICAL NARRATIVE

QC Chemist: JSK 7/24/00

Date: 24 July 2000

File Name: GROUP\NAR\00814mt2.NAR

Client/Project: USACE / Ft. Totten

METALS - SOIL (STL0007449 - STL0007460)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 10 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on13 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory ST LABORATORIES

Client: USACE
Project: FORT TROTTEN

JW 7/16/00

Lab Sample No.	Client ID.
T07449	LTB-SD-135-01
T07449D	LTB-SD-135-01D
T07449S	LTB-SD-135-01S
T07450	LTB-SD-135-02
T07451	LTB-SD-135-03
T07452	LTB-SD-135-04
T07453	LTB-SD-135-05
T07454	LTB-SD-135-06
T07455	LTB-SD-135-07
T07456	LTB-SD-135-08
T07457	LTB-SD-135-22
T07458	LTB-SD-135-09
T07459	LTB-SD-135-10
T07460	LTB-SD-135-11

Comments:

FORT TROTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirnow Name: Judy S. Kirnow

Date: 21 July 2000 Title: LAB TECHNICIAN

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07449

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix: SEDIMENT

Client ID: LTB-SD-135-01

Percent Solids: 25.4

Date Received: 07/01/00

JH 7/16/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.2			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07450

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix: SEDIMENT

Client ID: LTB-SD-135-02

Percent Solids: 29.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.6			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07451

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix: SEDIMENT

Client ID: LTB-SD-135-03 JW 7/16/08

Percent Solids: 32.1

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.5			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07452

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix: SEDIMENT

Client ID: LTB-SD-135-04 7/16/00

Percent Solids: 34.7

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.4			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07453

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix: SEDIMENT

Client ID: LTB-SD-135-05 JW 7/16/00

Percent Solids: 42.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.2			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07454

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix: SEDIMENT

Client ID: LTB-SD-135-06

Percent Solids: 32.9

Date Received: 07/01/00

JH 7/16/08

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.7			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07455

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix: SEDIMENT

Client ID: LTB-SD-135-07 7/16/00

Percent Solids: 48.5

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.7			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07456

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix: SEDIMENT

Client ID: LTB-SD-135-08 7/16/00

Percent Solids: 41.7

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.0			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07457

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix: SEDIMENT

Client ID: LTB-SD-135-22 JW 7/16/08

Percent Solids: 37.9

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.2			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07458

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix: SEDIMENT

Client ID: LTB-SD-135-09

Percent Solids: 53.4

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.0			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07459

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix: SEDIMENT

Client ID: LTB-SD-135-10

Percent Solids: 51.3

Date Received: 07/01/00

JHH 7/16/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.9			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07460

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix: SEDIMENT

Client ID: LTB-SD-135-11 JH 7/16/08

Percent Solids: 47.6

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.7			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: ST LABORATORIES

SDG No.:T07449

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury	6.0	5.58	93.0	3.0	2.81	93.7	2.82	94.0	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: ST LABORATORIES

SDG No.:T07449

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				3.0	2.80	93.3	2.79	93.0	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: ST LABORATORIES

SDG No.:T07449

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Mercury				3.0	2.74	91.3	2.73	91.0	CV

EPA SW846

FORM 2B
CRDL STANDARD FOR AA AND ICP

Laboratory: ST LABORATORIES

SDG No.: T07449

AA CRDL Standard Source: MALL

ICP CRDL Standard Source: IV

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Mercury	0.2	0.21	105.0					

EPA SW846

FORM 3
BLANKS

Laboratory: ST LABORATORIES

SDG No.: T07449

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.050	U	CV

EPA SW846

FORM 3
BLANKS

Laboratory: ST LABORATORIES

SDG No.: T07449

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury			0.1	U	0.1	U	0.1	U			CV

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER T07449S

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix (soil/water): SOIL
% Solids for Sample: 25.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	3.0162		1.1672		2.01	92.0		CV

Comments:

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER: T07449SD

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix (soil/water): SOIL
% Solids for Sample: 25.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	2.9347		1.1672		2.00	88.4		CV

MI 7/16/00

Comments: matrix spike duplicate

EPA SW846

FORM 6
DUPLICATES

LAB SAMPLE NUMBER T07449D

Laboratory: ST LABORATORIES

SDG No.: T07449

Matrix (soil/water): SOIL

% Solids for Sample: 25.4

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury		1.1672		1.1398		2.4		CV

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: ST LABORATORIES

SDG No.: T07449

Solid LCS Source: ERA LOT 244

Aqueous LCS Source: IV

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				0.7	0.5		0.3	1.1	71.4

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: ST LABORATORIES

SDG No.: T07449

Solid LCS Source: MESS-2

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				~~0.1~~ 0.092	~~0.1~~ 0.086				~~100.0~~ 93.2

corrections JV 7/16/08

EPA SW846

FORM 10
METHOD DETECTION LIMITS

Laboratory: ST LABORATORIES

SDG No.: T07449

ICP ID Number:

Date: 09/01/99

Furnace AA ID Number: 4CV

Analyte	Wave-length (nm)	Back-ground	Reporting Limit (ug/L)	MDL (ug/L)	M
Mercury	253.70		0.2	0.1	CV

Comments:

EPA SW846

FORM 13
Preparation Log

Laboratory: ST LABORATORIES

SDG No.: T07449

Method: CV

LAB Sample No.	Preparation Date	Weight (gram)	Volume (ml)	
LCSM	07/10/00	0.21	100	7/24/00
LCSS	07/10/00	0.21	100	
LCSW	07/10/00		100	
PBS	07/10/00	0.20	100	
T07449	07/10/00	0.78	100	
~~T07449A~~	~~07/10/00~~	~~0.00~~	~~100~~	DR 7/16/00
T07449D	07/10/00	0.79	100	
T07449S	07/10/00	0.78	100	
T07449SD	07/10/00	0.79	100	
T07450	07/10/00	0.68	100	
T07451	07/10/00	0.62	100	
T07452	07/10/00	0.58	100	
T07453	07/10/00	0.47	100	
T07454	07/10/00	0.61	100	
T07455	07/10/00	0.41	100	
T07456	07/10/00	0.48	100	
T07457	07/10/00	0.52	100	
T07458	07/10/00	0.37	100	
T07459	07/10/00	0.39	100	
T07460	07/10/00	0.42	100	

EPA SW846

FORM 14
Analysis Run Log

Lab Name: ST LABORATORIES
SDG No.: T07449
Instrument ID Number: 4CV
Start Date: 07/13/00

Method: CV
End Date: 07/13/00

Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ICV	1.00	1335																X									
ICB	1.00	1337																X									
CCV1	1.00	1338																X									
CCB1	1.00	1340																X									
CRA	1.00	1342																X									
ZZZZZZ	1.00	1344																									
ZZZZZZ	1.00	1346																									
ZZZZZZ	1.00	1347																									
ZZZZZZ	1.00	1349																									
ZZZZZZ	1.00	1351																									
ZZZZZZ	1.00	1353																									
ZZZZZZ	1.00	1355																									
ZZZZZZ	1.00	1356																									
ZZZZZZ	1.00	1358																									
CCV2	1.00	1400																X									
CCB2	1.00	1402																X									
ZZZZZZ	1.00	1404																									
ZZZZZZ	1.00	1405																									
ZZZZZZ	1.00	1407																									
ZZZZZZ	1.00	1409																									
ZZZZZZ	1.00	1411																									
ZZZZZZ	1.00	1413																									
ZZZZZZ	1.00	1414																									
ZZZZZZ	1.00	1416																									
ZZZZZZ	1.00	1418																									
ZZZZZZ	1.00	1420																									
CCV3	1.00	1422																X									
CCB3	1.00	1423																X									
ZZZZZZ	1.00	1425																									
ZZZZZZ	1.00	1427																									
ZZZZZZ	1.00	1429																									
ZZZZZZ	1.00	1431																									

EPA SW846

FORM 14
Analysis Run Log

Lab Name: ST LABORATORIES
SDG No.: T07449
Instrument ID Number: 4CV
Start Date: 07/13/00

Method: CV
End Date: 07/13/00

Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
PBS	1.00	1432																X								
LCSW	1.00	1434																X								
LCSS	1.00	1436																X								
LCSM	1.00	1438																X								
T07449	1.00	1439																X								
T07449D	1.00	1441																X								
CCV4	1.00	1443																X								
CCB4	1.00	1445																X								
T07449S	1.00	1447																X								
T07449SD	1.00	1448																X								
T07449A	1.00	1450	~~359.4~~															X								
T07450	1.00	1452	7/24/00															X								
T07451	1.00	1454																X								
T07452	1.00	1456																X								
T07453	1.00	1458																X								
T07454	1.00	1459																X								
T07455	1.00	1501																X								
T07456	1.00	1503																X								
CCV5	1.00	1505																X								
CCB5	1.00	1507																X								
T07457	1.00	1508																X								
T07458	1.00	1510																X								
T07459	1.00	1512																X								
T07460	1.00	1514																X								
ZZZZZZ	1.00	1515																								
ZZZZZZ	1.00	1517																								
ZZZZZZ	1.00	1519																								
ZZZZZZ	1.00	1521																								
ZZZZZZ	1.00	1523																								
ZZZZZZ	1.00	1524																								
CCV6	1.00	1526																X								
CCB6	1.00	1528																X								

STL Baltimore

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package			
Report #: 0084		Due Date: 7/25/00	
Prep Method (s)	Determinative Method(s)	Client/Project	USACE/FORT ROTTEN
STL-M- 7470A/1A-2	STL-M- 7470A/1A-2	No. of Samples	12
STL-M-	STL-M-	Matrix	☐ W ☐ S ☑ Sed ☐ Tiss ☐ Wipe
STL-M-	STL-M-	Project Summary	STL-PS- 090

I **DATA PACKAGE REVIEW (Completed by Data Package Generator)**

1.	Was the correct analysis performed & Project Summary followed?	☑ Yes	☐ No	☐ NCR#
2.	Were all reported results bracketed by in control QC?	☑ Yes	☐ No	☐ NCR#
3.	Was sample analyses performed within holding time?	☑ Yes	☐ No	☐ NCR#
4.	Were samples with concentrations > the linear range for any parameter diluted and reanalyzed?	☐ Yes	☐ No	☐ NCR# NA
5.	Are samples reported from a proper dilution?	☐ Yes	☐ No	☐ NCR# NA
6.	LCS done per prep batch and within QC limits?	☑ Yes	☐ No	☐ NCR#
7.	Method blank done per prep batch and < RL or CRDL (CLP)?	☑ Yes	☐ No	☐ NCR#
8.	SD run at required frequency and RPD within QC limits?	☑ Yes	☐ No	☐ NCR#
9.	MS run at required frequency and within limits?	☑ Yes	☐ No	☐ NCR#
10.	MSD run at required frequency and RPD within QC limits?	☑ Yes	☐ No	☐ NCR#

Analyte	MS (%R)	MSD (%R)	RPD

11.	Was Serial Dilution Test performed per prep batch and within 10% for samples > 50x IDL (CLP) or >10X RL. (SW846)?	☐ Yes	☐ No	☐ NCR# NR
12.	Was the analytical spike analyzed if required and acceptable?	☐ Yes	☐ No	☐ NCR# NR
13.	Have calculations been checked for error?	☑ Yes	☐ No	☐ NCR#
14.	Is sample calculation included in data package?	☑ Yes	☐ No	☐ NCR#
15.	Date/time of analysis verified as correct?	☑ Yes	☐ No	☐ NCR#

Comments:

sample calculation

T07432 4.7588 x 0.1 ÷ 0.5760 ÷ .3466 = 2.384 = 2.4 mg/kg
cone vol weight % solids

Form Initiated: May 18, 2000/mmu

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 60814

III DATA PACKAGE COMPLETENESS, AND NARRATIVE (Completed by Technical Reviewer)

1.	Are all required forms and raw data present?	☑ Yes	☐ No	☐ NCR#
2.	Are NCRs included in the report file and addressed in the narrative?	NR ☐ Yes	☐ No	☐ NCR#
3.	Is the report format consistent with **client** specifications?	☑ Yes	☐ No	☐ NCR#
4.	Are samples linked to appropriate QC (Prep) batch?	☑ Yes	☐ No	☐ NCR#
5.	Are sample IDs, units, matrices, dates, method IDs, and qualifiers correct?	☐ Yes	☐ No	☐ NCR#

Comments:

IV NOTES FOR ANALYTICAL NARRATIVE

(Completed by Data Generator and Technical Reviewer)

SAMPLE CHRONOLOGY

Prep 7/10/00

Run 7/13/00

METHOD PERFORMANCE SUMMARY

SAMPLE PERFORMANCE SUMMARY

Form Initiated: May 18, 2000/mmu

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 00814

V OVERALL ASSESSMENT OF DATA QUALITY (Completed by Supervisor)

1. Do spot-checked (minimum of 5%) data accurately reflect data?	☑ Yes	☐ No	☐ NCR#
2. Are all batch QC elements acceptable?	☑ Yes	☐ No	☐ NCR#
3. Is data package compliant with Method?	☑ Yes	☐ No	☐ NCR#
4. Is data package compliant with Project Summary	☑ Yes	☐ No	☐ NCR#
5. Is the "Narrative" complete and accurate per STL-SOP-305-?	☑ Yes	☐ No	☐ NCR#
6. Is the Narrative initialed and dated?	☑ Yes	☐ No	☐ NCR#

Comments:

DATA PACKAGE REVIEW (Signature): Wendy C VanMiddlesworth	**DATE:** 7/16/00
TECHNICAL REVIEW (Signature): Judy L Kunn	**DATE:** 7/24/00
SUPERVISOR REVIEW (Signature): Judy L Kunn	**DATE:** 7/24/00

Form Initiated: May 18, 2000/mmu

8(2)

Company Name: USACE	Project Manager or Contact: Scott Chang
Project No. Ft. TOTTEN	Phone:
Dept.: Task:	Project Name: Ft. TOTTEN
Sample Storage Location: K6	ATO Number:
Page 1 of 1	Report #: 000814

Parameters/Method Numbers for Analysis

Chain of Custody Record

Methods:
(a) Hg 7471
SAMPLES ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/25/00
LPM: NKS
PS-090

OD Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	HG (A)		LPM:
6/29	1445		X	4TB-SD-V36-01	1	X	0007460	
	1450		X	4TB-SD-V36-02	1	X	0007461	62
	1455		X	4TB-SD-V36-03	1	X	0007462	63
	1500		X	4TB-SD-V36-04	1	X	0007463	64
	1505		X	4TB-SD-V36-05	1	X	0007464	65
	1510		X	4TB-SD-V36-06	1	X	0007465	66
	1515		X	4TB-SD-V36-07	1	X	0007466	67
	1520		X	4TB-SD-V36-08	1	X	0007467	68
	1525		X	4TB-SD-V36-09	1	X	0007468	69
	1525		X	4TB-SD-V36-22	1	X	0007469	70
	1530		X	4TB-SD-V36-10	1	X	0007470	71
	1535		X	4TB-SD-V36-11	1	X	0007471	72

COC0007399

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
JOE Leise	6/30/00	JOE Leise	6/30/00	Fed EX	
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		Roger Easton	7/1/00 11:30	805411683450	Fed Ex. Purol. UPS Hand Carried Other:

Cooler Temp. 4 C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☒ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

STL BALTIMORE
ANALYTICAL NARRATIVE

QC Chemist: JSK 7/24/00

Date: 24 July 2000

File Name: GROUP\NAR\00814mt1.NAR

Client/Project: USACE / Ft. Totten

METALS - SOIL (STL0007461 - STL0007472)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 10 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on13 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory ST LABORATORIES

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T07461	LTB-SD-136-01
T07461D	LTB-SD-136-01D
T07461S	LTB-SD-136-01S
T07462	LTB-SD-136-02
T07463	LTB-SD-136-03
T07464	LTB-SD-136-04
T07465	LTB-SD-136-05
T07466	LTB-SD-136-06
T07467	LTB-SD-136-07
T07468	LTB-SD-136-08
T07469	LTB-SD-136-09
T07470	LTB-SD-136-22
T07471	LTB-SD-136-10
T07472	LTB-SD-136-11

JW 7/16/00

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirnon Name: Judy S Kirnon

Date: 24 July 2000 Title: LAB TECHNICIAN

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07461

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix: SEDIMENT

Client ID: LTB-SD-136-01

JH 7/16/00

Percent Solids: 24.6

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.1			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07462

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix: SEDIMENT

Client ID: LTB-SD-136-02

Percent Solids: 26.6

Date Received: 07/01/00 7/16/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.3			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07463

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix: SEDIMENT

Client ID: LTB-SD-136-03

JH 7/16/00

Percent Solids: 27.9

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.2			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07464

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix: SEDIMENT

Client ID: LTB-SD-136-04 JH 7/16/00

Percent Solids: 49.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.6			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07465

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix: SEDIMENT

Client ID: LTB-SD-136-05 JHV 7/16/00

Percent Solids: 42.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.2			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07466

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix: SEDIMENT

Client ID: LTB-SD-136-06

Percent Solids: 41.9

Date Received: 07/01/00

JH 7/16/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.0			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07467

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix: SEDIMENT

Client ID: LTB-SD-136-07 JW 7/16/00

Percent Solids: 47.7

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.5			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07468

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix: SEDIMENT

Client ID: LTB-SD-136-08

JR 7/16/08

Percent Solids: 43.9

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.5			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07469

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix: SEDIMENT

Client ID: LTB-SD-136-07

Percent Solids: 46.0

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.9			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07470

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix: SEDIMENT

Client ID: LTB-SD-136-22 7/16/00

Percent Solids: 45.7

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.8			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07471

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix: SEDIMENT

Client ID: LTB-SD-136-10

Percent Solids: 44.0

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	3.0			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07472

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix: SEDIMENT

Client ID: LTB-SD-136-11

Percent Solids: 48.3

Date Received: 07/01/00

JW 7/16/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.9			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: ST LABORATORIES

SDG No.:T07461

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury	6.0	5.58	93.0	3.0	2.81	93.7	2.82	94.0	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: ST LABORATORIES

SDG No.:T07461

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				3.0	2.80	93.3	2.79	93.0	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: ST LABORATORIES

SDG No.:T07461

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				3.0	2.74	91.3	2.73	91.0	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: ST LABORATORIES

SDG No.:T07461

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Mercury				3.0	2.70	90.0	2.66	88.7	CV

EPA SW846

FORM 2B
CRDL STANDARD FOR AA AND ICP

Laboratory: ST LABORATORIES

SDG No.: T07461

AA CRDL Standard Source: MALL

ICP CRDL Standard Source: IV

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Mercury	0.2	0.21	105.0					

EPA SW846

FORM 3
BLANKS

Laboratory: ST LABORATORIES

SDG No.: T07461

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.050	U	CV

EPA SW846

FORM 3
BLANKS

Laboratory: ST LABORATORIES

SDG No.: T07461

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury			0.1	U	0.1	U	0.1	U			CV

EPA SW846

FORM 3
BLANKS

Laboratory: ST LABORATORIES

SDG No.: T07461

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury			0.1	U	0.1	U					CV

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER T07461S

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix (soil/water): SOIL
% Solids for Sample: 24.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	2.7631		1.1013		1.99	83.5		CV

Comments:

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER: T07461SD

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix (soil/water): SOIL
% Solids for Sample: 24.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	2.8791		1.1013		1.99	89.3		CV

JV 7/16/00

Comments: matrix spike duplicate

EPA SW846

FORM 6
DUPLICATES

LAB SAMPLE NUMBER T07461D

Laboratory: ST LABORATORIES

SDG No.: T07461

Matrix (soil/water): SOIL

% Solids for Sample: 24.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury		1.1013		1.1343		3.0		CV

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: ST LABORATORIES

SDG No.: T07461

Solid LCS Source: ERA LOT 244

Aqueous LCS Source: IV

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				0.7	0.6		0.3	1.1	85.7

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: ST LABORATORIES

SDG No.: T07461

Solid LCS Source: MESS-2

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				0.092 ~~0.1~~	0.08 ~~0.1~~				~~87.~~ ~~100.0~~

correction
JW 7/6/00

EPA SW846

FORM 10
METHOD DETECTION LIMITS

Laboratory: ST LABORATORIES

SDG No.: T07461

ICP ID Number:

Date: 09/01/99

Furnace AA ID Number: 4CV

Analyte	Wave-length (nm)	Back-ground	Reporting Limit (ug/L)	MDL (ug/L)	M
Mercury	253.70		0.2	0.1	CV

Comments:

EPA SW846

FORM 13
Preparation Log

Laboratory: ST LABORATORIES

SDG No.: T07461

Method: CV

LAB Sample No.	Preparation Date	Weight (gram)	Volume (ml)
LCSM	07/10/00	0.21	100
LCSS	07/10/00	0.21	100
LCSW	07/10/00		100
PBS	07/10/00	0.20	100
T07461	07/10/00	0.82	100
T07461D	07/10/00	0.82	100
T07461S	07/10/00	0.82	100
T07461SD	07/10/00	0.82	100
T07462	07/10/00	0.75	100
T07463	07/10/00	0.72	100
T07464	07/10/00	0.40	100
T07465	07/10/00	0.47	100
T07466	07/10/00	0.48	100
T07467	07/10/00	0.42	100
T07468	07/10/00	0.45	100
T07469	07/10/00	0.43	100
T07470	07/10/00	0.44	100
T07471	07/10/00	0.45	100
T07472	07/10/00	0.41	100

7/24/00

EPA SW846

FORM 14
Analysis Run Log

Lab Name: ST LABORATORIES
SDG No.: T07461
Instrument ID Number: 4CV
Start Date: 07/13/00

Method: CV
End Date: 07/13/00

Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ICV	1.00	1335																X								
ICB	1.00	1337																X								
CCV1	1.00	1338																X								
CCB1	1.00	1340																X								
CRA	1.00	1342																X								
ZZZZZZ	1.00	1344																								
ZZZZZZ	1.00	1346																								
ZZZZZZ	1.00	1347																								
ZZZZZZ	1.00	1349																								
ZZZZZZ	1.00	1351																								
ZZZZZZ	1.00	1353																								
ZZZZZZ	1.00	1355																								
ZZZZZZ	1.00	1356																								
ZZZZZZ	1.00	1358																								
CCV2	1.00	1400																X								
CCB2	1.00	1402																X								
ZZZZZZ	1.00	1404																								
ZZZZZZ	1.00	1405																								
ZZZZZZ	1.00	1407																								
ZZZZZZ	1.00	1409																								
ZZZZZZ	1.00	1411																								
ZZZZZZ	1.00	1413																								
ZZZZZZ	1.00	1414																								
ZZZZZZ	1.00	1416																								
ZZZZZZ	1.00	1418																								
ZZZZZZ	1.00	1420																								
CCV3	1.00	1422																X								
CCB3	1.00	1423																X								
ZZZZZZ	1.00	1425																								
ZZZZZZ	1.00	1427																								
ZZZZZZ	1.00	1429																								
ZZZZZZ	1.00	1431																								

EPA SW846

FORM 14
Analysis Run Log

Lab Name: ST LABORATORIES
SDG No.: T07461
Instrument ID Number: 4CV
Start Date: 07/13/00

Method: CV
End Date: 07/13/00

Sample No.	D/F	Time	%R	Analytes																											
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1432																									
ZZZZZZ	1.00	1434																									
ZZZZZZ	1.00	1436																									
ZZZZZZ	1.00	1438																									
ZZZZZZ	1.00	1439																									
ZZZZZZ	1.00	1441																X									
CCV4	1.00	1443																X									
CCB4	1.00	1445																									
ZZZZZZ	1.00	1447																									
ZZZZZZ	1.00	1448																									
ZZZZZZ	1.00	1450																									
ZZZZZZ	1.00	1452																									
ZZZZZZ	1.00	1454																									
ZZZZZZ	1.00	1456																									
ZZZZZZ	1.00	1458																									
ZZZZZZ	1.00	1459																									
ZZZZZZ	1.00	1501																									
ZZZZZZ	1.00	1503																									
CCV5	1.00	1505																X									
CCB5	1.00	1507																X									
ZZZZZZ	1.00	1508																									
ZZZZZZ	1.00	1510																									
ZZZZZZ	1.00	1512																									
ZZZZZZ	1.00	1514																									
PBS	1.00	1515																X									
LCSW	1.00	1517																X									
LCSS	1.00	1519																X									
LCSM	1.00	1521																X									
T07461	1.00	1523																X									
T07461D	1.00	1524																X									
CCV6	1.00	1526																X									
CCB6	1.00	1528																X									

EPA SW846

FORM 14
Analysis Run Log

Lab Name: ST LABORATORIES
SDG No.: T07461
Instrument ID Number: 4CV
Start Date: 07/13/00

Method: CV
End Date: 07/13/00

Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
T07461S	1.00	1530																X								
T07461SD	1.00	1532																X								
T07461A	1.00	1533																X								
T07462	1.00	1535																X								
T07463	1.00	1537																X								
T07464	1.00	1539																X								
T07465	1.00	1541																X								
T07466	1.00	1542																X								
T07467	1.00	1544																X								
T07468	1.00	1546																X								
CCV7	1.00	1548																X								
CCB7	1.00	1549																X								
T07469	1.00	1551																X								
T07470	1.00	1553																X								
T07471	1.00	1555																X								
T07472	1.00	1557																X								
CCV8	1.00	1558																X								
CCB8	1.00	1600																X								

STL Baltimore

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package			
Report #: 00814		Due Date: 7/25/00	
Prep Method (s)	Determinative Method(s)	Client/Project	USACE / FORT TROTTEN
STL-M-7470A/14-2	STL-M-7470A/14-2	No. of Samples	12
STL-M-	STL-M-	Matrix	☐ W ☐ S ☑ Sed ☐ Tiss ☐ Wipe
STL-M-	STL-M-	Project Summary	STL-PS- 090

I **DATA PACKAGE REVIEW (Completed by Data Package Generator)**

1.	Was the correct analysis performed & Project Summary followed?	☑ Yes	☐ No	☐ NCR#
2.	Were all reported results bracketed by in control QC?	☑ Yes	☐ No	☐ NCR#
3.	Was sample analyses performed within holding time?	☑ Yes	☐ No	☐ NCR#
4.	Were samples with concentrations > the linear range for any parameter diluted and reanalyzed?	☐ Yes	☐ No	☐ NCR# NR
5.	Are samples reported from a proper dilution?	☐ Yes	☐ No	☐ NCR# NR
6.	LCS done per prep batch and within QC limits?	☑ Yes	☐ No	☐ NCR#
7.	Method blank done per prep batch and < RL or CRDL (CLP)?	☑ Yes	☐ No	☐ NCR#
8.	SD run at required frequency and RPD within QC limits?	☑ Yes	☐ No	☐ NCR#
9.	MS run at required frequency and within limits?	☑ Yes	☐ No	☐ NCR#
10.	MSD run at required frequency and RPD within QC limits?	☑ Yes	☐ No	☐ NCR#

Analyte	MS (%R)	MSD (%R)	RPD

11.	Was Serial Dilution Test performed per prep batch and within 10% for samples > 50x IDL (CLP) or >10X RL. (SW846)?	☐ Yes	☐ No	☐ NCR# NR
12.	Was the analytical spike analyzed if required and acceptable?	☐ Yes	☐ No	☐ NCR# NR
13.	Have calculations been checked for error?	☑ Yes	☐ No	☐ NCR#
14.	Is sample calculation included in data package?	☑ Yes	☐ No	☐ NCR#
15.	Date/time of analysis verified as correct?	☑ Yes	☐ No	☐ NCR#

Comments:

sample calculation:

T07463 2.3304 x 0.1 ÷ 0.7150 ÷ .2787 = 1.169 = (1.2 mg/kg)
sample conc Vol wt(g) % Solids

Form Initiated: May 18, 2000/mmu

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 0084

III DATA PACKAGE COMPLETENESS, AND NARRATIVE (Completed by Technical Reviewer)

1.	Are all required forms and raw data present?	☑ Yes	☐ No	☐ NCR#
2.	Are NCRs included in the report file and addressed in the narrative?	N/C ☐ Yes	☐ No	☐ NCR#
3.	Is the report format consistent with **client** specifications?	☑ Yes	☐ No	☐ NCR#
4.	Are samples linked to appropriate QC (Prep) batch?	☑ Yes	☐ No	☐ NCR#
5.	Are sample IDs, units, matrices, dates, method IDs, and qualifiers correct?	☑ Yes	☐ No	☐ NCR#

Comments:

IV NOTES FOR ANALYTICAL NARRATIVE

(Completed by Data Generator and Technical Reviewer)

SAMPLE CHRONOLOGY

Prep 7/10/00

Run 7/13/00

METHOD PERFORMANCE SUMMARY

SAMPLE PERFORMANCE SUMMARY

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 00814

V OVERALL ASSESSMENT OF DATA QUALITY (Completed by Supervisor)

1. Do spot-checked (minimum of 5%) data accurately reflect data?	☑ Yes	☐ No	☐ NCR#
2. Are all batch QC elements acceptable?	☑ Yes	☐ No	☐ NCR#
3. Is data package compliant with Method?	☑ Yes	☐ No	☐ NCR#
4. Is data package compliant with Project Summary	☑ Yes	☐ No	☐ NCR#
5. Is the "Narrative" complete and accurate per STL-SOP-305-?	☑ Yes	☐ No	☐ NCR#
6. Is the Narrative initialed and dated?	☑ Yes	☐ No	☐ NCR#

Comments:

DATA PACKAGE REVIEW (Signature): Wendy C VanMiddlesworth	**DATE:** 7/16/08
TECHNICAL REVIEW (Signature): Judy L. Kunes	**DATE:** 7/24/08
SUPERVISOR REVIEW (Signature): Judy L. Kunes	**DATE:** 7/24/08

Form Initiated: May 18, 2000/mmu

Methods:
(a) Hg 7471
SAMPLES ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/25/00
LPM: NKS
PS-090

Company Name: US ACE	Project Manager or Contact: Phone: Scott Chang
Project No. Ft TOTTEN	Project Name: Ft. TOTTEN
Dept.: Task:	
Sample Storage Location: K6	ATO Number:
Page 1 of 1	Report #: 000814

Parameters/Method Numbers for A

00 Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	HG (A)	TAL Metal	6010/7000 series	EA Labs Accession Number	Remarks
6/28	1645		X	4TB-SD-137-01	1		X		0007520	21 LPM:
	1650			4TB-SD-137-02	1	X			0007521	22
	1700			4TB-SD-137-03	1	X			0007522	23
	1700			4TB-SD-137-22	1	X			0007523	24
	1705			4TB-SD-137-04	1	X			0007524	25
	1710			4TB-SD-137-05	1	X			0007525	26
	1715			4TB-SD-137-06	1	X			0007526	27
	1720			4TB-SD-137-07	1	X			0007527	28
	1725			4TB-SD-137-08	1	X			0007528	29
	1730			4TB-SD-137-09	1	X			0007529	30
	1735			4TB-SD-137-10	1	X			0007530	31
	1740			4TB-SD-137-11	1	X			0007531	32

COC0007399

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
JOE Leise	6/30 1800	JOE Leise	6/30 1800	Fed EX	
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		Phyllis Easter	7/1/00 1130	805411683450	Fed Ex. Puro. UPS

Cooler Temp. 4 C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☒ Yes ☐ No

Hand Carried

Other:

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

STL BALTIMORE
ANALYTICAL NARRATIVE

QC Chemist: JSK 7/28/00

Date: 28 July 2000

File Name: GROUP\NAR\00814mt6.NAR

Client/Project: USACE / Ft. Totten

METALS - SOIL (STL0007521 - STL0007532)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 17 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 17 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

- The MS/MSD recovery (performed on sample LTB-SD-137-01) for mercury (73.8%, 71.7%) was below the QC limit of 75%, indicating a potential for negative bias to the sample data for this element. The post-digestion spike (88.0%) was within QC limits.

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T07521	LTBSD13701
T07521D	LTBSD13701D) 7/28/00
T07521S	LTBSD13701S)
T07522	LTBSD13702
T07523	LTBSD13703
T07524	LTBSD13722
T07525	LTBSD13704
T07526	LTBSD13705
T07527	LTBSD13706
T07528	LTBSD13707
T07529	LTBSD13708
T07530	LTBSD13709
T07531	LTBSD13710
T07532	LTBSD13711

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kinnon Name: JUDY S. KINNON

Date: 28 July 2000 Title: LAB TECHNICIAN

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07521

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix: SEDIMENT

Client ID: LTBSD13701

Percent Solids: 28.2

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.3		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07522

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix: SEDIMENT Client ID: LTBSD13702

Percent Solids: 44.6 Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.2		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07523

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix: SEDIMENT

Client ID: LTBSD13703

Percent Solids: 43.9

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.0		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07524

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix: SEDIMENT Client ID: LTBSD13722

Percent Solids: 49.3 Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.8		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07525

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix: SEDIMENT

Client ID: LTBSD13704

Percent Solids: 26.5

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.87		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07526

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix: SEDIMENT

Client ID: LTBSD13705

Percent Solids: 38.4

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.2		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07527

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix: SEDIMENT

Client ID: LTBSD13706

Percent Solids: 45.9

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.2		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07528

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix: SEDIMENT

Client ID: LTBSD13707

Percent Solids: 46.2

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.9		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07529

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix: SEDIMENT

Client ID: LTBSD13708

Percent Solids: 48.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.6		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07530

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix: SEDIMENT Client ID: LTBSD13709

Percent Solids: 45.8 Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.6		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07531

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix: SEDIMENT

Client ID: LTBSD13710

Percent Solids: 43.6 ~~45.3~~

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	3.12 ~~3.9~~		N	CV

Correction: JD 7/28/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07532-

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix: SEDIMENT

Client ID: LTBSD13711

Percent Solids: 55.2

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.06	B	N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07522

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury	6.0	5.67	94.5	3.0	2.77	92.3	2.80	93.3	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07522

Initial Calibration Source:

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				3.0	2.77	92.3	2.75	91.7	CV

EPA SW846

FORM 2B
CRDL STANDARD FOR AA AND ICP

Laboratory: STL BALTIMORE

SDG No.: T07522

AA CRDL Standard Source: MALL

ICP CRDL Standard Source:

Concentration Units: ug/L

	CRDL Standard for AA			CRDL Standard for ICP				
				Initial			Final	
Analyte	True	Found	%R	True	Found	%R	Found	%R
Mercury	0.2	0.16	80.0					

EPA SW846

FORM 3
BLANKS

Laboratory: STL BALTIMORE

SDG No.: T07522

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.050	U	CV

EPA SW846

FORM 3
BLANKS

Laboratory: STL BALTIMORE

SDG No.: T07522

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury			0.1	U							CV

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER: T07521S

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix (soil/water): SOIL
% Solids for Sample: 28.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	2.7507		1.2683		2.01	73.8	N	CV

Comments:

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER T07521SD

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix (soil/water): SOIL
% Solids for Sample: 28.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	2.7020		1.2683		2.00	71.7	N	CV

Corrections: 7/24/00

Comments: MATRIX SPIKE DUPLICATE

EPA SW846

FORM 5B
POST DIGEST SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER: T07521A

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix (soil/water): SOIL

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury		4.27		2.51		2.0	88.0		CV

Comments:

EPA SW846

FORM 6
DUPLICATES

LAB SAMPLE NUMBER: T07521D

Laboratory: STL BALTIMORE

SDG No.: T07522

Matrix (soil/water): SOIL

% Solids for Sample: 28.2

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury		1.2683		1.2557		1.0		CV

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: STL BALTIMORE

SDG No.: T07522

Solid LCS Source: ERA

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				0.7	0.6		0.3	1.1	85.7

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: STL BALTIMORE

SDG No.: T07522

Solid LCS Source: MESS - 2

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				~~0.1~~ 0.092	~~0.1~~ 0.065				~~100.0~~ 70.1

Corrections: [signature] 7/25/00

EPA SW846

FORM 10
METHOD DETECTION LIMITS

Laboratory: STL BALTIMORE

SDG No.: T07522

ICP ID Number:

Date: 09/01/99

Furnace AA ID Number: 4CV

Analyte	Wave-length (nm)	Back-ground	Reporting Limit (ug/L)	MDL (ug/L)	M
Mercury	253.70		0.2	0.1	CV

Comments:

EPA SW846

FORM 13
Preparation Log

Laboratory: STL BALTIMORE

SDG No.: T07522

Method: CV

LAB Sample No.	Preparation Date	Weight (gram)	Volume (ml)
LCSS	07/20/00	0.20	100
LCSSM	07/20/00	0.20	100
LCSW	07/20/00		100
PBS	07/20/00	0.20	100
T07521	07/20/00	0.70	100
T07521D	07/20/00	0.71	100
T07521S	07/20/00	0.71	100
T07521SD	07/20/00	0.71	100
T07522	07/20/00	0.45	100
T07523	07/20/00	0.45	100
T07524	07/20/00	0.40	100
T07525	07/20/00	0.76	100
T07526	07/20/00	0.52	100
T07527	07/20/00	0.44	100
T07528	07/20/00	0.43	100
T07529	07/20/00	0.42	100
T07530	07/20/00	0.44	100
T07531	07/20/00	0.46	100
T07532	07/20/00	0.36	100

EPA SW846

FORM 14
Analysis Run Log

Lab Name: STL BALTIMORE
SDG No.: T07522
Instrument ID Number: 4CV
Start Date: 07/20/00

Method: CV
End Date: 07/20/00

Sample No.	D/F	Time	%R	Analytes																												
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ICV	1.00	1614																X								
ICB	1.00	1616																X								
CCV1	1.00	1618																X								
CCB1	1.00	1620																X								
CRA	1.00	1621																X								
PBS	1.00	1623																X								
LCSW	1.00	1625																X								
LCSS	1.00	1627																X								
LCSSM	1.00	1628																X								
T07521	1.00	1630																X								
T07521D	1.00	1632																X								
T07521S	1.00	1634																X								
T07521SD	1.00	1636																X								
T07521A	1.00	1638																X								
CCV2	1.00	1639																X								
CCB2	1.00	1641																X								
T07522	1.00	1643																X								
T07523	1.00	1645																X								
T07524	1.00	1646																X								
T07525	1.00	1648																X								
T07526	1.00	1650																X								
T07527	1.00	1652																X								
T07528	1.00	1654																X								
T07529	1.00	1655																X								
T07530	1.00	1657																X								
T07531	1.00	1659																X								
CCV3	1.00	1701																X								
CCB3	1.00	1703																X								
T07532	1.00	1705																X								
ZZZZZZ	1.00	1706																								
ZZZZZZ	1.00	1708																								
ZZZZZZ	1.00	1710																								

EPA SW846

FORM 14
Analysis Run Log

Lab Name: STL BALTIMORE
SDG No.: T07522
Instrument ID Number: 4CV
Start Date: 07/20/00

Method: CV
End Date: 07/20/00

Sample No.	D/F	Time	%R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1712																									
ZZZZZZ	1.00	1713																									
ZZZZZZ	1.00	1715																									
ZZZZZZ	1.00	1717																									
ZZZZZZ	1.00	1719																									
ZZZZZZ	1.00	1721																									
CCV4	1.00	1722																X									
CCB4	1.00	1724																X									

Severn Trent Laboratories, Inc.
STL Baltimore

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package			
Report #: 000814		Due Date: 7/25/00	
Prep Method (s)	Determinative Method(s)	Client/Project	USACE- Ft Tolten
STL-M- 7471	STL-M- 7471	No. of Samples	12
STL-M-	STL-M-	Matrix	❑ W ❑ S ☑ Sed ❑ Tiss ❑ Wipe
STL-M-	STL-M-	Project Summary	STL-PS- 090

I **DATA PACKAGE REVIEW (Completed by Data Package Generator)**

1.	Was the correct analysis performed & Project Summary followed?	☑ Yes	❑ No	❑ NCR#
2.	Were all reported results bracketed by in control QC?	☑ Yes	❑ No	❑ NCR#
3.	Was sample analyses performed within holding time?	☑ Yes	❑ No	❑ NCR#
4.	Were samples with concentrations > the linear range for any parameter diluted and reanalyzed?	NR ❑ Yes	❑ No	❑ NCR#
5.	Are samples reported from a proper dilution?	NR ❑ Yes	❑ No	❑ NCR#
6.	LCS done per prep batch and within QC limits?	☑ Yes	❑ No	❑ NCR#
7.	Method blank done per prep batch and < RL or CRDL (CLP)?	☑ Yes	❑ No	❑ NCR#
8.	SD run at required frequency and RPD within QC limits?	☑ Yes	❑ No	❑ NCR#
9.	MS run at required frequency and within limits?	❑ Yes	☑ No	❑ NCR#
10.	MSD run at required frequency and RPD within QC limits?	❑ Yes	☑ No	❑ NCR#

Analyte	MS (%R)	MSD (%R)	RPD
Hg	73.8	71.7	

11.	Was Serial Dilution Test performed per prep batch and within 10% for samples > 50x IDL (CLP) or >10X RL. (SW846)?	NA ❑ Yes	❑ No	❑ NCR#
12.	Was the analytical spike analyzed if required and acceptable?	☑ Yes	❑ No	❑ NCR#
13.	Have calculations been checked for error?	☑ Yes	❑ No	❑ NCR#
14.	Is sample calculation included in data package?	NR ❑ Yes	❑ No	❑ NCR#
15.	Date/time of analysis verified as correct?	☑ Yes	❑ No	❑ NCR#

Comments: _____

Form Initiated: May 18, 2000/mmu

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 000814

III DATA PACKAGE COMPLETENESS, AND NARRATIVE (Completed by Technical Reviewer)

1.	Are all required forms and raw data present?	☑ Yes	☐ No	☐ NCR#
2.	Are NCRs included in the report file and addressed in the narrative?	NR ☐ Yes	☐ No	☐ NCR#
3.	Is the report format consistent with **client** specifications?	☑ Yes	☐ No	☐ NCR#
4.	Are samples linked to appropriate QC (Prep) batch?	☑ Yes	☐ No	☐ NCR#
5.	Are sample IDs, units, matrices, dates, method IDs, and qualifiers correct?	☑ Yes	☐ No	☐ NCR#

Comments:

IV NOTES FOR ANALYTICAL NARRATIVE

(Completed by Data Generator and Technical Reviewer)

SAMPLE CHRONOLOGY

Prep 7/20/00

Run 7/20/00

METHOD PERFORMANCE SUMMARY

SAMPLE PERFORMANCE SUMMARY

MS/MSD (73.8, 71.7)

PDS: (88.0)

Form Initiated: May 18, 2000/mmu

Severn Trent Laboratories, Inc.
STL Baltimore

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: D00814

V **OVERALL ASSESSMENT OF DATA QUALITY (Completed by Supervisor)**

1. Do spot-checked (minimum of 5%) data accurately reflect data?	☑ Yes	☐ No	☐ NCR#
2. Are all batch QC elements acceptable?	☑ Yes	☐ No	☐ NCR#
3. Is data package compliant with Method?	☑ Yes	☐ No	☐ NCR#
4. Is data package compliant with Project Summary	☑ Yes	☐ No	☐ NCR#
5. Is the "Narrative" complete and accurate per STL-SOP-305-?	☑ Yes	☐ No	☐ NCR#
6. Is the Narrative initialed and dated?	☑ Yes	☐ No	☐ NCR#

Comments:

DATA PACKAGE REVIEW (Signature): John Mooney	**DATE:** 7-28-00
TECHNICAL REVIEW (Signature): Judy L. Kunes	**DATE:** 7/28/00
SUPERVISOR REVIEW (Signature): Judy L. Kunes	**DATE:** 7/28/00

Form Initiated: May 18, 2000/mmu

5 (3)

Company Name: USACE	Project Manager or Contact: SCOTT Chang
Project No. Dept.: Ft Totten Task:	Phone:
Sample Storage Location: LC	Project Name: Ft Totten
Page 1 of 1	ATO Number:
	Report #: CC08814

Methods:
(a) Hg 7471
SAMPLES ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/25/00
LPM: NKS
PS-090

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	Parameters/Method Numbers f	Accession Number	Remarks
6/29	1315		X	FTB-SD-138-01	1	X	0007477	LPM:
	1320			FTB-SD-138-02	1	X	0007473	74
	1355			FTB-SD-138-03	1	X	0007474	75
	1400			FTB-SD-138-04	1	X	0007475	76
	1405			FTB-SD-138-05	1	X	0007476	77
	1410			FTB-SD-138-06	1	X	0007477	78
	1415			FTB-SD-138-07	1	X	0007478	79
	1420			FTB-SD-138-08	1	X	0007479	80
	1425			FTB-SD-138-09	1	X	0007480	81
	1430			FTB-SD-138-10	1	X	0007481	82
	1430			FTB-SD-138-11	1	X	0007482	83
	1440			FTB-SD-138-12	1	X	0007483	84
								COC0007399

Sampled by: (Signature) Jos Lerio	Date/Time 6/30/00	Relinquished by: (Signature) Jos Lerio	Date/Time 6/30/00	Received by: (Signature) Fed EX	Date/Time
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time 7/1/00	Airbill Number: 805411683450	Sample Shipped by: (Circle) Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp. 4 °C pH: ☐ Yes ☐ No Comments: Custody Seals Intact: ☒ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

PINK—Project Manager

Shaded Areas for Lab Use Only

STL BALTIMORE
ANALYTICAL NARRATIVE

QC Chemist: JSK 7/26/00

Date: 26 July 2000

File Name: GROUP\NAR\00814mt4.NAR

Client/Project: USACE / Ft. Totten

METALS - SOIL (STL0007473 - STL0007484)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 17 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 17 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

- The MS/MSD recovery (performed on sample LTB-SD-138-01) for mercury (73.6%, 71.4%) was below the QC limit of 75%, indicating a potential for negative bias to the sample data for this element. The post-digestion spike (87.0%) was within QC limits.

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T07473	LTBSD13801
T07473D	LTBSD13801D
T07473S	LTBSD13801S
T07474	LTBSD13802
T07475	LTBSD13803
T07476	LTBSD13804
T07477	LTBSD13805
T07478	LTBSD13806
T07479	LTBSD13807
T07480	LTBSD13808
T07481	LTBSD13809
T07482	LTBSD13810
T07483	LTBSD13822
T07484	LTBSD13811

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirnon Name: Judy S Kirnon

Date: 26 July 2000 Title: LAB TECHNICIAN

EPA SW846

FORM 1

METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07473

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix: SEDIMENT

Client ID: LTBSD13801

Percent Solids: 24.5

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.97		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07474

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix: SEDIMENT

Client ID: LTBSD13802

Percent Solids: 28.4

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.0		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1

METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07475

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix: SEDIMENT

Client ID: LTBSD13803

Percent Solids: 29.4

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.0		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07476

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix: SEDIMENT

Client ID: LTBSD13804

Percent Solids: 32.5

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.4		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1

METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07477

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix: SEDIMENT

Client ID: LTBSD13805

Percent Solids: 30.5

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.7		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1

METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07478

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix: SEDIMENT Client ID: LTBSD13806

Percent Solids: 30.3 Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.4		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA-SHEET

LAB SAMPLE NUMBER T07479

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix: SEDIMENT

Client ID: LTBSD13807

Percent Solids: 37.1

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.0		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07480

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix: SEDIMENT

Client ID: LTBSD13808

Percent Solids: 36.4

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.3		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07481

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix: SEDIMENT

Client ID: LTBSD13809

Percent Solids: 41.8

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.1		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07482

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix: SEDIMENT Client ID: LTBSD13810

Percent Solids: 45.3 Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.9		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07483

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix: SEDIMENT

Client ID: LTBSD13822

Percent Solids: 44.7

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.7		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07484

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix: SEDIMENT

Client ID: LTBSD13811

Percent Solids: 41.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.7		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07473

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury	6.0	5.76	96.0	3.0	2.77	92.3	2.77	92.3	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07473

Initial Calibration Source:

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				3.0	2.70	90.0	2.67	89.0	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07473

Initial Calibration Source:

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				3.0	2.61	87.0			CV

EPA SW846

FORM 2B
CRDL STANDARD FOR AA AND ICP

Laboratory: STL BALTIMORE

SDG No.: T07473

AA CRDL Standard Source: MALL

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	Initial True	Initial Found	Initial %R	Final Found	Final %R
Mercury	0.2	0.19	95.0					

EPA SW846

FORM 3
BLANKS

Laboratory: STL BALTIMORE

SDG No.: T07473

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.050	U	CV

EPA SW846

FORM 3
BLANKS

Laboratory: STL BALTIMORE

SDG No.: T07473

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury			0.1	U	0.1	U					CV

EPA SW846

FORM 5

SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER: T07473S

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix (soil/water): SOIL
% Solids for Sample: 24.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	2.4440		0.9652		2.01	73.6	N	CV

Comments:

EPA SW846

FORM 5

SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER: T07473SD

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix (soil/water): SOIL
% Solids for Sample: 24.5

7/26/00

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	2.3923		0.9652		2.00	71.4	N	CV

Comments:
MATRIX SPIKE DUPLICATE

EPA SW846

FORM 5B
POST-DIGEST SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER: T07473A

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix (soil/water): SOIL

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury		3.66		1.92		2.0	87.0		CV

Comments:

EPA SW846

FORM 6
DUPLICATES

LAB SAMPLE NUMBER: T07473D

Laboratory: STL BALTIMORE

SDG No.: T07473

Matrix (soil/water): SOIL

% Solids for Sample: 24.5

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury		0.9652		0.9249		4.3		CV

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: STL BALTIMORE

SDG No.: T07473

Solid LCS Source: ERA LOT 244

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				0.7	0.5		0.3	1.1	71.4

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: STL BALTIMORE

SDG No.: T07473

Solid LCS Source: MESS - 2

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				0.092 ~~0.1~~	0.075 ~~0.1~~				~~100.0~~ 81.5

Corrections JC 7/26/00

EPA SW846

FORM 10
METHOD DETECTION LIMITS

Laboratory: STL BALTIMORE

SDG No.: T07473

ICP ID Number:

Date: 09/01/99

Furnace AA ID Number: 4CV

Analyte	Wave-length (nm)	Back-ground	Reporting Limit (ug/L)	MDL (ug/L)	M
Mercury	253.70		0.2	0.1	CV

Comments:

EPA SW846

FORM 13
Preparation Log

Laboratory: STL BALTIMORE

SDG No.: T07473

Method: CV

LAB Sample No.	Preparation Date	Weight (gram)	Volume (ml)
LCSS	07/17/00	0.21	100
LCSSM	07/17/00	0.20	100
LCSW	07/17/00		100
PBS	07/17/00	0.20	100
T07473	07/17/00	0.81	100
T07473D	07/17/00	0.82	100
T07473S	07/17/00	0.81	100
T07473SD	07/17/00	0.82	100
T07474	07/17/00	0.70	100
T07475	07/17/00	0.68	100
T07476	07/17/00	0.62	100
T07477	07/17/00	0.65	100
T07478	07/17/00	0.66	100
T07479	07/17/00	0.54	100
T07480	07/17/00	0.55	100
T07481	07/17/00	0.47	100
T07482	07/17/00	0.44	100
T07483	07/17/00	0.45	100
T07484	07/17/00	0.48	100

EPA SW846

FORM 14
Analysis Run Log

Lab Name: STL BALTIMORE
SDG No.: T07473
Instrument ID Number: 4CV
Start Date: 07/17/00

Method: CV
End Date: 07/17/00

Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ICV	1.00	1743																X								
ICB	1.00	1745																X								
CCV1	1.00	1747																X								
CCB1	1.00	1749																X								
ZZZZZZ	1.00	1751																								
CCV2	1.00	1752																X								
CCB2	1.00	1754																X								
CRA	1.00	1756																X								
PBS	1.00	1758																X								
LCSW	1.00	1800																X								
LCSS	1.00	1801																X								
LCSSM	1.00	1803																X								
T07473	1.00	1805																X								
T07473D	1.00	1807																X								
T07473S	1.00	1809																X								
T07473SD	1.00	1811																X								
T07473A	1.00	1812																X								
CCV3	1.00	1814																X								
CCB3	1.00	1816																X								
T07474	1.00	1818																X								
T07475	1.00	1819																X								
T07476	1.00	1821																X								
T07477	1.00	1823																X								
T07478	1.00	1825																X								
T07479	1.00	1827																X								
T07480	1.00	1828																X								
T07481	1.00	1830																X								
T07482	1.00	1832																X								
T07483	1.00	1834																X								
CCV4	1.00	1836																X								
CCB4	1.00	1838																X								
T07484	1.00	1839																X								

EPA SW846

FORM 14
Analysis Run Log

Lab Name: STL BALTIMORE
SDG No.: T07473
Instrument ID Number: 4CV
Start Date: 07/17/00

Method: CV
End Date: 07/17/00

Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1841																								
ZZZZZZ	1.00	1843																								
ZZZZZZ	1.00	1845																								
ZZZZZZ	1.00	1847																								
ZZZZZZ	1.00	1848																								
ZZZZZZ	1.00	1850																								
ZZZZZZ	1.00	1852																								
ZZZZZZ	1.00	1854																								
ZZZZZZ	1.00	1855																X								
CCV5	1.00	1857																X								
CCB5	1.00	1859																								

Severn Trent Laboratories, Inc.
STL Baltimore

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package			
Report #: CCC814		Due Date: 7/15/00	
Prep Method (s)	Determinative Method(s)	Client/Project	Blank
STL-M- 7471	STL-M-	No. of Samples	12
STL-M-	STL-M-	Matrix	❑ W ❑ S ☑ Sed ❑ Tiss ❑ Wipe
STL-M-	STL-M-	Project Summary	STL-PS-

I **DATA PACKAGE REVIEW (Completed by Data Package Generator)**

1. Was the correct analysis performed & Project Summary followed?	☑ Yes	❑ No	❑ NCR#
2. Were all reported results bracketed by in control QC?	☑ Yes	❑ No	❑ NCR#
3. Was sample analyses performed within holding time?	☑ Yes	❑ No	❑ NCR#
4. Were samples with concentrations > the linear range for any parameter diluted and reanalyzed?	☑ Yes	❑ No	❑ NCR#
5. Are samples reported from a proper dilution?	☑ Yes	❑ No	❑ NCR#
6. LCS done per prep batch and within QC limits?	☑ Yes	❑ No	❑ NCR#
7. Method blank done per prep batch and < RL or CRDL (CLP)?	☑ Yes	❑ No	❑ NCR#
8. SD run at required frequency and RPD within QC limits?	☑ Yes	❑ No	❑ NCR#
9. MS run at required frequency and within limits?	❑ Yes	☑ No	❑ NCR#
10. MSD run at required frequency and RPD within QC limits?	❑ Yes	☑ No	❑ NCR#

Analyte	MS (%R)	MSD (%R)	RPD
Hg	73.6	Hg 71.4	

11. Was Serial Dilution Test performed per prep batch and within 10% for samples > 50x IDL (CLP) or >10X RL. (SW846)?	☑ Yes	❑ No	❑ NCR#
12. Was the analytical spike analyzed if required and acceptable?	☑ Yes	❑ No	❑ NCR#
13. Have calculations been checked for error?	☑ Yes	❑ No	❑ NCR#
14. Is sample calculation included in data package?	☑ Yes	❑ No	❑ NCR#
15. Date/time of analysis verified as correct?	☑ Yes	❑ No	❑ NCR#

Comments: T07479 Hg at 1822 on 7/17/00

4.0552 x 0.1 = 2.0429

0.5390 x 0.371

Form Initiated: May 18, 2000/mmu

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 000814

III DATA PACKAGE COMPLETENESS, AND NARRATIVE (Completed by Technical Reviewer)

1.	Are all required forms and raw data present?	☒ Yes	☐ No	☐ NCR#
2.	Are NCRs included in the report file and addressed in the narrative?	NR ☐ Yes	☐ No	☐ NCR#
3.	Is the report format consistent with **client** specifications?	☒ Yes	☐ No	☐ NCR#
4.	Are samples linked to appropriate QC (Prep) batch?	☒ Yes	☐ No	☐ NCR#
5.	Are sample IDs, units, matrices, dates, method IDs, and qualifiers correct?	☒ Yes	☐ No	☐ NCR#

Comments:

IV NOTES FOR ANALYTICAL NARRATIVE

(Completed by Data Generator and Technical Reviewer)

SAMPLE CHRONOLOGY

Prep: 7/17/00

Run: 7/17/00

METHOD PERFORMANCE SUMMARY

SAMPLE PERFORMANCE SUMMARY

MS/MSD (73.6, 71.4) 87.0 - PS

Severn Trent Laboratories, Inc.
STL Baltimore

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #:

V OVERALL ASSESSMENT OF DATA QUALITY (Completed by Supervisor)

1. Do spot-checked (minimum of 5%) data accurately reflect data?	☑ Yes	☐ No	☐ NCR#
2. Are all batch QC elements acceptable?	☑ Yes	☐ No	☐ NCR#
3. Is data package compliant with Method?	☑ Yes	☐ No	☐ NCR#
4. Is data package compliant with Project Summary	☑ Yes	☐ No	☐ NCR#
5. Is the "Narrative" complete and accurate per STL-SOP-305-?	☑ Yes	☐ No	☐ NCR#
6. Is the Narrative initialed and dated?	☑ Yes	☐ No	☐ NCR#

Comments:

DATA PACKAGE REVIEW (Signature):	**DATE:** 7-25-00
TECHNICAL REVIEW (Signature):	**DATE:** 7/26/00
SUPERVISOR REVIEW (Signature):	**DATE:** 7/26/00

Form Initiated: May 18, 2000/mmu

Company Name: USACE	Project Manager or Contact: Scott Chang Phone:
Project No. Ft. TOTTEN Dept.: Task:	Project Name: Ft. TOTTEN
Sample Storage Location: K6	ATO Number:
Page 1 of 1	Report #: 000819

Parameters/Method Numbers fc

Methods:
(a) Hg 7471
SAMPLES ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/25/00
LPM: NKS
PS-090

00 Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	HG (A)	TAL Metal	6010/7000 Series	Accession Number	Remarks
6/29	1015		X	4TB-SD-139-01	1	●	X		0007484 85	LPM:
	1020			4TB-SD-139-02	1	X			0007485 86	
	1025			4TB-SD-139-03	1	X			0007486 87	
	1030			4TB-SD-139-04	1	X			0007487 88	
	1035			4TB-SD-139-05	1	X			0007488 89	
	1035			4TB-SD-139-22	1	X			0007489 90	
	1040			4TB-SD-139-06	1	X			0007490 91	
	1045			4TB-SD-139-07	1	X			0007491 92	
	1050			4TB-SD-139-08	1	X			0007492 93	
	1055			4TB-SD-139-09	1	X			0007493 94	
	1100			4TB-SD-139-10	1	X			0007494 95	
	1105			4TB-SD-139-11	1	X			0007495 96	

COC0007399

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Joe Leise	6/30 1200	Joe Leise	6/30 1200	Fed EX	
Relinquished by: (Signature)	**Date/Time**	**Received by Laboratory: (Signature)**	**Date/Time**	**Airbill Number:**	**Sample Shipped by: (Circle)**
		[signature]	7/1/00 11:30	805411683450	Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp. 4 C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☒ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

STL BALTIMORE
ANALYTICAL NARRATIVE

QC Chemist: WCV 7/28/00

Date: 28 July 2000

File Name: GROUP\NAR\00814mt7.NAR

Client/Project: USACE / Ft. Totten

METALS - SOIL (STL0007485 - STL0007496)

Sample Chronology: Eleven samples were prepared by STL-M-7470A/1A-2 on 17 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 17 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

- The MS/MSD recovery (performed on sample LTB-SD-139-01) for mercury (71.5%, 70.0%) was below the QC limit of 75%, indicating a potential for negative bias to the sample data for this element. The post-digestion spike (83.0%) was within QC limits.

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T07485	LTBSD13901
T07485D	LTBSD13901D
T07485S	LTBSD13901S
T07486	LTBSD13902
T07487	LTBSD13903
T07488	LTBSD13904
T07489	LTBSD13905
T07490	LTBSD13922
T07491	LTBSD13906
T07492	LTBSD13907
T07493	LTBSD13908
T07494	LTBSD13909
T07495	LTBSD13910
T07496	LTBSD13911

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Wendy C VanMiddlesworth Name: Wendy C VanMiddlesworth

Date: 7/28/00 Title: Chemist III

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07485

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix: SEDIMENT

Client ID: LTBSD13901

Percent Solids: 27.6

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.0		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07486

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix: SEDIMENT

Client ID: LTBSD13902

Percent Solids: 50.1

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.7		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07487

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix: SEDIMENT Client ID: LTBSD13903

Percent Solids: 45.2 Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.76		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07488

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix: SEDIMENT Client ID: LTBSD13904

Percent Solids: 52.7 Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.66		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07489

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix: SEDIMENT

Client ID: LTBSD13905

Percent Solids: 42.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.6		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07490

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix: SEDIMENT

Client ID: LTBSD13922

Percent Solids: 48.9

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.0		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07491

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix: SEDIMENT Client ID: LTBSD13906

Percent Solids: 39.0 Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.0		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07492

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix: SEDIMENT

Client ID: LTBSD13907

Percent Solids: 49.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.9		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07493

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix: SEDIMENT Client ID: LTBSD13908

Percent Solids: 41.7 Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.2		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07494

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix: SEDIMENT

Client ID: LTBSD13909

Percent Solids: 51.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.8		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07495

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix: SEDIMENT

Client ID: LTBSD13910

Percent Solids: 60.7

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U	N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07496

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix: SEDIMENT

Client ID: LTBSD13911

Percent Solids: 60.2

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U	N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07486

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury	6.0	5.76	96.0	3.0	2.77	92.3	2.77	92.3	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07486

Initial Calibration Source:

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				3.0	2.70	90.0	2.67	89.0	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07486

Initial Calibration Source:

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				3.0	2.61	87.0	2.58	86.0	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07486

Initial Calibration Source:

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				3.0	2.54	84.7			CV

EPA SW846

FORM 2B
CRDL STANDARD FOR AA AND ICP

Laboratory: STL BALTIMORE

SDG No.: T07486

AA CRDL Standard Source: MALL

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Mercury	0.2	0.19	95.0					

EPA SW846

FORM 3
BLANKS

Laboratory: STL BALTIMORE

SDG No.: T07486

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.050	U	CV

EPA SW846

FORM 3
BLANKS

Laboratory: STL BALTIMORE

SDG No.: T07486

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury			0.1	U	0.1	U	0.1	U			CV

EPA SW846

FORM 3
BLANKS

Laboratory: STL BALTIMORE

SDG No.: T07486

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury			0.1	U							CV

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER: T07485S

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix (soil/water): SOIL
% Solids for Sample: 27.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	2.4642		1.0341		2.00	71.5	N	CV

Comments:

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER

T07485SD

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix (soil/water): SOIL
% Solids for Sample: 27.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	2.4335		1.0341		2.00	70.0	N	CV

Comments:
MATRIX SPIKE DUPLICATE

EPA SW846

FORM 5B
POST DIGEST SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER: T07485A

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix (soil/water): SOIL

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury		3.74		2.08		2.0	83.0		CV

Comments:

EPA SW846

FORM 6
DUPLICATES

LAB SAMPLE NUMBER T07485D

Laboratory: STL BALTIMORE

SDG No.: T07486

Matrix (soil/water): SOIL

% Solids for Sample: 27.6

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury		1.0341		1.0331		0.1		CV

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: STL BALTIMORE

SDG No.: T07486

Solid LCS Source: ERA LOT 244

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				0.7	0.5		0.3	1.1	71.4

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: STL BALTIMORE

SDG No.: T07486

Solid LCS Source: MESS - 2

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				~~0.1~~ 0.092	~~0.1~~ 0.071				~~100.0~~ 77.2

Corrections JW 7/28/00

EPA SW846

FORM 10
METHOD DETECTION LIMITS

Laboratory: STL BALTIMORE

SDG No.: T07486

ICP ID Number:

Date: 09/01/99

Furnace AA ID Number: 4CV

Analyte	Wave-length (nm)	Back-ground	Reporting Limit (ug/L)	MDL (ug/L)	M
Mercury	253.70		0.2	0.1	CV

Comments:

EPA SW846

FORM 13
Preparation Log

Laboratory: STL BALTIMORE

SDG No.: T07486

Method: CV

LAB Sample No.	Preparation Date	Weight (gram)	Volume (ml)
LCSS	07/17/00	0.20	100
LCSSM	07/17/00	0.20	100
LCSW	07/17/00	0.20	100
PBS	07/17/00	0.20	100
T07485	07/17/00	0.73	100
T07485D	07/17/00	0.72	100
T07485S	07/17/00	0.72	100
T07485SD	07/17/00	0.73	100
T07486	07/17/00	0.40	100
T07487	07/17/00	0.44	100
T07488	07/17/00	0.38	100
T07489	07/17/00	0.47	100
T07490	07/17/00	0.41	100
T07491	07/17/00	0.51	100
T07492	07/17/00	0.41	100
T07493	07/17/00	0.48	100
T07494	07/17/00	0.39	100
T07495	07/17/00	0.32	100
T07496	07/17/00	0.33	100

EPA SW846

FORM 14
Analysis Run Log

Lab Name: STL BALTIMORE
SDG No.: T07486
Instrument ID Number: 4CV
Start Date: 07/17/00

Method: CV
End Date: 07/17/00

Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ICV	1.00	1743																X								
ICB	1.00	1745																X								
CCV1	1.00	1747																X								
CCB1	1.00	1749																X								
ZZZZZZ	1.00	1751																								
CCV2	1.00	1752																X								
CCB2	1.00	1754																X								
CRA	1.00	1756																X								
ZZZZZZ	1.00	1758																								
ZZZZZZ	1.00	1800																								
ZZZZZZ	1.00	1801																								
ZZZZZZ	1.00	1803																								
ZZZZZZ	1.00	1805																								
ZZZZZZ	1.00	1807																								
ZZZZZZ	1.00	1809																								
ZZZZZZ	1.00	1811																								
ZZZZZZ	1.00	1812																								
CCV3	1.00	1814																X								
CCB3	1.00	1816																X								
ZZZZZZ	1.00	1818																								
ZZZZZZ	1.00	1819																								
ZZZZZZ	1.00	1821																								
ZZZZZZ	1.00	1823																								
ZZZZZZ	1.00	1825																								
ZZZZZZ	1.00	1827																								
ZZZZZZ	1.00	1828																								
ZZZZZZ	1.00	1830																								
ZZZZZZ	1.00	1832																								
ZZZZZZ	1.00	1834																								
CCV4	1.00	1836																X								
CCB4	1.00	1838																X								
ZZZZZZ	1.00	1839																								

EPA SW846

FORM 14
Analysis Run Log

Lab Name: STL BALTIMORE
SDG No.: T07486
Instrument ID Number: 4CV
Start Date: 07/17/00

Method: CV
End Date: 07/17/00

Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
PBS	1.00	1841																X								
LCSW	1.00	1843																X								
LCSS	1.00	1845																X								
LCSSM	1.00	1847																X								
T07485	1.00	1848																X								
T07485D	1.00	1850																X								
T07485S	1.00	1852																X								
T07485SD	1.00	1854																X								
T07485A	1.00	1855																X								
CCV5	1.00	1857																X								
CCB5	1.00	1859																X								
T07486	1.00	1901																X								
T07487	1.00	1903																X								
T07488	1.00	1904																X								
T07489	1.00	1906																X								
T07490	1.00	1908																X								
T07491	1.00	1910																X								
T07492	1.00	1912																X								
T07493	1.00	1913																X								
T07494	1.00	1915																X								
T07495	1.00	1917																X								
CCV6	1.00	1919																X								
CCB6	1.00	1921																X								
T07496	1.00	1923																X								
ZZZZZZ	1.00	1924																								
ZZZZZZ	1.00	1926																								
ZZZZZZ	1.00	1928																								
ZZZZZZ	1.00	1930																								
ZZZZZZ	1.00	1931																								
ZZZZZZ	1.00	1933																								
ZZZZZZ	1.00	1935																								
ZZZZZZ	1.00	1937																								

EPA SW846

FORM 14
Analysis Run Log

Lab Name: STL BALTIMORE
SDG No.: T07486
Instrument ID Number: 4CV
Start Date: 07/17/00

Method: CV
End Date: 07/17/00

Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1938																												
CCV7	1.00	1940																X												
CCB7	1.00	1942																X												

CLP REPORT DATA ENTRY SUMMARY

SDG: T07486 SAMPLES: T07486-96.

MATRIX: soil (sediment) METHOD: 4ws46.

RUNS

1) CV4975-Hg

2)

3)

4)

5)

6)

7)

8)

9)

10)

11)

12)

13)

14)

15)

16)

17)

18)

19)

20)

21)

22)

CHECKLIST

(7) KILL
REPLACE Pb TEST CODE
TRIM 7P
SORT
ICP: WTS
VOL
PREP DATE
BATCH

FUR: WTS
VOL
PREP DATE
BATCH

HG: WTS
VOL
PREP DATE
BATCH

SAMPLE IDs

CCV\B_____A CCV/B_____ F
CCV\B_____B CCV/B_____ G
CCV\B_____C CCV/B_____ H
CCV\B_____D CCV/B_____ I
CCV\B_____E CCV/B_____ J

CRII\CRIF _____.
ICSAI\ICSABI _____.
ICSAF\ICSABF_____.
ICSAFB\ICSABFB_____.

PBW _____ PBS _____.
LCSW _____ LCSS _____.
_____ D, S, MSD, P
_____ D, S, MSD, P
_____ L

Severn Trent Laboratories, Inc.
STL Baltimore

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package			
Report #: 000514		Due Date: 7/15/00	
Prep Method (s)	Determinative Method(s)	Client/Project	Keyes
STL-M- 7471	STL-M-	No. of Samples	11
STL-M-	STL-M-	Matrix	❑ W ❑ S ☑ Sed ❑ Tiss ❑ Wipe
STL-M-	STL-M-	Project Summary	STL-PS- 90

I DATA PACKAGE REVIEW (Completed by Data Package Generator)

1. Was the correct analysis performed & Project Summary followed?	☑ Yes	❑ No	❑ NCR#
2. Were all reported results bracketed by in control QC?	☑ Yes	❑ No	❑ NCR#
3. Was sample analyses performed within holding time?	☑ Yes	❑ No	❑ NCR#
4. Were samples with concentrations > the linear range for any parameter diluted and reanalyzed?	☑ Yes	❑ No	❑ NCR#
5. Are samples reported from a proper dilution?	☑ Yes	❑ No	❑ NCR#
6. LCS done per prep batch and within QC limits?	☑ Yes	❑ No	❑ NCR#
7. Method blank done per prep batch and < RL or CRDL (CLP)?	☑ Yes	❑ No	❑ NCR#
8. SD run at required frequency and RPD within QC limits?	☑ Yes	❑ No	❑ NCR# N/A
9. MS run at required frequency and within limits?	❑ Yes	❑ No	❑ NCR#
10. MSD run at required frequency and RPD within QC limits?	❑ Yes	❑ No	❑ NCR#

Analyte	MS (%R)	MSD (%R)	RPD
Hg	71.5	70.0	

11. Was Serial Dilution Test performed per prep batch and within 10% for samples > 50x IDL (CLP) or >10X RL. (SW846)?	❑ Yes	❑ No	❑ NCR# N/A
12. Was the analytical spike analyzed if required and acceptable?	☑ Yes	❑ No	❑ NCR#
13. Have calculations been checked for error?	☑ Yes	❑ No	❑ NCR#
14. Is sample calculation included in data package?	❑ Yes	☑ No	❑ NCR#
15. Date/time of analysis verified as correct?	☑ Yes	❑ No	❑ NCR#

Comments: _____

Form Initiated: May 18, 2000/mmu

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 00804

III DATA PACKAGE COMPLETENESS, AND NARRATIVE (Completed by Technical Reviewer)

1.	Are all required forms and raw data present?	☑ Yes	☐ No	☐ NCR#
2.	Are NCRs included in the report file and addressed in the narrative?	☑ Yes	☐ No	☐ NCR#
3.	Is the report format consistent with **client** specifications?	☑ Yes	☐ No	☐ NCR#
4.	Are samples linked to appropriate QC (Prep) batch?	☑ Yes	☐ No	☐ NCR#
5.	Are sample IDs, units, matrices, dates, method IDs, and qualifiers correct?	☑ Yes	☐ No	☐ NCR#

Comments:

IV NOTES FOR ANALYTICAL NARRATIVE

(Completed by Data Generator and Technical Reviewer)

SAMPLE CHRONOLOGY

sample prep date 7/17/00
& analysis 7/17/00

METHOD PERFORMANCE SUMMARY

SAMPLE PERFORMANCE SUMMARY

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 00814

V OVERALL ASSESSMENT OF DATA QUALITY (Completed by Supervisor)

1. Do spot-checked (minimum of 5%) data accurately reflect data?	☑ Yes	☐ No	☐ NCR#
2. Are all batch QC elements acceptable?	☑ Yes	☐ No	☐ NCR#
3. Is data package compliant with Method?	☑ Yes	☐ No	☐ NCR#
4. Is data package compliant with Project Summary	☑ Yes	☐ No	☐ NCR#
5. Is the "Narrative" complete and accurate per STL-SOP-305-?	☑ Yes	☐ No	☐ NCR#
6. Is the Narrative initialed and dated?	☑ Yes	☐ No	☐ NCR#

Comments:

DATA PACKAGE REVIEW (Signature):	DATE:
John Massey	7-25-00
TECHNICAL REVIEW (Signature):	**DATE:**
Wendy C. VanMiddlesworth	7/28/00
SUPERVISOR REVIEW (Signature):	**DATE:**
Wendy C. VanMiddlesworth	7/28/00

Form Initiated: May 18, 2000/mmu

(8)(6)

Company Name: USACE	Project Manager or Contact: Scott Chang Phone:
Project No. Ft. TOTTEN Dept.: Task:	Project Name: Ft. TOTTEN
Sample Storage Location: K6	ATO Number:
Page 1 of 1	Report #: 00084

Parameters/Method Numbers for A

Methods:
(a) Hg 7471
SAMPLES ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/25/00
LPM: NKS
PS-090

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	HG (A)	EA Labs Accession Number	Remarks
6/30	0830		X	4TB-SD-1Y3-01	1	X	0007508	9 LPM:
	0835			4TB-SD-1Y3-02	1	X	0007509	10
	0840			4TB-SD-1Y3-03	1	X	0007510	11
	0845			4TB-SD-1Y3-04	1	X	0007511	12
	0850			4TB-SD-1Y3-05	1	X	0007512	13
	0855			4TB-SD-1Y3-06	1	X	0007513	14
	0900			4TB-SD-1Y3-07	1	X	0007514	15
	0905			4TB-SD-1Y3-08	1	X	0007515	16
	0910			4TB-SD-1Y3-22	1	X	0007516	17
	0920			4TB-SD-1Y3-09	1	X	0007517	18
	0925			4TB-SD-1Y3-10	1	X	0007518	19
	0930			4TB-SD-1Y3-11	1	X	0007519	20

COC0007399

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
J. Lewis	6/30 1800	J. Lewis	6/30 1800	Fed EX	
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		Phyllis Easter	7/1/00 1130	805411683450	Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp. 4 C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☒ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager Shaded Areas for Lab Use Only

STL BALTIMORE
ANALYTICAL NARRATIVE

QC Chemist: JSK 7/24/00

Date: 24 July 2000

File Name: GROUP\NAR\00814mt3.NAR

Client/Project: USACE / Ft. Totten

METALS - SOIL (STL0007509 - STL0007520)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 19 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 20 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

- The MSD recovery (performed on sample LTB-SD-143-01) for mercury (70.7%) was below the QC limit of 75%, indicating a potential for negative bias to the sample data for this element.

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory ST LABORATORIES

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T07509	LTB-SD-143-01
T07509D	LTB-SD-143-01D
T07509S	LTB-SD-143-01S
T07510	LTB-SD-143-02
T07511	LTB-SD-143-03
T07512	LTB-SD-143-04
T07513	LTB-SD-143-05
T07514	LTB-SD-143-06
T07515	LTB-SD-143-07
T07516	LTB-SD-143-08
T07517	LTB-SD-143-22
T07518	LTB-SD-143-09
T07519	LTB-SD-143-10
T07520	LTB-SD-143-11

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirnon Name: Judy S Kirnon

Date: 24 July 2000 Title: LAB TECHNICIAN

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07509

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix: SEDIMENT

Client ID: LTB-SD-143-01 JHY 7/21/00

Percent Solids: 24.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.98		N JHY 7/24/00	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07510

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix: SEDIMENT

Client ID: LTB-SD-143-02 JW 7/21/00

Percent Solids: 25.5

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.81		N	CV

JW 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07511

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix: SEDIMENT

Client ID: LTB-SD-143-03 JW 7/21/00

Percent Solids: 28.0

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.0		N	CV

JW 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07512

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix: SEDIMENT

Client ID: LTB-SD-143-04

Percent Solids: 31.9

Date Received: 07/01/00

7/21/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.4		N	CV

7/24/02

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07513

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix: SEDIMENT

Client ID: LTB-SD-143-05 JH 7/21/00

Percent Solids: 25.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.99		N	CV

JC 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07514

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix: SEDIMENT

Client ID: LTB-SD-143-06 JW 7/21/00

Percent Solids: 32.1

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.4		N	CV

JW 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07515

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix: SEDIMENT

Client ID: LTB-SD-143-07

Percent Solids: 35.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.1		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07516

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix: SEDIMENT

Client ID: LTB-SD-143-08 JH 7/21/00

Percent Solids: 34.2

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.0		N	CV

JH 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07517

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix: SEDIMENT Client ID: LTB-SD-143 JR 7/21/00

Percent Solids: 36.4 Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.0		N	CV

JR 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07518

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix: SEDIMENT

Client ID: LTB-SD-143-09 JW 7/21/00

Percent Solids: 32.2

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.2		N	CV

JW 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07519

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix: SEDIMENT

Client ID: LTB-SD-143-10 JW 7/21/00

Percent Solids: 37.5

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.3		N	CV

JC 7/21/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07520

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix: SEDIMENT

Client ID: LTB-SD-143-11 JW 7/21/00

Percent Solids: 41.0

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.5		N	CV

JF 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: ST LABORATORIES

SDG No.:T07509

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury	6.0	5.60	93.3	3.0	2.78	92.7	2.76	92.0	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: ST LABORATORIES

SDG No.:T07509

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Mercury				3.0	2.74	91.3	2.72	90.7	CV

EPA SW846

FORM 2B
CRDL STANDARD FOR AA AND ICP

Laboratory: ST LABORATORIES

SDG No.: T07509

AA CRDL Standard Source: MALL

ICP CRDL Standard Source: IV

Concentration Units: ug/L

JW 7/21/00

Analyte	CRDL Standard for ~~AA~~ LLCCV			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Mercury	0.2	0.17	85.0					

EPA SW846

FORM 3
BLANKS

Laboratory: ST LABORATORIES

SDG No.: T07509

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.050	U	CV

EPA SW846

FORM 3
BLANKS

Laboratory: ST LABORATORIES

SDG No.: T07509

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury			0.1	U							CV

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER T07509S

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix (soil/water): SOIL
% Solids for Sample: 24.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	2.7070		0.9776		2.00	86.5		CV

Comments:

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER T07509SD

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix (soil/water): SOIL
% Solids for Sample: 24.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	2.3922		0.9776		2.00	70.7	N	CV

7/21/00

Comments: matrix spike duplicate

FORM 5

EPA SW846

FORM 5B
POST DIGEST SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER T07509A

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix (soil/water): SOIL

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury		3.81		1.96		2.0	92.5		CV

Comments:

EPA SW846

FORM 6
DUPLICATES

LAB SAMPLE NUMBER T07509D

Laboratory: ST LABORATORIES

SDG No.: T07509

Matrix (soil/water): SOIL

% Solids for Sample: 24.3

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury		0.9776		0.8927		9.1		CV

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: ST LABORATORIES

SDG No.: T07509

Solid LCS Source: ERA LOT 244

Aqueous LCS Source: IV

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				0.7	0.5		0.3	1.1	71.4

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: ST LABORATORIES

SDG No.: T07509

Solid LCS Source: MESS-2

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				~~0.1~~ 0.092	0.1 ~~0.132~~				~~100.0~~ 143.5

Corrections JW 7/21/00

EPA SW846

FORM 10
METHOD DETECTION LIMITS

Laboratory: ST LABORATORIES

SDG No.: T07509

ICP ID Number:

Date: 09/01/99

Furnace AA ID Number: 4CV

Analyte	Wave-length (nm)	Back-ground	Reporting Limit (ug/L)	MDL (ug/L)	M
Mercury	253.70		0.2	0.1	CV

Comments:

EPA SW846

FORM 13
Preparation Log

Laboratory: ST LABORATORIES

SDG No.: T07509

Method: CV

LAB Sample No.	Preparation Date	Weight (gram)	Volume (ml)
LCSM	07/19/00	0.21	100
LCSS	07/19/00	0.21	100
LCSW	07/19/00		100
PBS	07/19/00	0.20	100
T07509	07/19/00	0.82	100
T07509D	07/19/00	0.82	100
T07509S	07/19/00	0.82	100
T07509SD	07/19/00	0.82	100
T07510	07/19/00	0.79	100
T07511	07/19/00	0.72	100
T07512	07/19/00	0.63	100
T07513	07/19/00	0.79	100
T07514	07/19/00	0.62	100
T07515	07/19/00	0.57	100
T07516	07/19/00	0.58	100
T07517	07/19/00	0.55	100
T07518	07/19/00	0.62	100
T07519	07/19/00	0.53	100
T07520	07/19/00	0.49	100

7/24/00

EPA SW846

FORM 14
Analysis Run Log

Lab Name: ST LABORATORIES
SDG No.: T07509
Instrument ID Number: 4CV
Start Date: 07/20/00

Method: CV
End Date: 07/20/00

Sample No.	D/F	Time	%R	Analytes																													
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ICV	1.00	1237																X								
ICB	1.00	1238																X								
CCV1	1.00	1240																X								
CCB1	1.00	1242																X								
CRA	1.00	1244																X								
PBS	1.00	1246																X								
LCSW	1.00	1247																X								
LCSS	1.00	1249																X								
LCSM	1.00	1251																X								
T07509	1.00	1253																X								
T07509D	1.00	1255																X								
T07509S	1.00	1257																X								
T07509SD	1.00	1258																X								
T07509A	1.00	1300																X								
CCV2	1.00	1302																X								
CCB2	1.00	1304																X								
T07510	1.00	1306																X								
T07511	1.00	1307																X								
T07512	1.00	1309																X								
T07513	1.00	1311																X								
T07514	1.00	1313																X								
T07515	1.00	1314																X								
T07516	1.00	1316																X								
T07517	1.00	1318																X								
T07518	1.00	1320																X								
T07519	1.00	1322																X								
CCV3	1.00	1324																X								
CCB3	1.00	1325																X								
T07520	1.00	1327																X								
ZZZZZZ	1.00	1329																								
ZZZZZZ	1.00	1331																								
ZZZZZZ	1.00	1333																								

EPA SW846

FORM 14
Analysis Run Log

Lab Name: ST LABORATORIES
SDG No.: T07509
Instrument ID Number: 4CV
Start Date: 07/20/00

Method: CV
End Date: 07/20/00

Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1334																									
ZZZZZZ	1.00	1336																									
ZZZZZZ	1.00	1338																									
ZZZZZZ	1.00	1340																									
ZZZZZZ	1.00	1341																									
CCV4	1.00	1343																X									
CCB4	1.00	1345																X									

STL Baltimore

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package			
Report #: 0084		Due Date: 7/25/00	
Prep Method (s)	Determinative Method(s)	Client/Project	USACE / FT TOTTEN
STL-M-7470A/1A-2	STL-M-7470A/1A-2	No. of Samples	12
STL-M-	STL-M-	Matrix	☐ W ☐ S ☑ Sed ☐ Tiss ☐ Wipe
STL-M-	STL-M-	Project Summary	STL-PS-090

I **DATA PACKAGE REVIEW (Completed by Data Package Generator)**

1.	Was the correct analysis performed & Project Summary followed?	☑ Yes	☐ No	☐ NCR#
2.	Were all reported results bracketed by in control QC?	☑ Yes	☐ No	☐ NCR#
3.	Was sample analyses performed within holding time?	☑ Yes	☐ No	☐ NCR#
4.	Were samples with concentrations > the linear range for any parameter diluted and reanalyzed?	☐ Yes	☐ No	☐ NCR# NA
5.	Are samples reported from a proper dilution?	☑ Yes	☐ No	☐ NCR#
6.	LCS done per prep batch and within QC limits?	☑ Yes	☐ No	☐ NCR#
7.	Method blank done per prep batch and < RL or CRDL (CLP)?	☑ Yes	☐ No	☐ NCR#
8.	SD run at required frequency and RPD within QC limits?	☑ Yes	☐ No	☐ NCR#
9.	MS run at required frequency and within limits?	☑ Yes	☐ No	☐ NCR#
10.	MSD run at required frequency and RPD within QC limits?	☐ Yes	☑ No	☐ NCR#

Analyte	MS (%R)	MSD (%R)	RPD
Hg		70.7 %	

11.	Was Serial Dilution Test performed per prep batch and within 10% for samples > 50x IDL (CLP) or >10X RL. (SW846)?	☐ Yes	☐ No	☐ NCR# NA
12.	Was the analytical spike analyzed if required and acceptable?	☐ Yes	☐ No	☐ NCR# NR
13.	Have calculations been checked for error?	☑ Yes	☐ No	☐ NCR#
14.	Is sample calculation included in data package?	☑ Yes	☐ No	☐ NCR#
15.	Date/time of analysis verified as correct?	☑ Yes	☐ No	☐ NCR#

Comments:

sample calculation

T07520 4.9235 x 0.1 ÷ 0.4858 ÷ .4098 = 2.4731 (2.5 mg/kg)

sample conc vol weight % solids

Form Initiated: May 18, 2000/mmu

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 0084

III DATA PACKAGE COMPLETENESS, AND NARRATIVE (Completed by Technical Reviewer)

1.	Are all required forms and raw data present?	☑ Yes	☐ No	☐ NCR#
2.	Are NCRs included in the report file and addressed in the narrative?	NR ☐ Yes	☐ No	☐ NCR#
3.	Is the report format consistent with **client** specifications?	☑ Yes	☐ No	☐ NCR#
4.	Are samples linked to appropriate QC (Prep) batch?	☑ Yes	☐ No	☐ NCR#
5.	Are sample IDs, units, matrices, dates, method IDs, and qualifiers correct?	☑ Yes	☐ No	☐ NCR#

Comments:

IV NOTES FOR ANALYTICAL NARRATIVE

(Completed by Data Generator and Technical Reviewer)

SAMPLE CHRONOLOGY

Prep 7/19/00

Run 7/20/00

METHOD PERFORMANCE SUMMARY

SAMPLE PERFORMANCE SUMMARY

MSD 70.7%

Form Initiated: May 18, 2000/mmu

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 00814

V OVERALL ASSESSMENT OF DATA QUALITY (Completed by Supervisor)

1. Do spot-checked (minimum of 5%) data accurately reflect data?	☑ Yes	☐ No	☐ NCR#
2. Are all batch QC elements acceptable?	☑ Yes	☐ No	☐ NCR#
3. Is data package compliant with Method?	☑ Yes	☐ No	☐ NCR#
4. Is data package compliant with Project Summary	☑ Yes	☐ No	☐ NCR#
5. Is the "Narrative" complete and accurate per STL-SOP-305-?	☑ Yes	☐ No	☐ NCR#
6. Is the Narrative initialed and dated?	☑ Yes	☐ No	☐ NCR#

Comments:

DATA PACKAGE REVIEW (Signature): Wendy C VanMiddlesworth	**DATE:** 7/21/00
TECHNICAL REVIEW (Signature): Judy L Kinnon	**DATE:** 7/24/00
SUPERVISOR REVIEW (Signature): Judy L Kinnon	**DATE:** 7/24/00

Form Initiated: May 18, 2000/mmu

3 (5)

Company Name: USACE	Project Manager or Contact: Scott Chang
Project No. Ft. TOTTEN	Phone:
Dept.: Task:	Project Name: Ft. TOTTEN
Sample Storage Location: K6	ATO Number:
Page 1 of 1	Report #: 000814

Parameters/Method Numbers for A

Methods:
(a) Hg 7471
SAMPLES ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/25/00
LPM: NKS
PS-090

Date (00)	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	HG (A)	TAL Metal	6010/7000 8110	Number	Remarks
6/29	0900		X	4TB-SD-144-01	1	X	X		0007496	LPM:
	0910			4TB-SD-144-02	1	X			0007497	98
	0915			4TB-SD-144-03	1	X			0007498	99
	0915			4TB-SD-144-22	1	X			0007499	500
	0920			4TB-SD-144-04	1	X			0007500	01
	0925			4TB-SD-144-05	1	X			0007501	02
	0930			4TB-SD-144-06	1	X			0007502	03
	0935			4TB-SD-144-07	1	X			0007503	04
	0940			4TB-SD-144-08	1	X			0007504	05
	0945			4TB-SD-144-09	1	X			0007505	06
	0950			4TB-SD-144-10	1	X			0007506	07
	0955			4TB-SD-144-11	1	X			0007507	08 96402

COC0007399

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	6/30 1000	Joe Leice	6/30 1100	FED EX	
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		[signature]	7/1/00 11:30	305411683450	Fed Ex Puro. UPS Hand Carried Other:

Cooler Temp. 4 C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☒ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

STL BALTIMORE
ANALYTICAL NARRATIVE

QC Chemist: JSK 7/28/00

Date: 28 July 2000

File Name: GROUP\NAR\00814mt8.NAR

Client/Project: USACE / Ft. Totten

METALS - SOIL (STL0007498 - STL0007508)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 17 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 17 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

- The MS/MSD recovery (performed on sample LTB-SD-144-01) for mercury (73.0%, 72.7%) was below the QC limit of 75%, indicating a potential for negative bias to the sample data for this element. The post-digestion spike (82.5%) was within QC limits.

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T07497	LTBSD14401
T07497D	LTBSD14401D)
T07497S	LTBSD14401S) 7/28/00
T07498	LTBSD14402
T07499	LTBSD14403
T07500	LTBSD17722
T07501	LTBSD17704
T07502	LTBSD17705
T07503	LTBSD17706
T07504	LTBSD17707
T07505	LTBSD17708
T07506	LTBSD17709
T07507	LTBSD17710
T07508	LTBSD17711

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirnon Name: Judy S. Kirnon

Date: 28 July 2000 Title: LAB TECHNICIAN

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07497

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix: SEDIMENT

Client ID: LTBSD14401

Percent Solids: 28.8

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.92		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07498

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix: SEDIMENT

Client ID: LTBSD14402

Percent Solids: 56.1

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.92		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07499

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix: SEDIMENT

Client ID: LTBSD14403

Percent Solids: 32.8

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.9		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T07497	LTBSD14401
T07497D	LTBSD14401D
T07497S	LTBSD14401S
T07498	LTBSD14402
T07499	LTBSD14403
T07500	LTBSD1~~7722~~ 4422
T07501	LTBSD1~~7704~~ 4404
T07502	LTBSD1~~7705~~ 4405
T07503	LTBSD1~~7706~~ 4406
T07504	LTBSD1~~7707~~ 4407
T07505	LTBSD1~~7708~~ 4408
T07506	LTBSD1~~7709~~ 4409
T07507	LTBSD1~~7710~~ 4410
T07508	LTBSD1~~7711~~ 4411

7/28/00

7/27/01

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kiernan Name: JUDY S. KIERNAN

Date: 28 July 2000 Title: LAB TECHNICIAN

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07500

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix: SEDIMENT

Client ID: LTBSD1~~7722~~ 4422

Percent Solids: 35.2

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.2		N	CV

M - "P" ICP SW6010
M - "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M - "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07501

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix: SEDIMENT

Client ID: LTBSD1~~7704~~ 4404

Percent Solids: 63.9

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.71		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07502

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix: SEDIMENT

Client ID: LTBSD1~~7705~~ 4405 4D 12/19/01

Percent Solids: 42.6

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.1		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07503

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix: SEDIMENT

Client ID: LTBSD1~~9706~~ 4406 4D 2/7/01

Percent Solids: 62.7

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.53		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07504

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix: SEDIMENT

Client ID: LTBSD1~~7707~~ 4407 4D 21401

Percent Solids: 43.1

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.1		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

LAB SAMPLE NUMBER

T07505

FORM 1
METALS ANALYSIS DATA SHEET

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix: SEDIMENT

Client ID: LTBSD1~~7708~~ 4408 400 2/7/01

Percent Solids: 44.9

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.1		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07506

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix: SEDIMENT

Client ID: LTBSD1~~7709~~ 4409

Percent Solids: 51.9

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.3		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07507

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix: SEDIMENT

Client ID: LTBSD1~~7710~~4410 2/7/01

Percent Solids: 70.6

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.36		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

LAB SAMPLE NUMBER T07508

FORM 1
METALS ANALYSIS DATA SHEET

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix: SEDIMENT

Client ID: LTBSD17~~711~~ 4411

Percent Solids: 57.6

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U	N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07498

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury	6.0	5.76	96.0	3.0	2.77	92.3	2.77	92.3	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07498

Initial Calibration Source:

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Mercury				3.0	2.70	90.0	2.67	89.0	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07498

Initial Calibration Source:

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Mercury				3.0	2.61	87.0	2.58	86.0	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07498

Initial Calibration Source:

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Mercury				3.0	2.54	84.7	2.47	82.3	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07498

Initial Calibration Source:

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				3.0	2.44	81.3			CV

EPA SW846

FORM 2B
CRDL STANDARD FOR AA AND ICP

Laboratory: STL BALTIMORE

SDG No.: T07498

AA CRDL Standard Source: MALL

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Mercury	0.2	0.19	95.0					

EPA SW846

FORM 3
BLANKS

Laboratory: STL BALTIMORE

SDG No.: T07498

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.050	U	CV

EPA SW846

FORM 3
BLANKS

Laboratory: STL BALTIMORE

SDG No.: T07498

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury			0.1	U	0.1	U	0.1	U			CV

EPA SW846

FORM 3
BLANKS

Laboratory: STL BALTIMORE

SDG No.: T07498

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units (ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury			0.1	U	0.1	U	0.1	U			CV

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER: T07497S

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix (soil/water): SOIL
% Solids for Sample: 28.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	2.3829		0.9226		2.00	73.0	N	CV

Comments:

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER T07497SD

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix (soil/water): SOIL
% Solids for Sample: 28.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	2.3771		0.9226		2.00	72.7	N	CV

Comments:
MATRIX SPIKE DUPLICATE

EPA SW846

FORM 5B
POST DIGEST SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER: T07497A

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix (soil/water): SOIL

Concentration Units: ug/L

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury		3.49		1.84		2.0	82.5		CV

Comments:

EPA SW846

FORM 6
DUPLICATES

LAB SAMPLE NUMBER: T07497D

Laboratory: STL BALTIMORE

SDG No.: T07498

Matrix (soil/water): SOIL

% Solids for Sample: 28.8

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury		0.9226		0.9118		1.2		CV

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: STL BALTIMORE

SDG No.: T07498

Solid LCS Source: ERA LOT 244

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				0.7	0.5		0.3	1.1	71.4

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: STL BALTIMORE

SDG No.: T07498

Solid LCS Source: MESS - 2

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				~~0.092~~ 0.1	~~0.066~~ 0.1				~~100.0~~ 72.2

Corrections:
7/28/00

EPA SW846

FORM 10
METHOD DETECTION LIMITS

Laboratory: STL BALTIMORE

SDG No.: T07498

ICP ID Number:

Date: 09/01/99

Furnace AA ID Number: 4CV

Analyte	Wave-length (nm)	Back-ground	Reporting Limit (ug/L)	MDL (ug/L)	M
Mercury	253.70		0.2	0.1	CV

Comments:

EPA SW846

FORM 13
Preparation Log

Laboratory: STL BALTIMORE

SDG No.: T07498

Method: CV

LAB Sample No.	Preparation Date	Weight (gram)	Volume (ml)
LCSS	07/17/00	0.20	100
LCSSM	07/17/00	0.20	100
LCSW	07/17/00		100
PBS	07/17/00	0.20	100
T07497	07/17/00	0.69	100
T07497D	07/17/00	0.69	100
T07497S	07/17/00	0.69	100
T07497SD	07/17/00	0.69	100
T07498	07/17/00	0.36	100
T07499	07/17/00	0.61	100
T07500	07/17/00	0.57	100
T07501	07/17/00	0.31	100
T07502	07/17/00	0.47	100
T07503	07/17/00	0.32	100
T07504	07/17/00	0.47	100
T07505	07/17/00	0.45	100
T07506	07/17/00	0.39	100
T07507	07/17/00	0.29	100
T07508	07/17/00	0.35	100

EPA SW846

FORM 14
Analysis Run Log

Lab Name: STL BALTIMORE
SDG No.: T07498
Instrument ID Number: 4CV
Start Date: 07/17/00

Method: CV
End Date: 07/17/00

Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ICV	1.00	1743																X									
ICB	1.00	1745																X									
CCV1	1.00	1747																X									
CCB1	1.00	1749																X									
ZZZZZZ	1.00	1751																									
CCV2	1.00	1752																X									
CCB2	1.00	1754																X									
CRA	1.00	1756																X									
ZZZZZZ	1.00	1758																									
ZZZZZZ	1.00	1800																									
ZZZZZZ	1.00	1801																									
ZZZZZZ	1.00	1803																									
ZZZZZZ	1.00	1805																									
ZZZZZZ	1.00	1807																									
ZZZZZZ	1.00	1809																									
ZZZZZZ	1.00	1811																									
ZZZZZZ	1.00	1812																									
CCV3	1.00	1814																X									
CCB3	1.00	1816																X									
ZZZZZZ	1.00	1818																									
ZZZZZZ	1.00	1819																									
ZZZZZZ	1.00	1821																									
ZZZZZZ	1.00	1823																									
ZZZZZZ	1.00	1825																									
ZZZZZZ	1.00	1827																									
ZZZZZZ	1.00	1828																									
ZZZZZZ	1.00	1830																									
ZZZZZZ	1.00	1832																									
ZZZZZZ	1.00	1834																									
CCV4	1.00	1836																X									
CCB4	1.00	1838																X									
ZZZZZZ	1.00	1839																									

EPA SW846

FORM 14
Analysis Run Log

Lab Name: STL BALTIMORE
SDG No.: T07498
Instrument ID Number: 4CV
Start Date: 07/17/00

Method: CV
End Date: 07/17/00

Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1841																									
ZZZZZZ	1.00	1843																									
ZZZZZZ	1.00	1845																									
ZZZZZZ	1.00	1847																									
ZZZZZZ	1.00	1848																									
ZZZZZZ	1.00	1850																									
ZZZZZZ	1.00	1852																									
ZZZZZZ	1.00	1854																									
ZZZZZZ	1.00	1855																									
CCV5	1.00	1857															X										
CCB5	1.00	1859															X										
ZZZZZZ	1.00	1901																									
ZZZZZZ	1.00	1903																									
ZZZZZZ	1.00	1904																									
ZZZZZZ	1.00	1906																									
ZZZZZZ	1.00	1908																									
ZZZZZZ	1.00	1910																									
ZZZZZZ	1.00	1912																									
ZZZZZZ	1.00	1913																									
ZZZZZZ	1.00	1915																									
ZZZZZZ	1.00	1917																									
CCV6	1.00	1919															X										
CCB6	1.00	1921															X										
ZZZZZZ	1.00	1923																									
PBS	1.00	1924															X										
LCSW	1.00	1926															X										
LCSS	1.00	1928															X										
LCSSM	1.00	1930															X										
T07497	1.00	1931															X										
T07497D	1.00	1933															X										
T07497S	1.00	1935															X										
T07497SD	1.00	1937															X										

EPA SW846

FORM 14
Analysis Run Log

Lab Name: STL BALTIMORE
SDG No.: T07498
Instrument ID Number: 4CV
Start Date: 07/17/00

Method: CV
End Date: 07/17/00

Sample No.	D/F	Time	%R	Analytes																												
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
T07497A	1.00	1938																X									
CCV7	1.00	1940																X									
CCB7	1.00	1942																X									
T07498	1.00	1944																X									
T07499	1.00	1946																X									
T07500	1.00	1948																X									
T07501	1.00	1949																X									
T07502	1.00	1951																X									
T07503	1.00	1953																X									
T07504	1.00	1955																X									
T07505	1.00	1956																X									
T07506	1.00	1958																X									
T07507	1.00	2000																X									
CCV8	1.00	2002																X									
CCB8	1.00	2004																X									
T07508	1.00	2005																X									
ZZZZZZ	1.00	2007																									
ZZZZZZ	1.00	2009																									
ZZZZZZ	1.00	2011																									
ZZZZZZ	1.00	2012																									
ZZZZZZ	1.00	2014																									
ZZZZZZ	1.00	2016																									
ZZZZZZ	1.00	2018																									
ZZZZZZ	1.00	2020																									
ZZZZZZ	1.00	2022																									
CCV9	1.00	2023																X									
CCB9	1.00	2025																X									

Severn Trent Laboratories, Inc.
STL Baltimore

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package			
Report #: 000814		Due Date: 7/15/00	
Prep Method (s)	Determinative Method(s)	Client/Project 0	[illegible]
STL-M- 7471	STL-M-	No. of Samples	
STL-M-	STL-M-	Matrix	☐ W ☐ S ☑ Sed ☐ Tiss ☐ Wipe
STL-M-	STL-M-	Project Summary	STL-PS- 090

I DATA PACKAGE REVIEW (Completed by Data Package Generator)

1. Was the correct analysis performed & Project Summary followed? ☑ Yes ☐ No ☐ NCR#
2. Were all reported results bracketed by in control QC? ☑ Yes ☐ No ☐ NCR#
3. Was sample analyses performed within holding time? ☑ Yes ☐ No ☐ NCR#
4. Were samples with concentrations > the linear range for any parameter diluted and reanalyzed? ☑ Yes ☐ No ☐ NCR#
5. Are samples reported from a proper dilution? ☑ Yes ☐ No ☐ NCR#
6. LCS done per prep batch and within QC limits? ☑ Yes ☐ No ☐ NCR#
7. Method blank done per prep batch and < RL or CRDL (CLP)? ☑ Yes ☐ No ☐ NCR#
8. SD run at required frequency and RPD within QC limits? ☑ Yes ☐ No ☐ NCR# [illegible]
9. MS run at required frequency and within limits? ☐ Yes ☑ No ☐ NCR# [illegible]
10. MSD run at required frequency and RPD within QC limits? ☐ Yes ☑ No ☐ NCR# [illegible]

Analyte MS (%R) MSD (%R) RPD

11. Was Serial Dilution Test performed per prep batch and within 10% for samples > 50x IDL (CLP) or >10X RL. (SW846)? ☐ Yes ☑ No ☐ NCR# [illegible]
12. Was the analytical spike analyzed if required and acceptable? ☐ Yes ☐ No ☐ NCR# [illegible]
13. Have calculations been checked for error? ☑ Yes ☐ No ☑ NCR#
14. Is sample calculation included in data package? ☐ Yes ☑ No ☐ NCR#
15. Date/time of analysis verified as correct? ☑ Yes ☐ No ☐ NCR#

Comments: _____

Form Initiated: May 18, 2000/mmu

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 000814

III DATA PACKAGE COMPLETENESS, AND NARRATIVE (Completed by Technical Reviewer)

1.	Are all required forms and raw data present?	☑ Yes	☐ No	☐ NCR#
2.	Are NCRs included in the report file and addressed in the narrative?	☑ Yes	☐ No	☐ NCR#
3.	Is the report format consistent with **client** specifications?	☑ Yes	☐ No	☐ NCR#
4.	Are samples linked to appropriate QC (Prep) batch?	☑ Yes	☐ No	☐ NCR#
5.	Are sample IDs, units, matrices, dates, method IDs, and qualifiers correct?	☑ Yes	☐ No	☐ NCR#

Comments:

IV NOTES FOR ANALYTICAL NARRATIVE

(Completed by Data Generator and Technical Reviewer)

SAMPLE CHRONOLOGY

Prep 7/17/00

Run 7/17/00

METHOD PERFORMANCE SUMMARY

SAMPLE PERFORMANCE SUMMARY

MS/MSD (73.0, 72.7) PDS: 82.5%

Form Initiated: May 18, 2000/mmu

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 000814

V OVERALL ASSESSMENT OF DATA QUALITY (Completed by Supervisor)

1. Do spot-checked (minimum of 5%) data accurately reflect data?	☑ Yes	☐ No	☐ NCR#
2. Are all batch QC elements acceptable?	☑ Yes	☐ No	☐ NCR#
3. Is data package compliant with Method?	☑ Yes	☐ No	☐ NCR#
4. Is data package compliant with Project Summary	☑ Yes	☐ No	☐ NCR#
5. Is the "Narrative" complete and accurate per STL-SOP-305-?	☑ Yes	☐ No	☐ NCR#
6. Is the Narrative initialed and dated?	☑ Yes	☐ No	☐ NCR#

Comments:

DATA PACKAGE REVIEW (Signature): John Massey	**DATE:** 7-25-00
TECHNICAL REVIEW (Signature): Judy L. Quinn	**DATE:** 7/28/00
SUPERVISOR REVIEW (Signature): Judy L. Quinn	**DATE:** 7/28/00

Form Initiated: May 18, 2000/mmu

(4)(8)

Company Name: USACE	Project Manager or Contact: Josh Chang
Project No. Ft Totten	Phone:
Dept.: Task:	Project Name: Ft. Totten
Sample Storage Location: K6	ATO Number:
Page 1 of 1	Report #: 000814

Methods:
(a) Hg 7471
SAMPLES ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/25/00
LPM: NKS
PS-090

Parameters/Method Numbers for Analysis

00 Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	A/G (4)	Accession Number	Remarks
6/23	1400		X	4TB-SD-1175-01	1	X	0007531	33 LPM:
	1410			4TB-SD-1175-02	1	X	0007532	34
	1420			4TB-SD-1175-03	1	X	0007533	35
	1430			4TB-SD-1175-04	1	X	0007534	36
	1430			4TB-SD-1175-02D	1	X	0007535	37
	1515			4TB-SD-1175-05	1	X	0007536	38
	1525			4TB-SD-1175-06	1	X	0007537	39
	1530			4TB-SD-1175-07	1	X	0007538	40
	1540			4TB-SD-1175-08	1	X	0007539	41
	1550			4TB-SD-1175-09	1	X	0007540	42
	1600			4TB-SD-1175-10	1	X	0007541	43
↓	1610		↓	4TB-SD-1175-11	1	X	0007542	44
								COC0007399

Sampled by: (Signature) Joe Leue	Date/Time 6/23/2000	Relinquished by: (Signature) Joe Leue	Date/Time 6/24/2000	Received by: (Signature) Fed Ex	Date/Time
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature) Phyllis Easter	Date/Time 7/1/00 11:20	Airbill Number: 805411683450	Sample Shipped by: (Circle) Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp. ____ C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☒ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager Shaded Areas for Lab Use Only

STL BALTIMORE
ANALYTICAL NARRATIVE

QC Chemist: JSK 7/26/00

Date: 26 July 2000

File Name: GROUP\NAR\00814mt5.NAR

Client/Project: USACE / Ft. Totten

METALS - SOIL (STL0007533 - STL0007544)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 20 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 20 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T07533	LTBSD14501
T07533D	LTBSD14501 D
T07533S	LTBSD14501 S
T07534	LTBSD14502
T07535	LTBSD14503
T07536	LTBSD14504
T07537	LTBSD14522
T07538	LTBSD14505
T07539	LTBSD14506
T07540	LTBSD14507
T07541	LTBSD14508
T07542	LTBSD14509
T07543	LTBSD14510
T07544	LTBSD14511

)@ 7/26/00

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirnon Name: Judy S. Kirnon

Date: 26 July 2000 Title: LAB TECHNICIAN

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07533

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix: SEDIMENT

Client ID: LTBSD14501

Percent Solids: 67.9

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.08	B		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07534

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix: SEDIMENT

Client ID: LTBSD14502

Percent Solids: 46.7

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.2			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07535

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix: SEDIMENT

Client ID: LTBSD14503

Percent Solids: 56.6

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07536

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix: SEDIMENT

Client ID: LTBSD14504

Percent Solids: 50.2

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07537

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix: SEDIMENT

Client ID: LTBSD14522

Percent Solids: 52.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07538

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix: SEDIMENT

Client ID: LTBSD14505

Percent Solids: 55.3

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.5			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07539

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix: SEDIMENT

Client ID: LTBSD14506

Percent Solids: 51.1

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.92			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07540

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix: SEDIMENT

Client ID: LTBSD14507

Percent Solids: 57.8

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07541

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix: SEDIMENT

Client ID: LTBSD14508

Percent Solids: 61.9

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07542

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix: SEDIMENT

Client ID: LTBSD14509

Percent Solids: 63.7

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07543

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix: SEDIMENT

Client ID: LTBSD14510

Percent Solids: 60.7

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07544

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix: SEDIMENT

Client ID: LTBSD14511

Percent Solids: 65.9

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07533

Initial Calibration Source: IV RICCA

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury	6.0	5.67	94.5	3.0	2.77	92.3	2.80	93.3	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07533

Initial Calibration Source:

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				3.0	2.77	92.3	2.75	91.7	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07533

Initial Calibration Source:

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration True	Found	%R(1)	Continuing Calibration True	Found	%R(1)	Found	%R(1)	M
Mercury				3.0	2.76	92.0	2.74	91.3	CV

EPA SW846

FORM 2A
INITIAL AND CONTINUING CALIBRATION VERIFICATION

Laboratory: STL BALTIMORE

SDG No.:T07533

Initial Calibration Source:

Continuing Calibration Source: IV RICCA

Concentration Units: ug/L

Analyte	Initial Calibration			Continuing Calibration					M
	True	Found	%R(1)	True	Found	%R(1)	Found	%R(1)	
Mercury				3.0	2.72	90.7			CV

EPA SW846

FORM 2B
CRDL STANDARD FOR AA AND ICP

Laboratory: STL BALTIMORE

SDG No.: T07533

AA CRDL Standard Source: MALL

ICP CRDL Standard Source:

Concentration Units: ug/L

Analyte	CRDL Standard for AA			CRDL Standard for ICP				
	True	Found	%R	True	Initial Found	%R	Final Found	%R
Mercury	0.2	0.16	80.0					

EPA SW846

FORM 3
BLANKS

Laboratory: STL BALTIMORE

SDG No.: T07533

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units.(ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury	0.1	U	0.1	U	0.1	U	0.1	U	0.050	U	CV

EPA SW846

FORM 3
BLANKS

Laboratory: STL BALTIMORE

SDG No.: T07533

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units.(ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury			0.1	U	0.1	U	0.1	U			CV

EPA SW846

FORM 3
BLANKS

Laboratory: STL BALTIMORE

SDG No.: T07533

Preparation Blank Matrix (soil/water): SOIL

Preparation Blank Concentration Units.(ug/L or mg/kg): MG/KG

Analyte	Initial Calib. Blank (ug/L)	C	Continuing Calibration Blank (ug/L) 1	C	2	C	3	C	Prepa-ration Blank	C	M
Mercury			0.1	U							CV

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER T07533S

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix (soil/water): SOIL
% Solids for Sample: 67.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	1.9208		0.0818	B	1.99	92.4		CV

Comments:

EPA SW846

FORM 5
SPIKE SAMPLE RECOVERY

LAB SAMPLE NUMBER T07533S

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix (soil/water): SOIL
% Solids for Sample: 67.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit %R	Spiked Sample Result (SSR)	C	Sample Result (SR)	C	Spike Added (SA)	%R	Q	M
Mercury	75-125	1.8936		0.0818	B	1.99	91.0		CV

Comments:
MATRIX SPIKE DUPLICATE

EPA SW846

FORM 6
DUPLICATES

LAB SAMPLE NUMBER: T07533D

Laboratory: STL BALTIMORE

SDG No.: T07533

Matrix (soil/water): SOIL

% Solids for Sample: 67.9

Concentration Units (ug/L or mg/kg dry weight): MG/KG

Analyte	Control Limit	Sample (S)	C	Duplicate (D)	C	RPD	Q	M
Mercury		0.0818	B	0.0788	B	3.7		CV

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: STL BALTIMORE

SDG No.: T07533

Solid LCS Source: ERA LOT 244

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				0.7	0.6		0.3	1.1	85.7

EPA SW846

FORM 7
LABORATORY CONTROL SAMPLE

Laboratory: STL BALTIMORE

SDG No.: T07533

Solid LCS Source: MESS - 2

Aqueous LCS Source:

Analyte	Aqueous (ug/L) True	Found	%R	Solid (mg/kg) True	Found	C	Limits		%R
Mercury				0.092~~0.1~~	0.083~~0.1~~				~~100.0~~ 90.2

Corrections: JF 7/26/00

EPA SW846

FORM 10
METHOD DETECTION LIMITS

Laboratory: STL BALTIMORE

SDG No.: T07533

ICP ID Number:

Date: 09/01/99

Furnace AA ID Number: 4CV

Analyte	Wave-length (nm)	Back-ground	Reporting Limit (ug/L)	MDL (ug/L)	M
Mercury	253.70		0.2	0.1	CV

Comments:

EPA SW846

FORM 13
Preparation Log

Laboratory: STL BALTIMORE

SDG No.: T07533

Method: CV

LAB Sample No.	Preparation Date	Weight (gram)	Volume (ml)
LCSS	07/20/00	0.20	100
LCSSM	07/20/00	0.21	100
LCSW	07/20/00		100
PBS	07/20/00	0.20	100
T07533	07/20/00	0.29	100
T07533D	07/20/00	0.29	100
T07533S	07/20/00	0.30	100
T07533SD	07/20/00	0.30	100
T07534	07/20/00	0.43	100
T07535	07/20/00	0.36	100
T07536	07/20/00	0.40	100
T07537	07/20/00	0.39	100
T07538	07/20/00	0.36	100
T07539	07/20/00	0.39	100
T07540	07/20/00	0.34	100
T07541	07/20/00	0.32	100
T07542	07/20/00	0.32	100
T07543	07/20/00	0.33	100
T07544	07/20/00	0.30	100

EPA SW846

FORM 14
Analysis Run Log

Lab Name: STL BALTIMORE
SDG No.: T07533
Instrument ID Number: 4CV
Start Date: 07/20/00

Method: CV
End Date: 07/20/00

Sample No.	D/F	Time	%R	Analytes																												
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ICV	1.00	1614																X								
ICB	1.00	1616																X								
CCV1	1.00	1618																X								
CCB1	1.00	1620																X								
CRA	1.00	1621																X								
ZZZZZZ	1.00	1623																								
ZZZZZZ	1.00	1625																								
ZZZZZZ	1.00	1627																								
ZZZZZZ	1.00	1628																								
ZZZZZZ	1.00	1630																								
ZZZZZZ	1.00	1632																								
ZZZZZZ	1.00	1634																								
ZZZZZZ	1.00	1636																								
ZZZZZZ	1.00	1638																								
CCV2	1.00	1639																X								
CCB2	1.00	1641																X								
ZZZZZZ	1.00	1643																								
ZZZZZZ	1.00	1645																								
ZZZZZZ	1.00	1646																								
ZZZZZZ	1.00	1648																								
ZZZZZZ	1.00	1650																								
ZZZZZZ	1.00	1652																								
ZZZZZZ	1.00	1654																								
ZZZZZZ	1.00	1655																								
ZZZZZZ	1.00	1657																								
ZZZZZZ	1.00	1659																								
CCV3	1.00	1701																X								
CCB3	1.00	1703																X								
ZZZZZZ	1.00	1705																								
ZZZZZZ	1.00	1706																								
ZZZZZZ	1.00	1708																								
ZZZZZZ	1.00	1710																								

EPA SW846

FORM 14
Analysis Run Log

Lab Name: STL BALTIMORE
SDG No.: T07533
Instrument ID Number: 4CV
Start Date: 07/20/00

Method: CV
End Date: 07/20/00

Sample No.	D/F	Time	%R	Analytes																										
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
ZZZZZZ	1.00	1712																									
ZZZZZZ	1.00	1713																									
ZZZZZZ	1.00	1715																									
ZZZZZZ	1.00	1717																									
ZZZZZZ	1.00	1719																									
ZZZZZZ	1.00	1721																									
CCV4	1.00	1722																X									
CCB4	1.00	1724																X									
ZZZZZZ	1.00	1726																									
PBS	1.00	1728																X									
LCSW	1.00	1730																X									
LCSS	1.00	1731																X									
LCSSM	1.00	1733																X									
T07533	1.00	1735																X									
T07533D	1.00	1737																X									
T07533S	1.00	1739																X									
T07533SD	1.00	1740																X									
T07533A	1.00	1742																X									
CCV5	1.00	1744																X									
CCB5	1.00	1746																X									
T07534	1.00	1748																X									
T07535	1.00	1749																X									
T07536	1.00	1751																X									
T07537	1.00	1753																X									
T07538	1.00	1755																X									
T07539	1.00	1756																X									
T07540	1.00	1758																X									
T07541	1.00	1800																X									
T07542	1.00	1802																X									
T07543	1.00	1804																X									
CCV6	1.00	1805																X									
CCB6	1.00	1807																X									

EPA SW846

FORM 14
Analysis Run Log

Lab Name: STL BALTIMORE
SDG No.: T07533
Instrument ID Number: 4CV
Start Date: 07/20/00

Method: CV
End Date: 07/20/00

Sample No.	D/F	Time	%R	Analytes																							
				AL	SB	AS	BA	BE	CD	CA	CR	CO	CU	FE	PB	MG	MN	HG	NI	K	SE	AG	NA	TL	V	ZN	CN
T07544	1.00	1809																X									
ZZZZZZ	1.00	1811																									
ZZZZZZ	1.00	1813																									
ZZZZZZ	1.00	1814																									
ZZZZZZ	1.00	1816																									
ZZZZZZ	1.00	1818																									
ZZZZZZ	1.00	1820																									
ZZZZZZ	1.00	1822																									
ZZZZZZ	1.00	1823																									
ZZZZZZ	1.00	1825																									
CCV7	1.00	1827																X									
CCB7	1.00	1829																X									

Severn Trent Laboratories, Inc.
STL Baltimore

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package			
Report #: 000814		Due Date: 7/15/00	
Prep Method (s)	Determinative Method(s)	Client/Project	Mark
STL-M- 7471	STL-M-	No. of Samples	12
STL-M-	STL-M-	Matrix	❑ W ❑ S ☑ Sed ❑ Tiss ❑ Wipe
STL-M-	STL-M-	Project Summary	STL-PS 1190

I **DATA PACKAGE REVIEW (Completed by Data Package Generator)**

1. Was the correct analysis performed & Project Summary followed?	☑ Yes	❑ No	❑ NCR#
2. Were all reported results bracketed by in control QC?	☑ Yes	❑ No	❑ NCR#
3. Was sample analyses performed within holding time?	☑ Yes	❑ No	❑ NCR#
4. Were samples with concentrations > the linear range for any parameter diluted and reanalyzed?	❑ Yes	❑ No	❑ NCR#
5. Are samples reported from a proper dilution?	☑ Yes	❑ No	❑ NCR#
6. LCS done per prep batch and within QC limits?	☑ Yes	❑ No	❑ NCR#
7. Method blank done per prep batch and < RL or CRDL (CLP)?	☑ Yes	❑ No	❑ NCR#
8. SD run at required frequency and RPD within QC limits?	☑ Yes	❑ No	❑ NCR#
9. MS run at required frequency and within limits?	☑ Yes	❑ No	❑ NCR#
10. MSD run at required frequency and RPD within QC limits?	☑ Yes	❑ No	❑ NCR#

Analyte	MS (%R)	MSD (%R)	RPD

11. Was Serial Dilution Test performed per prep batch and within 10% for samples > 50x IDL (CLP) or >10X RL. (SW846)?	☑ Yes	❑ No	❑ NCR# n/a
12. Was the analytical spike analyzed if required and acceptable?	❑ Yes	❑ No	❑ NCR# n/a
13. Have calculations been checked for error?	☑ Yes	❑ No	❑ NCR#
14. Is sample calculation included in data package?	☑ Yes	❑ No	❑ NCR#
15. Date/time of analysis verified as correct?	☑ Yes	❑ No	❑ NCR#

Comments:

Form Initiated: May 18, 2000/mmu

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 000814

III DATA PACKAGE COMPLETENESS, AND NARRATIVE (Completed by Technical Reviewer)

1.	Are all required forms and raw data present?	☑ Yes	☐ No	☐ NCR#
2.	Are NCRs included in the report file and addressed in the narrative?	N/A ☑ Yes	☐ No	☐ NCR#
3.	Is the report format consistent with **client** specifications?	☑ Yes	☐ No	☐ NCR#
4.	Are samples linked to appropriate QC (Prep) batch?	☑ Yes	☐ No	☐ NCR#
5.	Are sample IDs, units, matrices, dates, method IDs, and qualifiers correct?	☑ Yes	☐ No	☐ NCR#

Comments:

IV NOTES FOR ANALYTICAL NARRATIVE

(Completed by Data Generator and Technical Reviewer)

SAMPLE CHRONOLOGY

Prep 7/20/00

Run 7/20/00

METHOD PERFORMANCE SUMMARY

SAMPLE PERFORMANCE SUMMARY

Form Initiated: May 18, 2000/mmu

Severn Trent Laboratories, Inc.
STL Baltimore

TECHNICAL DATA REVIEW CHECKLIST - Metals

Data Package

Report #: 000814

V OVERALL ASSESSMENT OF DATA QUALITY (Completed by Supervisor)

1. Do spot-checked (minimum of 5%) data accurately reflect data?	☑ Yes	☐ No	☐ NCR#
2. Are all batch QC elements acceptable?	☑ Yes	☐ No	☐ NCR#
3. Is data package compliant with Method?	☑ Yes	☐ No	☐ NCR#
4. Is data package compliant with Project Summary	☑ Yes	☐ No	☐ NCR#
5. Is the "Narrative" complete and accurate per STL-SOP-305-?	☑ Yes	☐ No	☐ NCR#
6. Is the Narrative initialed and dated?	☑ Yes	☐ No	☐ NCR#

Comments:

DATA PACKAGE REVIEW (Signature):	**DATE:** 7-26-00
TECHNICAL REVIEW (Signature):	**DATE:** 7/26/00
SUPERVISOR REVIEW (Signature):	**DATE:** 7/26/00

Form Initiated: May 18, 2000/mmu

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August 22, 2000

Mr. Scott Chang
CENAB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Re: Fort Totten (70047.67)

Dear Mr. Chang:

Enclosed is our report on the analysis of 63 soil samples collected for the Fort Totten project on 6 and 7 July 2000. The electronic data deliverables (EDD) will follow. The invoice is included.

Please contact me if you have any questions or require further information and refer to report 000846. Unless other arrangements are made, we reserve the right to dispose of your samples sixty (60) days from the date of this letter. We will retain the raw data for seven years from this date.

Sincerely,

Natasha K. Sullivan
Laboratory Project Manager

NKS/gsp
enclosure

SEVERN TRENT SERVICES

STL Baltimore

LABORATORY DATA REPORT

Prepared for:

CENAB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Prepared by:

Severn Trent Laboratories
19 Loveton Circle
Sparks, MD 21152

Report 000846

August 2000

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Severn Trent Laboratories Report 000846

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		5. Duplicates (FORM VI)	060027
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		3. Spike Sample Recovery (FORM V Part 1-IN)	080024
		4. Duplicates (FORM VI)	080026
		5. Laboratory Control Sample (FORM VII)	080027
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1. NARRATIVE

010000

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000846**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **22 August 2000**

This report contains the results of the analysis of 63 soil samples collected on 6 and 7 July 2000 in support of the referenced project.

SAMPLE RECEIPT

The samples arrived with custody seals intact by Federal Express at Severn Trent Laboratories on 8 July 2000. Upon receipt, the samples were inspected and compared with the chain-of-custody records. The samples were then logged into the laboratory computer system with an assigned laboratory accession number and released for analysis.

Client Sample Designation	STL - Baltimore Number
LTB-SD-130-01	0007667
LTB-SD-130-02	0007668
LTB-SD-130-22	0007669
LTB-SD-130-03	0007670
LTB-SD-130-04	0007671
LTB-SD-130-42	0007672
LTB-SD-130-05	0007673
LTB-SD-130-06	0007674
LTB-SD-130-07	0007675
LTB-SD-130-08	0007676
LTB-SD-130-09	0007677
LTB-SD-130-10	0007678
LTB-SD-130-11	0007679
LTB-SD-130-44	0007680
LTB-SD-131-01	0007681
LTB-SD-131-02	0007682
LTB-SD-131-03	0007683
LTB-SD-131-04	0007684
LTB-SD-131-05	0007685
LTB-SD-131-22	0007686
LTB-SD-131-06	0007687
LTB-SD-131-07	0007688
LTB-SD-131-08	0007689
LTB-SD-131-09	0007690
LTB-SD-131-10	0007691
LTB-SD-131-11	0007692
LTB-SD-132-01	0007693
LTB-SD-132-02	0007694
LTB-SD-132-03	0007695

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
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Report Date: **22 August 2000**

LTB-SD-132-04	0007696
LTB-SD-132-05	0007697
LTB-SD-132-06	0007698
LTB-SD-132-22	0007699
LTB-SD-132-07	0007700
LTB-SD-132-08	0007701
LTB-SD-132-09	0007702
LTB-SD-132-10	0007703
LTB-SD-132-11	0007704
LTB-SD-133-01	0007705
LTB-SD-133-02	0007706
LTB-SD-133-03	0007708
LTB-SD-133-04	0007709
LTB-SD-133-05	0007710
LTB-SD-133-06	0007711
LTB-SD-133-07	0007712
LTB-SD-133-22	0007713
LTB-SD-133-08	0007714
LTB-SD-133-09	0007715
LTB-SD-133-10	0007716
LTB-SD-133-11	0007717
LTB-SD-134-01	0007718
LTB-SD-134-02	0007719
LTB-SD-134-03	0007720
LTB-SD-134-04	0007721
LTB-SD-134-22	0007722
LTB-SD-134-05	0007723
LTB-SD-134-06	0007724
LTB-SD-134-07	0007725
LTB-SD-134-08	0007726
LTB-SD-134-09	0007727
LTB-SD-134-10	0007728
LTB-SD-134-11	0007729
LTB-SD-134-44	0007730

Following this narrative section are a glossary of data qualifiers (Tables 1) and the original chain-of-custody records. Analytical results and quality control information are summarized in the appended

data package which has been formatted to be consistent with the deliverable requirements of this project.

ANALYTICAL METHODS

The analytical methods used by the laboratory are referenced by the STL Baltimore Method SOP which is formatted as STL-M-XXXXX-Y, where XXXXX is the reference method and Y is the SOP revision number. For example, analyses performed using EPA SW846 Method 8260B are identified as STL-M-8260B-3 where 3 is the laboratory SOP revision number. General Chemistry methods which are a consolidation of several reference methods, e.g. STL-M-CN for cyanide determinations, also include the identification of the specific reference method used for the analyses.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

METALS - SOIL (STL0007667, STL0007705)

Sample Chronology: Two samples were prepared by STL-M-3050B-2/7470A/1A-2 on 13 and 16

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000846**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **22 August 2000**

July 2000 and analyzed for TAL metals by STL-M-6010B-1/7000S-2/7470A/1A-2 on 17 - 20 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

The MS/MSD recoveries (performed on sample FSS-SS-41-01) for antimony (36.7%, 33.6%), barium (73.4%) ms only, manganese (24.6%, 50.9%) vanadium (73.9%) and zinc (32.8%), ms only, were below the QC limit of 75% indicating a potential for negative bias to the sample data for these elements. The MS/MSD recoveries for aluminum, calcium, copper, iron, and lead, could not be reliably determined because the high native concentrations of these elements were significantly higher than the spike concentration added.

The relative percent difference (RPD) between the sample and sample duplicate for mercury (26.1%) was above the QC limit of 20%. This RPD value may indicate a precision deficit for this element.

The percent difference (%D) of calcium (11.2%) , copper (63.3%) and chromium (10.9%) for the serial dilution test was above the QC limit of 10%. This may indicate a possible matrix interference for these elements.

METALS - SEDIMENT (STL0007706 - STL0007717)

Sample Chronology: Eleven samples were prepared by STL-M-7470A/1A-2 on 31 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 1 August 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

METALS - SEDIMENT (STL0007718 - STL0007729)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 31 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 1 August 2000. All holding times were met.

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000846**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **22 August 2000**

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

METALS - SEDIMENT (STL0007693 - STL0007704)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 31 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 1 August 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

METALS - WATER (STL0007680, STL0007730)

Sample Chronology: Two samples were prepared by STL-M-7470A/1A-2 on 31 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 1 August 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

METALS - SEDIMENT (STL0007668 - STL0007679)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 28 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 29 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

METALS - SEDIMENT (STL0007682 - STL0007692)

Sample Chronology: Eleven samples were prepared by STL-M-7470A/1A-2 on 1 August 2000 and

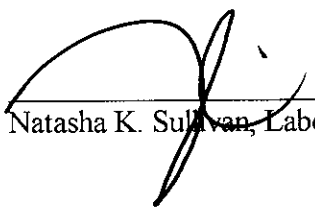
analyzed for mercury by STL-M-7470A/1A-2 on 1 August 2000. Sample LTB-SD-131-01 was not prepared or analyzed for mercury. Unable to locate the sample. All other holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

CERTIFICATION OF RESULTS

The Laboratory certifies that the reported results relate only to those samples tested and that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in STL Baltimore's Quality Assurance program for other than the conditions detailed above. Release of the data contained in this report has been authorized by the Laboratory Project Manager as verified by the following signature.



August 22, 2000

Natasha K. Sullivan, Laboratory Project Manager

TABLE 1. LABORATORY INORGANIC ANALYSIS DATA QUALIFIERS [1]

C ***(Concentration) qualifiers:***

B	Reported value is less than the project-specified Reporting Limit (RL), but greater than the method-specified Instrument Detection Limit (IDL) or Method Detection Limit (MDL).
U	Analyte analyzed for but not detected (concentration is less than the method-specified Instrument Detection Limit (IDL) or Method Detection Limit (MDL).

Q ***(Quality control) qualifiers:***

E	Reported value is estimated because of presence of interference.
M	Duplicate injection precision not met.
N	Spiked sample recovery is not within control limits.
S	Reported value is determined by the method of standard additions (MSA).
W	Postdigestion spike for furnace Atomic Absorption Spectrophotometric (AAS) AAS analysis is out of control limits (85-115%) and sample absorbance is less than 50% of spike absorbance.
*	Duplicate analyses is not within control limits.
+	Correlation coefficient for MSA is less than 0.995.

M ***(Method) qualifiers:***

P	Inductively Coupled Plasma (ICP)
A	Flame AAS
F	Furnace AAS
CV	Cold Vapor AAS
AV	Automated Cold Vapor AAS
AS	Semiautomated Spectrophotometric
C	Manual Spectrophotometric
T	Titrimetric
NR	Analyte is not required to be determined.

(1) These Data Qualifiers are added by the laboratory to provide additional information for the reported results. ***They should not be confused with the qualifiers applied to the reported data as a result of a data validation process performed independently of the laboratory reporting procedure.***

2. CHAIN-OF-CUSTODY

Methods:
(a) Hg 7471
SAMPLES ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/31/00
LPM: NKS
PS-090

Company Name: USACE	Project Manager or Contact: Scott Chang Phone:
Project No. Ft. TOTTEN Dept.: Task:	Project Name: Ft. TOTTEN
Sample Storage Location: F1/214	ATO Number:
Page 1 of 1	Report #: 000846

Parameters/Method Numbers f

2000 Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	Hg (a)	TAL Metal	6001 7000	EA Labs Accession Number	Remarks
6JUL	1330		X	LTB-SD-130-01	1		X		0007667	LPM:
	1335			LTB-SD-130-02	1	X			0007668	
	1335			LTB-SD-130-22	1	X			0007669	
	1340			LTB-SD-130-03	1	X			0007670	
	1345			LTB-SD-130-04	1	X			0007671	
	1345			LTB-SD-130-42	1	X			0007672	
	1350			LTB-SD-130-05	1	X			0007673	
	1355			LTB-SD-130-06	1	X			0007674	
	1400			LTB-SD-130-07	1	X			0007675	
	1405			LTB-SD-130-08	1	X			0007676	
	1410			LTB-SD-130-09	1	X			0007677	
	1415			LTB-SD-130-10	1	X			0007678	V18267
	1420			LTB-SD-130-11	1	X			0007679	
6JUL	1325	X		LTB-SD-130-44	1	X			0007680	
									~~000~~	
										6Φ-4OZ
										2-C
										COC0007420

Joe Lenz

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Joe Lenz	7JUL 00 1900	Joe Lenz	7JUL 00 1900	Fed EX	
Relinquished by: (Signature)	**Date/Time**	**Received by Laboratory: (Signature)**	**Date/Time**	**Airbill Number:**	**Sample Shipped by: (Circle)**
		Cathy Hershey	7/14/00 1000	821353076452	Fed Ex Puro. UPS Hand Carried Other:

Cooler Temp. 4 C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☒ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

Company Name: USACE	Project Manager or Contact: Scott Chang Phone:
Project No. Ft. TOTTEN Dept.: Task:	Project Name: Ft. TOTTEN
Sample Storage Location: I1/214	ATO Number:
Page 1 of 1	Report #: 000846

Parameters/Method Numbers f

Methods:
(a) Hg 7471
SAMPLES ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/31/00
LPM: NKS
PS-090

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	Hg (a)	Accession Number	Remarks
7JUL	0800		X	LTB-SD-131-01	1	X	0007681	LPM:
	0805			LTB-SD-131-02	1	X	0007682	
	0810			LTB-SD-131-03	1	X	0007683	
	0815			LTB-SD-131-04	1	X	0007684	
	0820			LTB-SD-131-05	1	X	0007685	
	0820			LTB-SD-131-22	1	X	0007686	
	0825			LTB-SD-131-06	1	X	0007687	
	0830			LTB-SD-131-07	1	X	0007688	
	0835			LTB-SD-131-08	1	X	0007689	
	0840			LTB-SD-131-09	1	X	0007690	
	0845			LTB-SD-131-10	1	X	0007691	L18267
	0850			LTB-SD-131-11	1	X	0007692	
								60-402
								2E
								COC0007420

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Jim Lane	7JUL 1900	Jim Lane	7JUL 1900	Jim Lane	
Relinquished by: (Signature)	**Date/Time**	**Received by Laboratory: (Signature)**	**Date/Time**	**Airbill Number:**	**Sample Shipped by: (Circle)**
		Cathy Hershey	7/8/00	8213 5307 6452	Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp. 4 C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☒ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

020002

Company Name: USACE	Project Manager or Contact: Scott Chang Phone:
Project No. Dept.: Ft. Totten Task:	Project Name: Ft. Totten
Sample Storage Location: I1/214	ATO Number:
Page 1 of 1	Report #: 000 846

Parameters/Method Number

Methods:
(a) Hg 7471
SAMPLE ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/31/00
LPM: NKS
PS-090

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	HG (a)	Number	Remarks
7JUL	1100		X	LTB-SD-132-01	1	X	0007693	LPM:
	1105			LTB-SD-132-02	1	X	0007694	
	1110			LTB-SD-132-03	1	X	0007695	
	1115			LTB-SD-132-04	1	X	0007696	
	1120			LTB-SD-132-05	1	X	0007697	
	1125			LTB-SD-132-06	1	X	0007698	
	1125			LTB-SD-132-22	1	X	0007699	
	1130			LTB-SD-132-07	1	X	0007700	
	1135			LTB-SD-132-08	1	X	0007701	
	1140			LTB-SD-132-09	1	X	0007702	
	1145			LTB-SD-132-10	1	X	0007703	
	1150			LTB-SD-132-11	1	X	0007704	U18267
								60.402
								2-C
								COC0007420

Joe Leise

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Joe Leise	7JUL 00 1900	Joe Leise	7JUL 00 1900	Fed EX	
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle) Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp.____C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

000003

Company Name: USACE	Project Manager or Contact: Scott Chans Phone:
Project No. Ft. Totten Dept.: Task:	Project Name: Ft. Totten
Sample Storage Location: I 1/214	ATO Number:
Page of	Report #: 000846

Parameters/Method Numbers for

Methods:
(a) Hg 7471
SAMPLES ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/31/00
LPM: NKS
PS-090

Date (00)	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	HG (a)	TAL Metals	6010/7000	Accession Number	Remarks
6 JUL	1600		X	4TB-SD-133-01	1		X		0007705	LPM:
	1605			4TB-SD-133-02	1	X			0007706	
	1610			4TB-SD-133-03	1	X			0007708	
	1615			4TB-SD-133-04	1	X			0007709	
	1620			4TB-SD-133-05	1	X			0007710	
	1625			4TB-SD-133-06	1	X			0007711	
	1630			4TB-SD-133-07	1	X			0007712	
	1630			4TB-SD-133-22	1	X			0007713	
	1635			4TB-SD-133-08	1	X			0007714	
	1640			4TB-SD-133-09	1	X			0007715	
	1675			4TB-SD-133-10	1	X			0007716	
	1650			4TB-SD-133-11	1	X			0007717	
										L18267
										60-402
										2-C
										CUC0007420

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Joseph E Lane	7 JUL 1900	Joseph E Lane	7 JUL 1900	Fed EX	
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		Cathy Hershey	7/8/00 1000	821355076457	Fed Ex. Puro. UPS
Cooler Temp. 4 C pH: Yes No Comments:		Custody Seals Intact X Yes No			Hand Carried
					Other:

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

000004

Company Name: USACE	Project Manager or Contact: Scott Chang Phone:
Project No. Ft. TOTTEN Dept.: Task:	Project Name: Ft. TOTTEN
Sample Storage Location: F1/214	ATO Number:
Page 1 of 1	Report #: 000846

Parameters/Method Numbers fo

Methods:
(a) Hg 7471
SAMPLE ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/31/00
LPM: NKS
PS-090

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	Hg (a)	EA Lab Accession Number	Remarks
6JUL	1500		X	LTB-SD-134-01	1	X	0007718	LPM:
	1505			LTB-SD-134-02	1	X	0007719	
	1510			LTB-SD-134-03	1	X	0007720	
	1515			LTB-SD-134-04	1	X	0007721	
	1515			LTB-SD-134-22	1	X	0007722	
	1520			LTB-SD-134-05	1	X	0007723	
	1525			LTB-SD-134-06	1	X	0007724	
	1530			LTB-SD-134-07	1	X	0007725	
	1535			LTB-SD-134-08	1	X	0007726	
	1540			LTB-SD-134-09	1	X	0007727	
	1545			LTB-SD-134-10	1	X	0007728	
	1550			LTB-SD-134-11	1	X	0007729	
	1530	X		LTB-SD-134-44	1	X	0007730	L18267
								60 402
								2C
								COC0007420

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
JOE Leise	7JUL 1900	JOE Leise	7JUL 1900	Fed EX	
Relinquished by: (Signature)	**Date/Time**	**Received by Laboratory: (Signature)**	**Date/Time**	**Airbill Number:**	**Sample Shipped by: (Circle)**
		Cathy Alistey	7/8/00 1000	821353076452	Fed Ex. Puro. UPS
					Hand Carried
					Other:

Cooler Temp. ☐ C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☒ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

Severn Trent Laboratories
STL Baltimore

19 Loveton Circle
Sparks, Maryland 21152
(410) 771-4920

Committed to *Your* Success

COOLER RECEIPT CHECKLIST

Report: 000846

Project: Ft. Totten
Received: 08-JUL-00 10:00
COC: COC0007420
Samples: 0007666-0007730

A. COOLER INSPECTION:

Date cooler was opened: 7/8/00 Date — Custodian Signature

1. Did cooler come with a shipping slip, air bill, etc? (YES) NO N/A NCR# _____
1a. Circle courier: ~~Federal Express~~ UPS *Air bill Number from Chain-of-Custody* 8213530764521
1b. Circle, if applicable: Handcarried Other

2. Custody seals were present on outside of cooler? YES (NO) N/A NCR# _____
3. Custody seals were unbroken at the time of arrival? YES NO (N/A) NCR# _____
4. Chain-of-Custody (COC)records were present and legible? (YES) NO N/A NCR# _____
5. Were the COC records completed? (YES) NO N/A NCR# _____
6. Was cooler temperature 4C ± 2C? (YES) NO N/A NCR# _____

B. SAMPLE INSPECTION

9. All bottles arrived unbroken? (YES) NO N/A NCR# _____
10. All bottles labels were legible and complete? (YES) NO N/A NCR# _____
11. Containers were correct for the analysis listed on the COC? (YES) NO N/A NCR# _____
12. Were preservatives checked (except VOA vials)? YES NO (N/A) NCR# _____
13. Were bubbles absent in Volatiles samples? YES NO (N/A) NCR# _____

Special Notes:

Jennifer E. Jessen 7/8/00
Sample Management Officer — Date

September 29, 1999/mmu

M:\GROUP\QA\FORMS\COOLER.WPD

020036

3. METALS DATA

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07667

Laboratory: STL BALTIMORE

SDG No.: T07771

Matrix: SEDIMENT

Client ID: LTBS013001

Percent Solids: 69.2

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7620			P
7440-36-0	Antimony	1.0		N	P
7440-38-2	Arsenic	4.1			P
7440-39-3	Barium	103		N	P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	1.2			P
7440-70-2	Calcium	4690		EN	P
7440-47-3	Chromium	42.5		E	P
7440-48-4	Cobalt	8.4			P
7440-50-8	Copper	79.8		E	P
7439-89-6	Iron	17900			P
7439-92-1	Lead	151			P
7439-95-4	Magnesium	5590			P
7439-96-5	Manganese	181		N	P
7439-97-6	Mercury	0.36		*	CV
7440-02-0	Nickel	19.5			P
7440-09-7	Potassium	4220			P
7782-49-2	Selenium	0.45	B		P
7440-22-4	Silver	0.16	U		P
7440-23-5	Sodium	3810			P
7440-28-0	Thallium	0.20	B		F
7440-62-2	Vanadium	27.5		N	P
7440-66-6	Zinc	306		N	P

JW 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

030003

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07705

Laboratory: STL BALTIMORE

SDG No.: T07771

Matrix: SEDIMENT Client ID: LTBSD13301

Percent Solids: 29.3 Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11800			P
7440-36-0	Antimony	0.68		N	P
7440-38-2	Arsenic	10.1			P
7440-39-3	Barium	81.1		N	P
7440-41-7	Beryllium	0.59			P
7440-43-9	Cadmium	2.0			P
7440-70-2	Calcium	6740		EN	P
7440-47-3	Chromium	96.2		E	P
7440-48-4	Cobalt	9.2			P
7440-50-8	Copper	182		E	P
7439-89-6	Iron	30700			P
7439-92-1	Lead	187			P
7439-95-4	Magnesium	8050			P
7439-96-5	Manganese	408		N	P
7439-97-6	Mercury	1.5		*	CV
7440-02-0	Nickel	28.8			P
7440-09-7	Potassium	4400			P
7782-49-2	Selenium	0.88			P
7440-22-4	Silver	4.3			P
7440-23-5	Sodium	21200			P
7440-28-0	Thallium	0.31	B	W	F
7440-62-2	Vanadium	35.9		N	P
7440-66-6	Zinc	268		N	P

SW 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

030004

4. METALS DATA

040300

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07706

Laboratory: ST LABORATORIES

SDG No.: T07706

Matrix: SEDIMENT

Client ID: LTB-SD-133-02 SW 8/3/00

Percent Solids: 42.0

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.8			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

040093

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07708

Laboratory: ST LABORATORIES

SDG No.: T07706

Matrix: SEDIMENT

Client ID: LTB-SD-133-03 8/3/00

Percent Solids: 43.4

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.8			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

040094

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07709

Laboratory: ST LABORATORIES

SDG No.: T07706

Matrix: SEDIMENT

Client ID: LTB-SD-133-04 8/13/00

Percent Solids: 46.6

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.4			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07710

Laboratory: ST LABORATORIES

SDG No.: T07706

Matrix: SEDIMENT

Client ID: LTB-SD-133-05 8/3/00

Percent Solids: 47.1

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.5			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

040006

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07711

Laboratory: ST LABORATORIES

SDG No.: T07706

Matrix: SEDIMENT

Client ID: LTB-SD-133-06 8/3/00

Percent Solids: 46.6

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.6			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

040007

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07712

Laboratory: ST LABORATORIES

SDG No.: T07706

Matrix: SEDIMENT Client ID: LTB-SD-133-07 JVR 8/3/00

Percent Solids: 43.8 Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.8			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

040098

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07713

Laboratory: ST LABORATORIES

SDG No.: T07706

Matrix: SEDIMENT

Client ID: LTB-SD-133-22 SH 8/31/00

Percent Solids: 41.4

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.4			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

040099

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07714

Laboratory: ST LABORATORIES

SDG No.: T07706

Matrix: SEDIMENT

Client ID: LTB-SD-133-08 SM 8/3/00

Percent Solids: 48.8

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.4			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

040010

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07715

Laboratory: ST LABORATORIES

SDG No.: T07706

Matrix: SEDIMENT

Client ID: LTB-SD-133-09 JW 8/3/00

Percent Solids: 42.6

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.9			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07716

Laboratory: ST LABORATORIES

SDG No.: T07706

Matrix: SEDIMENT

Client ID: LTB-SD-133-10 JH 8/3/00

Percent Solids: 45.5

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.9			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

040012

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07717

Laboratory: ST LABORATORIES

SDG No.: T07706

Matrix: SEDIMENT

Client ID: LTB-SD-133-11 8/3/00

Percent Solids: 48.9

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.5			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

040013

5. METALS DATA

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07718

Laboratory: ST LABORATORIES

SDG No.: T07718

Matrix: SEDIMENT

Client ID: LTB-SD-134-01

SW 8/3/00

Percent Solids: 54.4

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.72			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07719

Laboratory: ST LABORATORIES

SDG No.: T07718

Matrix: SEDIMENT

Client ID: LTB-SD-134-02 JH 8/3/00

Percent Solids: 39.9

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.6			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07720

Laboratory: ST LABORATORIES

SDG No.: T07718

Matrix: SEDIMENT

Client ID: LTB-SD-134-03

Percent Solids: 39.5

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.6			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07721

Laboratory: ST LABORATORIES

SDG No.: T07718

Matrix: SEDIMENT

Client ID: LTB-SD-134-04

Percent Solids: 47.5

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.4			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07722

Laboratory: ST LABORATORIES

SDG No.: T07718

Matrix: SEDIMENT

Client ID: LTB-SD-134-22 DW 8/3/00

Percent Solids: 41.8

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	3.0			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07723

Laboratory: ST LABORATORIES

SDG No.: T07718

Matrix: SEDIMENT Client ID: LTB-SD-134-05

Percent Solids: 44.2 Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	3.0			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07724

Laboratory: ST LABORATORIES

SDG No.: T07718

Matrix: SEDIMENT

Client ID: LTB-SD-134-06

Percent Solids: 46.1

Date Received: 07/08/00

8/3/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	3.1			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07725

Laboratory: ST LABORATORIES

SDG No.: T07718

Matrix: SEDIMENT

Client ID: LTB-SD-134-07 JM 8/3/00

Percent Solids: 45.5

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.8			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07726

Laboratory: ST LABORATORIES

SDG No.: T07718

Matrix: SEDIMENT

Client ID: LTB-SD-134-08

JW 8/3/00

Percent Solids: 46.5

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.5			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07727

Laboratory: ST LABORATORIES

SDG No.: T07718

Matrix: SEDIMENT

Client ID: LTB-SD-134-07 SH 8/3/00

Percent Solids: 44.5

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	4.1			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07728

Laboratory: ST LABORATORIES

SDG No.: T07718

Matrix: SEDIMENT

Client ID: LTB-SD-134-10 3hr 8/3/00

Percent Solids: 46.8

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.9			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07729

Laboratory: ST LABORATORIES

SDG No.: T07718

Matrix: SEDIMENT

Client ID: LTB-SD-134-11

Percent Solids: 43.8

Date Received: 07/08/00

JVI 8/3/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.5			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

6. METALS DATA

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07693

Laboratory: ST LABORATORIES

SDG No.: T07693

Matrix: SEDIMENT

Client ID: LTB-SD-132-01

JH 8/3/00

Percent Solids: 79.9

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.12			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07694

Laboratory: ST LABORATORIES

SDG No.: T07693

Matrix: SEDIMENT

Client ID: LTB-SD-132-02 JH 8/3/00

Percent Solids: 68.8

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07695

Laboratory: ST LABORATORIES

SDG No.: T07693

Matrix: SEDIMENT

Client ID: LTB-SD-132-03

Percent Solids: 72.2

Date Received: 07/08/00

JH 8/3/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07696

Laboratory: ST LABORATORIES

SDG No.: T07693

Matrix: SEDIMENT

Client ID: LTB-SD-132-04 8/3/00

Percent Solids: 62.6

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07697

Laboratory: ST LABORATORIES

SDG No.: T07693

Matrix: SEDIMENT

Client ID: LTB-SD-132-05 8/3/00

Percent Solids: 68.0

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07698

Laboratory: ST LABORATORIES

SDG No.: T07693

Matrix: SEDIMENT

Client ID: LTB-SD-132-06 JH 8/10/00

Percent Solids: 67.7

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07699

Laboratory: ST LABORATORIES

SDG No.: T07693

Matrix: SEDIMENT

Client ID: LTB-SD-132-[illegible] JH 8/10/00

Percent Solids: 64.4

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07700

Laboratory: ST LABORATORIES

SDG No.: T07693

Matrix: SEDIMENT

Client ID: LTB-SD-132-07 JVC 8/3/00

Percent Solids: 71.6

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.06	B		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

060010

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07701

Laboratory: ST LABORATORIES

SDG No.: T07693

Matrix: SEDIMENT Client ID: LTB-SD-132-08 JH 8/3/02

Percent Solids: 62.8 Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

060011

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07702

Laboratory: ST LABORATORIES

SDG No.: T07693

Matrix: SEDIMENT

Client ID: LTB-SD-132-09 JH 8/3/00

Percent Solids: 70.6

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

060012

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07703

Laboratory: ST LABORATORIES

SDG No.: T07693

Matrix: SEDIMENT Client ID: LTB-SD-132-10 8/3/00

Percent Solids: 70.8 Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07704

Laboratory: ST LABORATORIES

SDG No.: T07693

Matrix: SEDIMENT

Client ID: LTB-SD-132-11

Percent Solids: 86.2

Date Received: 07/08/00

8/3/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

060014

7. METALS DATA

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07680

Laboratory: STL BALTIMORE

SDG No.: T07730

Matrix: WATER Client ID: LTBSD13044

Percent Solids: 0.0 Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.14	B		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070003

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07730

Laboratory: STL BALTIMORE

SDG No.: T07730

Matrix: WATER Client ID: LTBS013444

Percent Solids: 0.0 Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.10	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

8. METALS DATA

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07668

Laboratory: ST LABORATORIES

SDG No.: T07668

Matrix: SEDIMENT Client ID: LTB-SD-130-02 JR 8/4/00

Percent Solids: 76.8 Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.41			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07669

Laboratory: ST LABORATORIES

SDG No.: T07668

Matrix: SEDIMENT

Client ID: LTB-SD-130-22 JH 8/14/00

Percent Solids: 78.9

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.26			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07670

Laboratory: ST LABORATORIES

SDG No.: T07668

Matrix: SEDIMENT

Client ID: LTB-SD-130-03

Percent Solids: 71.9

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.25			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07671

Laboratory: ST LABORATORIES

SDG No.: T07668

Matrix: SEDIMENT

Client ID: LTB-SD-130-04

Percent Solids: 79.7

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.29			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07672

Laboratory: ST LABORATORIES

SDG No.: T07668

Matrix: SEDIMENT

Client ID: LTB-SD-130-42 JH 8/4/00

Percent Solids: 72.0

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.27			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07673

Laboratory: ST LABORATORIES

SDG No.: T07668

Matrix: SEDIMENT

Client ID: LTB-SD-130-05 3hr 01400

Percent Solids: 74.9

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.40			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07674

Laboratory: ST LABORATORIES

SDG No.: T07668

Matrix: SEDIMENT

Client ID: LTB-SD-130-06 JW 8/4/00

Percent Solids: 73.1

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.15			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07675

Laboratory: ST LABORATORIES

SDG No.: T07668

Matrix: SEDIMENT

Client ID: LTB-SD-130-07 JM 8/4/00

Percent Solids: 70.8

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.42			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07676

Laboratory: ST LABORATORIES

SDG No.: T07668

Matrix: SEDIMENT

Client ID: LTB-SD-130-08 JM 8/4/00

Percent Solids: 69.2

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.63			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07677

Laboratory: ST LABORATORIES

SDG No.: T07668

Matrix: SEDIMENT

Client ID: LTB-SD-130-09 JW 8/4/00

Percent Solids: 68.2

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	B		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07678

Laboratory: ST LABORATORIES

SDG No.: T07668

Matrix: SEDIMENT

Client ID: LTB-SD-130-10 JM 8/4/00

Percent Solids: 72.4

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07679

Laboratory: ST LABORATORIES

SDG No.: T07668

Matrix: SEDIMENT

Client ID: LTB-SD-130-11

Percent Solids: 73.2

Date Received: 07/08/00

SW 8/4/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

9. METALS DATA

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07682

Laboratory: ST LABORATORIES

SDG No.: T07682

Matrix: SEDIMENT Client ID: LTB-SD-131-02 SW 8/4/00

Percent Solids: 73.2 Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07683

Laboratory: ST LABORATORIES

SDG No.: T07682

Matrix: SEDIMENT

Client ID: LTB-SD-131-03 JVT 8/4/00

Percent Solids: 76.0

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07684

Laboratory: ST LABORATORIES

SDG No.: T07682

Matrix: SEDIMENT

Client ID: LTB-SD-131-04

Percent Solids: 73.8

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07685

Laboratory: ST LABORATORIES

SDG No.: T07682

Matrix: SEDIMENT

Client ID: LTB-SD-131-05 SW 8/14/00

Percent Solids: 81.6

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07686

Laboratory: ST LABORATORIES

SDG No.: T07682

Matrix: SEDIMENT

Client ID: LTB-SD-131-22 JW 8/4/00

Percent Solids: 83.3

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07687

Laboratory: ST LABORATORIES

SDG No.: T07682

Matrix: SEDIMENT

Client ID: LTB-SD-131-06

Percent Solids: 78.4

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07688

Laboratory: ST LABORATORIES

SDG No.: T07682

Matrix: SEDIMENT

Client ID: LTB-SD-131-07 JRr 8/4/00

Percent Solids: 88.5

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.04	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07689

Laboratory: ST LABORATORIES

SDG No.: T07682

Matrix: SEDIMENT

Client ID: LTB-SD-131-08

MR 8/4/00

Percent Solids: 87.4

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07690

Laboratory: ST LABORATORIES

SDG No.: T07682

Matrix: SEDIMENT

Client ID: LTB-SD-131-09

Percent Solids: 81.3

Date Received: 07/08/00

SVr 8/4/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07691

Laboratory: ST LABORATORIES

SDG No.: T07682

Matrix: SEDIMENT

Client ID: LTB-SD-131-10 SMR 8/4/00

Percent Solids: 87.1

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07692

Laboratory: ST LABORATORIES

SDG No.: T07682

Matrix: SEDIMENT

Client ID: LTB-SD-131-11

Percent Solids: 84.7

Date Received: 07/08/00

M 8/4/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

Fax message

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.
19 Loveton Circle
Sparks, MD 21152

Tel 410 771 4920
Fax 410 771 4407
www.stl-inc.com

Date: 2/7/01

To: MONA

Company: CENAB-HTRW

Fax: 410-962-2318

From: J. O'DONNELL

Subject: FORT TOTTEN

Pages:

PAGES 2-11 CORRECTED FIELD IDs

12-15 FORMS I, COVER TAL METALS LTB SD 13701
13901
14401

16 FORM I TAL METALS LTB SD 14201

MY SINCEREST APOLOGIES, THANK YOU FOR YOUR PATIENCE

JSD

Confidentiality Notice: The information contained in the Facsimile message is privileged and confidential information intended only for the use of the addressee. If the reader of this message is not the intended recipient, or the employee or agent responsible to deliver it to the intended recipient, you are hereby notified that any dissemination, distribution or copying of this communication is strictly prohibited. If you have received this communication in error, please notify us immediately by telephone and please return the original message to us at the above address via the U.S. Postal Service.

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T07485	LTBSD13901
T07497	LTBSD14401
T07521	LTBSD13701
T07521D	LTBSD13701
T07521S	LTBSD13701

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Wendy C VanMiddlesworth Name: Wendy C VanMiddlesworth

Date: 7/29/00 Title: Chemist III

EPA SW846

LAB SAMPLE NUMBER T07521

FORM 1
METALS ANALYSIS DATA SHEET

Laboratory: STL BALTIMORE

SDG No.: T07485

Matrix: SEDIMENT

Client ID: LTBSD13701

Percent Solids: 28.2

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13600			P
7440-36-0	Antimony	1.4		N	P
7440-38-2	Arsenic	10.3		E	P
7440-39-3	Barium	91.5			P
7440-41-7	Beryllium	0.63			P
7440-43-9	Cadmium	2.4			P
7440-70-2	Calcium	6480			P
7440-47-3	Chromium	113			P
7440-48-4	Cobalt	10.3			P
7440-50-8	Copper	220			P
7439-89-6	Iron	31900			P
7439-92-1	Lead	188		N	P
7439-95-4	Magnesium	8780			P
7439-96-5	Manganese	460			P
7440-02-0	Nickel	32.9			P
7440-09-7	Potassium	4830			P
7782-49-2	Selenium	1.7		N	P
7440-22-4	Silver	5.2			P
7440 23-5	Sodium	21900			P
7440-28-0	Thallium	0.37	B		P
7440-62-2	Vanadium	40.0			P
7440-66-6	Zinc	283			P

Corrections per 7/28/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

LAB SAMPLE NUMBER T07485

FORM 1
METALS ANALYSIS DATA SHEET

Laboratory: STL BALTIMORE

SDG No.: T07485

Matrix: SEDIMENT

Client ID: LTBSD13901

Percent Solids: 27.6

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13800			P
7440-36-0	Antimony	1.1		N	P
7440-38-2	Arsenic	9.4		E	P
7440-39-3	Barium	88.2			P
7440-41-7	Beryllium	0.65			P
7440-43-9	Cadmium	2.6			P
7440-70-2	Calcium	9480			P
7440-47-3	Chromium	96.3			P
7440-48-4	Cobalt	10.7			P
7440-50-8	Copper	197			P
7439-89-6	Iron	31400			P
7439-92-1	Lead	171		N	P
7439-95-4	Magnesium	9210			P
7439-96-5	Manganese	495			P
7440-02-0	Nickel	30.6			P
7440-09-7	Potassium	4620			P
7782-49-2	Selenium	1.6		N	P
7440-22-4	Silver	4.3			P
7440-23-5	Sodium	22900			P
7440-28-0	Thallium	0.37	B	E	F
7440-62-2	Vanadium	39.4			P
7440-66-6	Zinc	266			P

Corrections JW 7/28/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA waters by SW7470, soils by SW7471

EPA SW846

LAB SAMPLE NUMBER: T07759

FORM 1
METALS ANALYSIS DATA SHEET

Laboratory: STL BALTIMORE

SDG No.: T07759

Client ID: LTBSD14201

Matrix: SOIL

Date Received: 07/07/00

Percent Solids: 23.5

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	13400		E	P
7440-36-0	Antimony	1.1		N	P
7440-38-2	Arsenic	9.9		E	P
7440-39-3	Barium	77.8		E	P
7440-41-7	Beryllium	0.67			P
7440-43-9	Cadmium	1.0			P
7440-70-2	Calcium	7380		E	P
7440-47-3	Chromium	90.4		E	P
7440-48-4	Cobalt	11.0			P
7440-50-8	Copper	165		E	P
7439-89-6	Iron	34600			P
7439-92-1	Lead	149		E	P
7439-95-4	Magnesium	9500		E	P
7439-96-5	Manganese	538		E	P
7440-02-0	Nickel	29.2			P
7440-09-7	Potassium	4740			P
7782-49-2	Selenium	0.19	B		P
7440-22-4	Silver	3.4			P
7440-23-5	Sodium	26900			P
7440-28-0	Thallium	0.14	B	NW	F
7440-62-2	Vanadium	39.3		E	P
7440-66-6	Zinc	257		E	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

LAB SAMPLE NUMBER T07497

FORM 1
METALS ANALYSIS DATA SHEET

Laboratory: STL BALTIMORE

SDG No.: T07485

Matrix: SEDIMENT

Client ID: LTBSD14401

Percent Solids: 28.8

Date Received: 07/01/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	15100			P
7440-36-0	Antimony	0.94		N	P
7440-38-2	Arsenic	11.4		E	P
7440-39-3	Barium	87.2			P
7440-41-7	Beryllium	0.68			P
7440-43-9	Cadmium	1.8			P
7440-70-2	Calcium	10400			P
7440-47-3	Chromium	93.0			P
7440-48-4	Cobalt	11.4			P
7440-50-8	Copper	183			P
7439-89-6	Iron	33300			P
7439-92-1	Lead	158		N	P
7439-95-4	Magnesium	9450			P
7439-96-5	Manganese	517			P
7440-02-0	Nickel	31.4			P
7440-09-7	Potassium	5010			P
7782-49-2	Selenium	1.1		N	P
7440-22-4	Silver	4.0			P
7440-23-5	Sodium	21200			P
7440-28-0	Thallium	0.27	B		P
7440-62-2	Vanadium	41.8			P
7440-66-6	Zinc	264			P

Corrections Mr Hasloc

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07667

Laboratory: STL BALTIMORE

SDG No.: T07771

Matrix: SEDIMENT

Client ID: LTBS013001

Percent Solids: 69.2

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7620			P
7440-36-0	Antimony	1.0		N	P
7440-38-2	Arsenic	4.1			P
7440-39-3	Barium	103		N	P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	1.2			P
7440-70-2	Calcium	4690		EN	P
7440-47-3	Chromium	42.5		E	P
7440-48-4	Cobalt	8.4			P
7440-50-8	Copper	79.8		E	P
7439-89-6	Iron	17900			P
7439-92-1	Lead	151			P
7439-95-4	Magnesium	5590			P
7439-96-5	Manganese	181		N	P
7439-97-6	Mercury	0.36		*	CV
7440-02-0	Nickel	19.5			P
7440-09-7	Potassium	4220			P
7782-49-2	Selenium	0.45	B		P
7440-22-4	Silver	0.16	U		P
7440-23-5	Sodium	3810			P
7440-28-0	Thallium	0.20	B		F
7440-62-2	Vanadium	27.5		N	P
7440-66-6	Zinc	306		N	P

JH 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

030003

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07705

Laboratory: STL BALTIMORE

SDG No.: T07771

Matrix: SEDIMENT

Client ID: LTBSD13301

Percent Solids: 29.3

Date Received: 07/08/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11800			P
7440-36-0	Antimony	0.68		N	P
7440-38-2	Arsenic	10.1			P
7440-39-3	Barium	81.1		N	P
7440-41-7	Beryllium	0.59			P
7440-43-9	Cadmium	2.0			P
7440-70-2	Calcium	6740		EN	P
7440-47-3	Chromium	96.2		E	P
7440-48-4	Cobalt	9.2			P
7440-50-8	Copper	182		E	P
7439-89-6	Iron	30700			P
7439-92-1	Lead	187			P
7439-95-4	Magnesium	8050			P
7439-96-5	Manganese	408		N	P
7439-97-6	Mercury	1.5		*	CV
7440-02-0	Nickel	28.8			P
7440-09-7	Potassium	4400			P
7782-49-2	Selenium	0.88			P
7440-22-4	Silver	4.3			P
7440-23-5	Sodium	21200			P
7440-28-0	Thallium	0.31	B	W	P
7440-62-2	Vanadium	35.9		N	P
7440-66-6	Zinc	268		N	P

SRV 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

030004

SEVERN
TRENT
SERVICES

STL Baltimore
19 Loveton Circle
Sparks, MD 21152

Tel: 410 771 4920
Fax: 410 771 4407
www.stl-inc.com

August 2, 2000

Mr. Scott Chang
CENAB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Re: Fort Totten (70047.67)

Dear Mr. Chang:

Enclosed is our report on the analysis of 38 soil samples collected for the Fort Totten project on 6 July 2000. The electronic data deliverables (EDD) will follow. The invoice is included.

Please contact me if you have any questions or require further information and refer to report 000849. Unless other arrangements are made, we reserve the right to dispose of your samples sixty (60) days from the date of this letter. We will retain the raw data for seven years from this date.

Sincerely,

Natasha K. Sullivan
Laboratory Project Manager

NKS/gsp
enclosure

SEVERN
TRENT
SERVICES

STL Baltimore

LABORATORY DATA REPORT

Prepared for:

CENAB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Prepared by:

Severn Trent Laboratories
19 Loveton Circle
Sparks, MD 21152

Report 000849

August 2000

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1. NARRATIVE

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000849**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **2 August 2000**

This report contains the results of the analysis of 38 soil samples collected on 6 July 2000 in support of the referenced project.

SAMPLE RECEIPT

The samples arrived with custody seals intact by Federal Express at Severn Trent Laboratories on 7 July 2000. Upon receipt, the samples were inspected and compared with the chain-of-custody records. The samples were then logged into the laboratory computer system with an assigned laboratory accession number and released for analysis.

Client Sample Designation	STL - Baltimore Number
LTB-SD-140-01	0007735
LTB-SD-140-02	0007736
LTB-SD-140-03	0007737
LTB-SD-140-04	0007738
LTB-SD-140-05	0007739
LTB-SD-140-06	0007740
LTB-SD-140-22	0007741
LTB-SD-140-07	0007742
LTB-SD-140-08	0007743
LTB-SD-140-09	0007744
LTB-SD-140-10	0007745
LTB-SD-140-11	0007746
LTB-SD-141-01	0007747
LTB-SD-141-02	0007748
LTB-SD-141-03	0007749
LTB-SD-141-04	0007750
LTB-SD-141-05	0007751
LTB-SD-141-06	0007752
LTB-SD-141-07	0007753
LTB-SD-141-08	0007754
LTB-SD-141-09	0007755
LTB-SD-141-10	0007756
LTB-SD-141-11	0007757
LTB-SD-141-22	0007758
LTB-SD-142-01	0007759
LTB-SD-142-02	0007760
LTB-SD-142-03	0007761
LTB-SD-142-04	0007762
LTB-SD-142-05	0007763

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000849**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **2 August 2000**

LTB-SD-142-06	0007764
LTB-SD-142-07	0007765
LTB-SD-142-22	0007766
LTB-SD-142-08	0007767
LTB-SD-142-09	0007768
LTB-SD-142-10	0007769
LTB-SD-142-11	0007770
FSS-SS-41-01	0007771
FSS-SS-42-01	0007772

Following this narrative section are a glossary of data qualifiers (Tables 1) and the original chain-of-custody records. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

ANALYTICAL METHODS

The analytical methods used by the laboratory are referenced by the STL Baltimore Method SOP which is formatted as STL-M-XXXXX-Y, where XXXXX is the reference method and Y is the SOP revision number. For example, analyses performed using EPA SW846 Method 8260B are identified as STL-M-8260B-3 where 3 is the laboratory SOP revision number. General Chemistry methods which are a consolidation of several reference methods, e.g. STL-M-CN for cyanide determinations, also include the identification of the specific reference method used for the analyses.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune,

calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

METALS - SOIL (STL0007771 - STL0007772)

Sample Chronology: Two samples were prepared by STL-M-3050B-2/7470A/1A-2 on 13 and 16 July 2000 and analyzed for TAL metals by STL-M-6010B-1/7000S-2/7470A/1A-2 on 17 - 20 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

The MS/MSD recoveries (performed on sample FSS-SS-41-01) for antimony (36.7%, 33.6%), barium (73.4%) ms only, manganese (24.6%, 50.9%) vanadium (73.9%) and zinc (32.8%), ms only, were below the QC limit of 75% indicating a potential for negative bias to the sample data for these elements. The MS/MSD recoveries for aluminum, calcium, copper, iron, and lead, could not be reliably determined because the high native concentrations of these elements were significantly higher than the spike concentration added.

The relative percent difference (RPD) between the sample and sample duplicate for mercury (26.1%) was above the QC limit of 20%. This RPD value may indicate a precision deficit for this element.

The percent difference (%D) of calcium (11.2%) , copper (63.3%) and chromium (10.9%) for the serial dilution test was above the QC limit of 10%. This may indicate a possible matrix interference for these elements.

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Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **2 August 2000**

METALS - SOIL (STL0007735 - STL0007746)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 27 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 27 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exception:

The MS recovery (performed on sample LTB-SD-140-01) for mercury (71.7%) was below the QC limit of 75%, indicating a potential for negative bias to the sample data for this element. The MSD (77.4%) and post-digestion spike (82.5%) was within QC limits.

METALS - SOIL (STL0007747 - STL0007758)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 28 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 29 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

METALS - SOIL (STL0007759 - STL0007770)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 28 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 29 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

CERTIFICATION OF RESULTS

The Laboratory certifies that the reported results relate only to those samples tested and that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in STL Baltimore's Quality Assurance program for other than the conditions detailed above. Release of the data

Severn Trent Laboratories
ANALYTICAL NARRATIVE

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Report Date: **2 August 2000**

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contained in this report has been authorized by the Laboratory Project Manager as verified by the following signature.

August 2, 2000

Natasha K. Sullivan, Laboratory Project Manager

TABLE 1. LABORATORY INORGANIC ANALYSIS DATA QUALIFIERS [1]

C ***(Concentration) qualifiers:***

B	Reported value is less than the project-specified Reporting Limit (RL), but greater than the method-specified Instrument Detection Limit (IDL) or Method Detection Limit (MDL).
U	Analyte analyzed for but not detected (concentration is less than the method-specified Instrument Detection Limit (IDL) or Method Detection Limit (MDL).

Q ***(Quality control) qualifiers:***

E	Reported value is estimated because of presence of interference.
M	Duplicate injection precision not met.
N	Spiked sample recovery is not within control limits.
S	Reported value is determined by the method of standard additions (MSA).
W	Postdigestion spike for furnace Atomic Absorption Spectrophotometric (AAS) AAS analysis is out of control limits (85-115%) and sample absorbance is less than 50% of spike absorbance.
*	Duplicate analyses is not within control limits.
+	Correlation coefficient for MSA is less than 0.995.

M ***(Method) qualifiers:***

P	Inductively Coupled Plasma (ICP)
A	Flame AAS
F	Furnace AAS
CV	Cold Vapor AAS
AV	Automated Cold Vapor AAS
AS	Semiautomated Spectrophotometric
C	Manual Spectrophotometric
T	Titrimetric
NR	Analyte is not required to be determined.

(1) These Data Qualifiers are added by the laboratory to provide additional information for the reported results. ***They should not be confused with the qualifiers applied to the reported data as a result of a data validation process performed independently of the laboratory reporting procedure.***

2. CHAIN-OF-CUSTODY

Company Name: USACE	Project Manager or Contact: Scott Chorn
Project No. Ft. TOTTEN Dept.: Task:	Phone: Project Name: Ft. TOTTEN
Sample Storage Location: H11	ATO Number:
Page 1 of 1	Report #: 000849

Methods:
(a) Hg 7471
SAMPLE ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/28/00
LPM: NKS
PS-090

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	Parameters/Method Numbers for: (G)	(a) Hg	Accession Number	Remarks
00 05 JUL	1130		X	LTB-SD-140-01	1	X		0007735	LPM:
	1135			LTB-SD-140-02	1	X		0007736	
	1140			LTB-SD-140-03	1	X		0007737	
	1145			LTB-SD-140-04	1	X		0007738	
	1150			LTB-SD-140-05	1	X		0007739	
	1155			LTB-SD-140-06	1	X		0007740	
	1155			LTB-SD-140-D22	1	X		0007741	
	1200			LTB-SD-140-07	1	X		0007742	
	1205			LTB-SD-140-08	1	X		0007743	
	1210			LTB-SD-140-09	1	X		0007744	
	1215			LTB-SD-140-10	1	X		0007745	
	1220			LTB-SD-140-11	1	X		0007746	
									40402
									618259
									COC007423

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Joé Leise	6JUL 1800	Joé Leise	6JUL 1800	Fed Ex	6JUL 1900
Relinquished by: (Signature)	**Date/Time**	**Received by Laboratory: (Signature)**	**Date/Time**	**Airbill Number:**	**Sample Shipped by: (Circle)**
		Heather Heisler	7/10/00 0821	853074463	Fed Ex Puro. UPS Hand Carried Other:

Cooler Temp. 3 °C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

2

Company Name: USACE	Project Manager or Contact: Phone: Sco A Chang
Project No. Ft. TOTTEN Dept.: Task:	Project Name: Ft. TOTTEN
Sample Storage Location: H11	ATO Number:
Page 1 of 1	Report #: 000849

Parameters/Method Numbers f

Methods:
(a) Hg 7471
SAMPLES ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/28/00
LPM: NKS
PS-090

00 Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	HG (a)	Number	Remarks
6JUL	1010		X	4TB-SD-141-01	1	X	0007747	LPM:
	1015			4TB-SD-141-02	1	X	0007748	
	1020			4TB-SD-141-03	1	X	0007749	
	1025			4TB-SD-141-04	1	X	0007750	
	1030			4TB-SD-141-05	1	X	0007751	
	1035			4TB-SD-141-06	1	X	0007752	
	1040			4TB-SD-141-07	1	X	0007753	
	1045			4TB-SD-141-08	1	X	0007754	
	1050			4TB-SD-141-09	1	X	0007755	
	1055			4TB-SD-141-10	1	X	0007756	
	1100			4TB-SD-141-11	1	X	0007757	
	1100			4TB-SD-141-22	1	X	0007758	

Joe Leise

4oz
L18259
COC0007423

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
JOE Leise	6 JUL 1900	JOE Leise	6 JUL 1900		
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		Carley Hesky	7/10 1030	8213530 76463	Fed Ex. Puro. UPS

Cooler Temp. 5 C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

Hand Carried
Other:

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

200030

3

Company Name: USACE	Project Manager or Contact: Scott Chang Phone:
Project No. Ft. Totten Dept.: Task:	Project Name: Ft. Totten
Sample Storage Location: H11	ATO Number:
Page 1 of 1	Report #: 000849

Parameters/Method Numbers for

Methods:
(a) Hg 7471
SAMPLE ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/28/00
LPM: NKS
PS-090

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	Hg (a)	Number	Remarks
6 JUL	0900		X	4TB-SD-142-01	1	X	0007759	LPM:
	0905			4TB-SD-142-02	1	X	0007760	
	0910			4TB-SD-142-03	1	X	0007761	
	0915			4TB-SD-142-04	1	X	0007762	
	0920			4TB-SD-142-05	1	X	0007763	
	0925			4TB-SD-142-06	1	X	0007764	
	0930			4TB-SD-142-07	1	X	0007765	
	0930			4TB-SD-142-22	1	X	0007766	
	0935			4TB-SD-142-08	1	X	0007767	
	0940			4TB-SD-142-09	1	X	0007768	
	0945			4TB-SD-142-10	1	X	0007769	
	0950			4TB-SD-142-11	1	X	0007770	
								40-402
								L18259
								COC0007423

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
JOE Leise		JOE Leise		Fed EX	
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		Cathy Hershey	7/7/00 1030	8243 530 76463	Fed Ex Puro. UPS Hand Carried Other:

Cooler Temp. 5 C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

4

Company Name: USACE	Project Manager or Contact: Scott Chang Phone:
Project No. Ft. TOTTEN Dept.: Task:	Project Name: Ft. TOTTEN
Sample Storage Location: H11	ATO Number:
Page 1 of 1	Report #: 000849

Parameters/Method Numbers for /

Methods:
(a) Hg 7471
SAMPLES ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
DUE 7/28/00
LPM: NKS
PS-090

00 Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	TAL Metals	6010/7000 SERIES	Number	Remarks
5JUL	1630			FSS-SS-41-01	2	X		000771	LPM:
5JUL	1700			FSS-SS-42-01	2	X		000772	
									40-402
									L18259
									COC0007423

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
JOE Leise	6 JUL 1900	JOE Leise	6 JUL 1900	Fed EX	
Relinquished by: (Signature)	**Date/Time**	**Received by Laboratory: (Signature)**	**Date/Time**	**Airbill Number:**	**Sample Shipped by: (Circle)**
		Cathy Hershey	7/7/00 1030	8213 5707 6463	~~Fed Ex~~ Puro. UPS

Cooler Temp. 5 C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

Hand Carried

Other:

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

Severn Trent Laboratories
STL Baltimore

19 Loveton Circle
Sparks, Maryland 21152
(410) 771-4920

Committed to *Your* Success

COOLER RECEIPT CHECKLIST

Report: 000849

Project: Ft. Totten
Received: 07-JUL-00 10:30
COC: COC0007423
Samples: 0007735-0007772

A. COOLER INSPECTION:

Date cooler was opened: 7/7/00 Date — Cathy Heisney Custodian Signature

1. Did cooler come with a shipping slip, air bill, etc? YES NO N/A NCR# _____
1a. Circle courier: Federal Express UPS *Air bill Number from Chain-of-Custody* 821353076463
1b. Circle, if applicable: Handcarried Other

2. Custody seals were present on outside of cooler? YES NO N/A NCR# _____
3. Custody seals were unbroken at the time of arrival? YES NO N/A NCR# _____
4. Chain-of-Custody (COC)records were present and legible? YES NO N/A NCR# _____
5. Were the COC records completed? YES NO N/A NCR# _____
6. Was cooler temperature 4C ± 2C? YES NO N/A NCR# _____
50

B. SAMPLE INSPECTION

9. All bottles arrived unbroken? YES NO N/A NCR# _____
10. All bottles labels were legible and complete? YES NO N/A NCR# _____
11. Containers were correct for the analysis listed on the COC? YES NO N/A NCR# _____
12. Were preservatives checked (except VOA vials)? YES NO N/A NCR# _____
13. Were bubbles absent in Volatiles samples? YES NO N/A NCR# _____

Special Notes:

Jennifer E Jessen 7/7/00
Sample Management Officer Date

M:\GROUP\QA\FORMS\COOLER.WPD

September 29, 1999/mmu

A. Analytical Results

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.	
T07667	LTBS013001	Report # 846
T07705	LTBSD13301	
T07771	FSSSS4101	Report # 849
T07771D	FSSSS4101D	
T07771S	FSSSS4101S	
T07772	FSSSS4201	

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Wendy C VanMiddlesworth Name: Wendy C VanMiddlesworth

Date: 7/24/03 Title: Chemist III

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07771

Laboratory: STL BALTIMORE

SDG No.: T07771

Matrix: SEDIMENT Client ID: FSSSS4101

Percent Solids: 79.3 Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2280			P
7440-36-0	Antimony	0.39	B	N	P
7440-38-2	Arsenic	4.4			P
7440-39-3	Barium	79.0		N	P
7440-41-7	Beryllium	0.19	B		P
7440-43-9	Cadmium	0.31	B		P
7440-70-2	Calcium	3250		EN	P
7440-47-3	Chromium	7.9		E	P
7440-48-4	Cobalt	10.0			P
7440-50-8	Copper	310		E	P
7439-89-6	Iron	5790			P
7439-92-1	Lead	536			P
7439-95-4	Magnesium	490			P
7439-96-5	Manganese	80.3		N	P
7439-97-6	Mercury	0.77		*	CV
7440-02-0	Nickel	9.5			P
7440-09-7	Potassium	376			P
7782-49-2	Selenium	0.50			P
7440-22-4	Silver	2.4			P
7440-23-5	Sodium	154			P
7440-28-0	Thallium	0.12	U		F
7440-62-2	Vanadium	16.0		N	P
7440-66-6	Zinc	154		N	P

JH 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07772

Laboratory: STL BALTIMORE

SDG No.: T07771

Matrix: SEDIMENT

Client ID: FSSSS4201

Percent Solids: 84.6

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6750			P
7440-36-0	Antimony	0.21	U	N	P
7440-38-2	Arsenic	5.5			P
7440-39-3	Barium	80.2		N	P
7440-41-7	Beryllium	0.41	B		P
7440-43-9	Cadmium	0.86			P
7440-70-2	Calcium	3970		EN	P
7440-47-3	Chromium	17.5		E	P
7440-48-4	Cobalt	35.5			P
7440-50-8	Copper	83.7		E	P
7439-89-6	Iron	13400			P
7439-92-1	Lead	793			P
7439-95-4	Magnesium	2130			P
7439-96-5	Manganese	245		N	P
7439-97-6	Mercury	4.5		*	CV
7440-02-0	Nickel	17.3			P
7440-09-7	Potassium	1140			P
7782-49-2	Selenium	0.88			P
7440-22-4	Silver	1.2			P
7440-23-5	Sodium	171			P
7440-28-0	Thallium	0.12	B		F
7440-62-2	Vanadium	19.6		N	P
7440-66-6	Zinc	223		N	P

JW 7/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

A. Analytical Results

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory ST LABORATORIES

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T07735	LTB-SD-140-01
T07735D	LTB-SD-140-01D
T07735S	LTB-SD-140-01S
T07736	LTB-SD-140-02
T07737	LTB-SD-140-03
T07738	LTB-SD-140-04
T07739	LTB-SD-140-05
T07740	LTB-SD-140-06
T07741	LTB-SD-140-22
T07742	LTB-SD-140-07
T07743	LTB-SD-140-08
T07744	LTB-SD-140-09
T07745	LTB-SD-140-10
T07746	LTB-SD-140-11

JW 7/20/00

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirnon Name: Judy S. KIRNON

Date: 31 July 2000 Title: LAB TECHNICIAN

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07735

Laboratory: ST LABORATORIES

SDG No.: T07735

Matrix: SEDIMENT Client ID: LTB-SD-140-01

Percent Solids: 30.2 Date Received: 07/07/00

JHY 7/30/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.0		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07736

Laboratory: ST LABORATORIES

SDG No.: T07735

Matrix: SEDIMENT

Client ID: LTB-SD-140-02

Percent Solids: 48.3

Date Received: 07/07/00 7/30/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.7		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07737

Laboratory: ST LABORATORIES

SDG No.: T07735

Matrix: SEDIMENT Client ID: LTB-SD-140-03

Percent Solids: 38.3 Date Received: 07/07/00

JH 7/30/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.3		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

040005

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07738

Laboratory: ST LABORATORIES

SDG No.: T07735

Matrix: SEDIMENT

Client ID: LTB-SD-140-04

Percent Solids: 49.6

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.67		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07739

Laboratory: ST LABORATORIES

SDG No.: T07735

Matrix: SEDIMENT

Client ID: LTB-SD-140-05

JW 7/30/00

Percent Solids: 44.9

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.6		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by-SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07740

Laboratory: ST LABORATORIES

SDG No.: T07735

Matrix: SEDIMENT

Client ID: LTB-SD-140-06

Percent Solids: 65.0

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.64		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07741

Laboratory: ST LABORATORIES

SDG No.: T07735

Matrix: SEDIMENT

Client ID: LTB-SD-140-22

Percent Solids: 63.0

Date Received: 07/07/00

JW 7/30/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.76		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07742

Laboratory: ST LABORATORIES

SDG No.: T07735

Matrix: SEDIMENT

Client ID: LTB-SD-140-07

JW 7/30/00

Percent Solids: 49.5

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.8		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by-SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

040010

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07743

Laboratory: ST LABORATORIES

SDG No.: T07735

Matrix: SEDIMENT

Client ID: LTB-SD-140-08

Percent Solids: 66.7

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.73		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07744

Laboratory: ST LABORATORIES

SDG No.: T07735

Matrix: SEDIMENT

Client ID: LTB-SD-140-09

Percent Solids: 54.9

Date Received: 07/07/00

JHr 7/30/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.71		N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07745

Laboratory: ST LABORATORIES

SDG No.: T07735

Matrix: SEDIMENT Client ID: LTB-SD-140-10

Percent Solids: 56.4 Date Received: 07/07/00

JHr 7/30/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U	N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07746

Laboratory: ST LABORATORIES

SDG No.: T07735

Matrix: SEDIMENT

Client ID: LTB-SD-140-11 JW 7/30/00

Percent Solids: 55.6

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	U	N	CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

A. Analytical Results

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T07747	LTBSD14101
T07747D	LTBSD14101D) @ell100
T07747S	LTBSD14101S
T07748	LTBSD14102
T07749	LTBSD14103
T07750	LTBSD14104
T07751	LTBSD14105
T07752	LTBSD14106
T07753	LTBSD14107
T07754	LTBSD14108
T07755	LTBSD14109
T07756	LTBSD14110
T07757	LTBSD14111
T07758	LTBSD14122

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirnon Name: Judy S. Kirnon

Date: 1 August 2000 Title: LAB TECHNICIAN

050002

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07747

Laboratory: STL BALTIMORE

SDG No.: T07747

Matrix: SOIL Client ID: LTBSD14101

Percent Solids: 26.1 Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.1			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07748

Laboratory: STL BALTIMORE

SDG No.: T07747

Matrix: SOIL Client ID: LTBSD14102

Percent Solids: 33.3 Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.7			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07749

Laboratory: STL BALTIMORE

SDG No.: T07747

Matrix: SOIL

Client ID: LTBSD14103

Percent Solids: 27.8

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.2			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07750

Laboratory: STL BALTIMORE

SDG No.: T07747

Matrix: SOIL

Client ID: LTBSD14104

Percent Solids: 29.1

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.7			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07751

Laboratory: STL BALTIMORE

SDG No.: T07747

Matrix: SOIL

Client ID: LTBSD14105

Percent Solids: 34.7

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.8			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07752

Laboratory: STL BALTIMORE

SDG No.: T07747

Matrix: SOIL

Client ID: LTBSD14106

Percent Solids: 28.7

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.5			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

050008

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07753

Laboratory: STL BALTIMORE

SDG No.: T07747

Matrix: SOIL

Client ID: LTBSD14107

Percent Solids: 34.7

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.4			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07754

Laboratory: STL BALTIMORE

SDG No.: T07747

Matrix: SOIL

Client ID: LTBSD14108

Percent Solids: 43.3

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.2			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07755

Laboratory: STL BALTIMORE

SDG No.: T07747

Matrix: SOIL

Client ID: LTBSD14109

Percent Solids: 46.2

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.9			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07756

Laboratory: STL BALTIMORE

SDG No.: T07747

Matrix: SOIL Client ID: LTBSD14110

Percent Solids: 43.2 Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.9			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07757

Laboratory: STL BALTIMORE

SDG No.: T07747

Matrix: SOIL

Client ID: LTBSD14111

Percent Solids: 78.9

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.20			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07758

Laboratory: STL BALTIMORE

SDG No.: T07747

Matrix: SOIL

Client ID: LTBSD14122

Percent Solids: 60.8

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.52			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

A. Analytical Results

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T07759	LTBSD14201
T07759D	LTBSD14201D
T07759S	LTBSD14201S
T07760	LTBSD14202
T07761	LTBSD14203
T07762	LTBSD14204
T07763	LTBSD14205
T07764	LTBSD14206
T07765	LTBSD14207
T07766	LTBSD14222
T07767	LTBSD14208
T07768	LTBSD14209
T07769	LTBSD14210
T07770	LTBSD14211

) for 8/1/00

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirnon Name: Judy S. Kirnon

Date: 1 August 2000 Title: Lab Technician

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07759

Laboratory: STL BALTIMORE

SDG No.: T07759

Matrix: SOIL

Client ID: LTBSD14201

Percent Solids: 23.5

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.1			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07760

Laboratory: STL BALTIMORE

SDG No.: T07759

Matrix: SOIL Client ID: LTBSD14202

Percent Solids: 30.7 Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.8			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07761

Laboratory: STL BALTIMORE

SDG No.: T07759

Matrix: SOIL

Client ID: LTBSD14203

Percent Solids: 28.1

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.97			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07762

Laboratory: STL BALTIMORE

SDG No.: T07759

Matrix: SOIL

Client ID: LTBSD14204

Percent Solids: 29.7

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.2			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07763

Laboratory: STL BALTIMORE

SDG No.: T07759

Matrix: SOIL

Client ID: LTBSD14205

Percent Solids: 30.7

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.6			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T07764

Laboratory: STL BALTIMORE

SDG No.: T07759

Matrix: SOIL

Client ID: LTBSD14206

Percent Solids: 33.5

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.9			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07765

Laboratory: STL BALTIMORE

SDG No.: T07759

Matrix: SOIL Client ID: LTBSD14207

Percent Solids: 36.7 Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.5			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07766

Laboratory: STL BALTIMORE

SDG No.: T07759

Matrix: SOIL Client ID: LTBSD14222

Percent Solids: 38.4 Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.4			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07767

Laboratory: STL BALTIMORE

SDG No.: T07759

Matrix: SOIL Client ID: LTBSD14208

Percent Solids: 41.3 Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	2.1			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07768

Laboratory: STL BALTIMORE

SDG No.: T07759

Matrix: SOIL Client ID: LTBSD14209

Percent Solids: 71.6 Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.44			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

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EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07769

Laboratory: STL BALTIMORE

SDG No.: T07759

Matrix: SOIL Client ID: LTBSD14210

Percent Solids: 48.8 Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	1.2			CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T07770

Laboratory: STL BALTIMORE

SDG No.: T07759

Matrix: SOIL

Client ID: LTBSD14211

Percent Solids: 79.8

Date Received: 07/07/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7439-97-6	Mercury	0.05	B		CV

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

February 20, 2001

Mr. Scott Chang
CENAB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Re: Fort Totten (70047.67)

Dear Mr. Chang:

Enclosed is an addendum to our report on the analysis of 38 soil samples collected for the Fort Totten project on 6 July 2000. As you requested, sample LTB-SD-142-01 has been analyzed for TAL Metals. The electronic data deliverables (EDD) will follow. The invoice is included.

Please contact me if you have any questions or require further information and refer to report 000849add. Unless other arrangements are made, we reserve the right to dispose of your samples sixty (60) days from the date of this letter. We will retain the raw data for seven years from this date.

Sincerely,

Natasha K. Sullivan
Laboratory Project Manager

NKS/gsp
enclosure

LABORATORY DATA REPORT

Prepared for:

CENAB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Prepared by:

Severn Trent Laboratories
19 Loveton Circle
Sparks, MD 21152

Report 000849add

February 2001

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000849add**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **20 February 2001**

This report contains the results of the analysis of 38 soil samples collected on 6 July 2000 in support of the referenced project.

SAMPLE RECEIPT

The samples arrived with custody seals intact by Federal Express at Severn Trent Laboratories on 7 July 2000. Upon receipt, the samples were inspected and compared with the chain-of-custody records. The samples were then logged into the laboratory computer system with an assigned laboratory accession number and released for analysis.

Client Sample Designation	STL - Baltimore Number
LTB-SD-140-01	0007735
LTB-SD-140-02	0007736
LTB-SD-140-03	0007737
LTB-SD-140-04	0007738
LTB-SD-140-05	0007739
LTB-SD-140-06	0007740
LTB-SD-140-22	0007741
LTB-SD-140-07	0007742
LTB-SD-140-08	0007743
LTB-SD-140-09	0007744
LTB-SD-140-10	0007745
LTB-SD-140-11	0007746
LTB-SD-141-01	0007747
LTB-SD-141-02	0007748
LTB-SD-141-03	0007749
LTB-SD-141-04	0007750
LTB-SD-141-05	0007751
LTB-SD-141-06	0007752
LTB-SD-141-07	0007753
LTB-SD-141-08	0007754
LTB-SD-141-09	0007755
LTB-SD-141-10	0007756
LTB-SD-141-11	0007757
LTB-SD-141-22	0007758
LTB-SD-142-01	0007759
LTB-SD-142-02	0007760

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000849add**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **20 February 2001**

LTB-SD-142-03	0007761
LTB-SD-142-04	0007762
LTB-SD-142-05	0007763
LTB-SD-142-06	0007764
LTB-SD-142-07	0007765
LTB-SD-142-22	0007766
LTB-SD-142-08	0007767
LTB-SD-142-09	0007768
LTB-SD-142-10	0007769
LTB-SD-142-11	0007770
FSS-SS-41-01	0007771
FSS-SS-42-01	0007772

Following this narrative section are a glossary of data qualifiers (Tables 1) and the original chain-of-custody records. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

ANALYTICAL METHODS

The analytical methods used by the laboratory are referenced by the STL Baltimore Method SOP which is formatted as STL-M-XXXXX-Y, where XXXXX is the reference method and Y is the SOP revision number. For example, analyses performed using EPA SW846 Method 8260B are identified as STL-M-8260B-3 where 3 is the laboratory SOP revision number. General Chemistry methods which are a consolidation of several reference methods, e.g. STL-M-CN for cyanide determinations, also include the identification of the specific reference method used for the analyses.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the

sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

METALS - SOIL (STL0007759)

Sample Chronology: One sample was prepared by STL-M-3050B-2/7470A/1A-2 on 25 August 2000. Inadvertently the sample was not adjusted for percent moisture and was re-prepared on 12 September and analyzed for Target Analyte List (TAL) metals minus mercury by STL-M-6010B-1/7000S-2/7470A/1A-13-14 September 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

The MS/MSD recoveries (performed on sample LTBSD14201) for antimony (21.8%, 16.6%) and thallium (60.3%, 62.1%) were below the QC limit of 75%, indicating a potential for negative bias to the sample data for these elements. The post-digestion spike was within QC limits. The MS/MSD recoveries for aluminum calcium, iron, magnesium, manganese and sodium, could not be reliably determined because the high native concentrations of these elements were significantly higher than the spike concentration added.

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000849add**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **20 February 2001**

The percent difference (%D) for several elements for the serial dilution test are above the QC limit of (10%). This may indicate a slight matrix bias for these element.

CERTIFICATION OF RESULTS

The Laboratory certifies that the reported results relate only to those samples tested and that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in STL Baltimore's Quality Assurance program for other than the conditions detailed above. Release of the data contained in this report has been authorized by the Laboratory Project Manager as verified by the following signature.

_____ February 20, 2001
Natasha K. Sullivan, Laboratory Project Manager

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Severn Trent Laboratories Report 000849add

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February 20, 2001

Mr. Scott Chang
CENAB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Re: Fort Totten (70047.67)

Dear Mr. Chang:

Enclosed is our report on the analysis of 38 soil samples collected for the Fort Totten project on 6 July 2000. The electronic data deliverables (EDD) will follow. The invoice is included.

Please contact me if you have any questions or require further information and refer to report 000849. Unless other arrangements are made, we reserve the right to dispose of your samples sixty (60) days from the date of this letter. We will retain the raw data for seven years from this date.

Sincerely,

Natasha K. Sullivan
Laboratory Project Manager

NKS/gsp
enclosure

LABORATORY DATA REPORT

Prepared for:

CENAB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Prepared by:

Severn Trent Laboratories
19 Loveton Circle
Sparks, MD 21152

Report 000849

February 2001

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000849**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **20 February 2001**

This report contains the results of the analysis of 38 soil samples collected on 6 July 2000 in support of the referenced project.

SAMPLE RECEIPT

The samples arrived with custody seals intact by Federal Express at Severn Trent Laboratories on 7 July 2000. Upon receipt, the samples were inspected and compared with the chain-of-custody records. The samples were then logged into the laboratory computer system with an assigned laboratory accession number and released for analysis.

Client Sample Designation	STL - Baltimore Number
LTB-SD-140-01	0007735
LTB-SD-140-02	0007736
LTB-SD-140-03	0007737
LTB-SD-140-04	0007738
LTB-SD-140-05	0007739
LTB-SD-140-06	0007740
LTB-SD-140-22	0007741
LTB-SD-140-07	0007742
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LTB-SD-140-10	0007745
LTB-SD-140-11	0007746
LTB-SD-141-01	0007747
LTB-SD-141-02	0007748
LTB-SD-141-03	0007749
LTB-SD-141-04	0007750
LTB-SD-141-05	0007751
LTB-SD-141-06	0007752
LTB-SD-141-07	0007753
LTB-SD-141-08	0007754
LTB-SD-141-09	0007755
LTB-SD-141-10	0007756
LTB-SD-141-11	0007757
LTB-SD-141-22	0007758
LTB-SD-142-01	0007759
LTB-SD-142-02	0007760
LTB-SD-142-03	0007761
LTB-SD-142-04	0007762

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000849**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **20 February 2001**

LTB-SD-142-05	0007763
LTB-SD-142-06	0007764
LTB-SD-142-07	0007765
LTB-SD-142-22	0007766
LTB-SD-142-08	0007767
LTB-SD-142-09	0007768
LTB-SD-142-10	0007769
LTB-SD-142-11	0007770
FSS-SS-41-01	0007771
FSS-SS-42-01	0007772

Following this narrative section are a glossary of data qualifiers (Tables 1) and the original chain-of-custody records. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

ANALYTICAL METHODS

The analytical methods used by the laboratory are referenced by the STL Baltimore Method SOP which is formatted as STL-M-XXXXX-Y, where XXXXX is the reference method and Y is the SOP revision number. For example, analyses performed using EPA SW846 Method 8260B are identified as STL-M-8260B-3 where 3 is the laboratory SOP revision number. General Chemistry methods which are a consolidation of several reference methods, e.g. STL-M-CN for cyanide determinations, also include the identification of the specific reference method used for the analyses.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**	STL Baltimore Report: **000849**
Site: **Fort Totten**	Laboratory Project Manager: **Natasha K. Sullivan**
Project number: **70047.67**	Report Date: **20 February 2001**

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

METALS - SOIL (STL0007771 - STL0007772)

Sample Chronology: Two samples were prepared by STL-M-3050B-2/7470A/1A-2 on 13 and 16 July 2000 and analyzed for TAL metals by STL-M-6010B-1/7000S-2/7470A/1A-2 on 17 - 20 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

The MS/MSD recoveries (performed on sample FSS-SS-41-01) for antimony (36.7%, 33.6%), barium (73.4%) ms only, manganese (24.6%, 50.9%) vanadium (73.9%) and zinc (32.8%), ms only, were below the QC limit of 75% indicating a potential for negative bias to the sample data for these elements. The MS/MSD recoveries for aluminum, calcium, copper, iron, and lead, could not be reliably determined because the high native concentrations of these elements were significantly higher than the spike concentration added.

The relative percent difference (RPD) between the sample and sample duplicate for mercury (26.1%) was above the QC limit of 20%. This RPD value may indicate a precision deficit for this element.

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**	STL Baltimore Report: **000849**
Site: **Fort Totten**	Laboratory Project Manager: **Natasha K. Sullivan**
Project number: **70047.67**	Report Date: **20 February 2001**

The percent difference (%D) of calcium (11.2%) , copper (63.3%) and chromium (10.9%) for the serial dilution test was above the QC limit of 10%. This may indicate a possible matrix interference for these elements.

METALS - SOIL (STL0007735 - STL0007746)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 27 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 27 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exception:

The MS recovery (performed on sample LTB-SD-140-01) for mercury (71.7%) was below the QC limit of 75%, indicating a potential for negative bias to the sample data for this element. The MSD (77.4%) and post-digestion spike (82.5%) was within QC limits.

METALS - SOIL (STL0007747 - STL0007758)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 28 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 29 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

METALS - SOIL (STL0007759 - STL0007770)

Sample Chronology: Twelve samples were prepared by STL-M-7470A/1A-2 on 28 July 2000 and analyzed for mercury by STL-M-7470A/1A-2 on 29 July 2000. All holding times were met.

Severn Trent Laboratories
ANALYTICAL NARRATIVE

Client: **U.S. A.C.E.**	STL Baltimore Report: **000849**
Site: **Fort Totten**	Laboratory Project Manager: **Natasha K. Sullivan**
Project number: **70047.67**	Report Date: **20 Februàry 2001**

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

CERTIFICATION OF RESULTS

The Laboratory certifies that the reported results relate only to those samples tested and that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in STL Baltimore's Quality Assurance program for other than the conditions detailed above. Release of the data contained in this report has been authorized by the Laboratory Project Manager as verified by the following signature.

_____February 20, 2001
Natasha K. Sullivan, Laboratory Project Manager

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Severn Trent Laboratories Report 000849

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Fort Tooten
Severn Trent Laboratories Report 000849

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SEVERN
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SERVICES

STL Baltimore
19 Loveton Circle
Sparks, MD 21152

Tel: 410 771 4920
Fax: 410 771 4407
www.stl-inc.com

August 24, 2000

Mr. Scott Chang
CENB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Re: Fort Totten (70047.67)

Dear Mr. Chang:

Enclosed is our report on the analysis of three water and two soil samples collected for the Fort Totten project on 8, 11, and 12 July 2000. The electronic data deliverables (EDD) will follow. The invoice is included.

Please contact me if you have any questions or require further information and refer to report 000877. Unless other arrangements are made, we reserve the right to dispose of your samples sixty (60) days from the date of this letter. We will retain the raw data for seven years from this date.

Sincerely,

Natasha K. Sullivan
Laboratory Project Manager

NKS/gsp
enclosure

SEVERN TRENT SERVICES

STL Baltimore

LABORATORY DATA REPORT

Prepared for:
CENB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Prepared by:

Severn Trent Laboratories, Inc. - Baltimore
19 Loveton Circle
Sparks, MD 46052

Report 000877

August 2000

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Fort Totten
STL Report 000877

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		6. Internal Standard (Form VIII)	040017
	B.	Sample Data (Form I)	040025
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		1. BFB	040153
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		3. Matrix Spike (Form I + raw instrument data)	040173
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STL Report 000877

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		1. Surrogate Percent Recovery (Form II)	050002
		2. MS/MSD Recovery	050003
		3. LCS Recovery	050005
		4. Method Blank Summary (Form IV)	050008
	B.	Sample Data (Form I)	050010
		1. Data for Sample MW3-GW-01-01	050011
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1. NARRATIVE

010060

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: **EN-HT, HTRW Engineering**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000877**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **24 August 2000**

This report contains the results of the analysis of three water and two soil samples collected on 8, 11, and 12 July 2000 in support of the referenced project.

SAMPLE RECEIPT

The samples arrived with custody seals absent and intact by Federal Express and by hand at Severn Trent Laboratories - Baltimore on 13 July 2000. Upon receipt, the samples were inspected and compared with the chain-of-custody records. The samples were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis.

Client Sample Designation	STL - Baltimore Number
MW3-GW-01-01	0008079
MW1-GW-01-01	0008080
MW4-GW-01-66A	0008081
FSS-SS-43-01	0008082
FSS-SS-44-01	0008083
MW5-GW-01-01	0008100
MW4-GW-01-55	0008101
MW4-GW-01-66-B	0008102

Following this narrative section are glossaries of data qualifiers (Tables 1 and 2), codes associated with manual integration of chromatographic peaks (Table 3), and the original chain-of-custody records. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

ANALYTICAL METHODS

The analytical methods used by the laboratory are referenced by the STL Baltimore Method SOP which is formatted as STL-M-XXXXX-Y, where XXXXX is the reference method and Y is the SOP revision number. For example, analyses performed using EPA SW846 Method 8260B are identified as STL-M-8260B-3 where 3 is the laboratory SOP revision number. General Chemistry methods which are a consolidation of several reference methods, e.g. STL-M-CN for cyanide determinations, also include the identification of the specific reference method used for the analyses.

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: **EN-HT, HTRW Engineering**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000877**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **24 August 2000**

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - WATER (STL0008079 - STL0008081, ST0008100 - ST0008102)

Sample Chronology: Six samples and associated quality control were analyzed on16 and 18 July 2000 for the client specified list of analytes following the procedures specified in STL-M-5030B-0/STL-M-8260B-4using a 25 ml purge volume. All holding times were met.

The batch MS/MSD, analyzed on 18 Jun 2000, was performed on another client's sample. All data associated with these QC samples are included in this report to fulfill reporting requirements. However, recoveries are not evaluated since they do not apply to the samples associated with this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: **EN-HT, HTRW Engineering**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000877**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **24 August 2000**

Sample Performance: All quality control criteria were met for the reported samples.

SEMIVOLATILES by GC/MS - WATER (STL0008079-STL0008080; STL0008100-STL0008101)

Sample Chronology: Four samples and associated quality control were extracted on 17 and 18 July 2000, following the procedures specified in STL-M-3520C-0. The resultant extracts were analyzed from 21 through 31 July 2000 for the project specific list of analytes following the procedures specified in STL-M-8270C-2. All holding times were met. Due to low surrogate recoveries, samples MW4-GW-01-55 and MW5-GW-01-01 were re-extracted outside of holding time on 07 August 2000 and re-analyzed on 10 August 2000. Both the original and re-extraction data has been included in this report.

Due to insufficient sample volume, batch MS/MSDs were not performed with the samples extracted on 17 and 18 July 2000. As such, duplicate LCSs were performed in order to provide precision data. The MS/MSD associated with the re-extracted samples was performed on another client's sample. All data associated with these QC samples has been included, however recoveries were not evaluated since they do not pertain to the samples in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exceptions:

The method blank (SB007181), associated with the 18 July 2000 extraction batch, had the recoveries for the surrogates, nitrobenzene-d5 (52%) and 2-fluorobiphenyl (59%), slightly below the lower QC limits of 59% and 68%, respectively.

The method blank (SB008073), associated with the re-extracted samples, had the recovery for the surrogate, terphenyl-d14, just below the lower QC limit of 68% at 66%. This recovery is not indicative of a significant negative bias.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

Samples MW3-GW-01-01, MW4-GW-01-55 and MW5-GW-01-01 had the recoveries for one or more surrogates slightly below the lower laboratory QC limits. The recoveries for the acid extractable surrogates in sample MW4-GW-01-55 were significantly below the lower QC limits,

indicating the need for re-extraction. This sample, as well as sample MW5-GW-01-01, was re-extracted with all surrogate recoveries within QC limits.

PAHs by HPLC- WATER (ST0008079, ST0008080, STL0008100, and STL0008101)

Sample Chronology: Four samples and associated quality control were extracted on 14, and 18 July 2000 by Method STL-M-3510C-REV3. The sample extracts and associated QC extracts were analyzed on 16 and 17 August 2000 for the method specified list of analytes by Method STL-M-8310-REV1. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exception:

sample (NL0007181) had the recovery of anthracene (19%) and benzo[a]pyrene (10%) below the lower laboratory QC limits of 45%/52%, respectively.

Sample Performance: All sample performance criteria were met for the reported samples with the following exception:

the batch MS, performed on sample MW1-GW-01-01, had the recovery of benzo[a]pyrene (47%) below the lower laboratory QC limit of 52%.

HERBICIDES by GC - WATER (STL0008079-STL0008080; STL0008100-STL0008101)

Sample Chronology: Four samples and associated QC were extracted on 14 and 19 July 2000 and analyzed on 27 and 28 July 2000 following the procedures specified in STL-M-8151A-1 for pentachlorophenol. All hold times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

METALS - WATER (STL0008079, STL0008080, STL0008100, STL0008101)

Sample Chronology: Four samples were prepared by STL-M-3010A-2/3020A-3/7470A/1A-2 on 19 and 20 July 2000 and analyzed for TAL metals by STL-M-6010B-1/7000S-2/7470A/1A-2 on 20 and 21 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exception:

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: **EN-HT, HTRW Engineering**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000877**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **24 August 2000**

The method blank had the target analyte lead (6.357 ug/L) detected slightly above the reporting limit (3.0 ug/L). However, the associated samples were detected at concentrations below the reporting limit. Data usability should not be impacted for this element

Sample Performance: All quality control criteria were met for the reported sample with the following exceptions:

The MS/MSD recovery for calcium could not be reliably determined because the native concentration of this element was significantly higher than the spike concentration added to the sample.

The percent difference (%D) of calcium (19.4%) and magnesium (16.2%) for the serial dilution test was above the QC limit of 10%. This may indicate a slight matrix bias for these elements.

METALS - SEDIMENT (STL0008082 - STL0008083)

Sample Chronology: Two samples were prepared by STL-M-3050B-2/7470A/1A-2 on 24 and 27 July 2000 and analyzed for TAL metals by STL-M-6010B-1/7000S-2/7470A/1A-2 on 25 - 27 July 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exceptions:

The method blank had the target analyte lead (0.383 mg/kg) detected slightly above the reporting limit (0.30 mg/kg). However, the associated samples were detected at significantly higher concentrations than the method blank. Data usability should not be impacted for this element

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

The MS/MSD recoveries (performed on sample FSS-SS-43-01) for antimony (39.9%, 41.6%) and zinc (38.5%, 43.1%) were below the QC limit of 75% indicating a potential for negative bias to the sample data for these elements. The MSD recoveries for calcium (145.7%), manganese (132.7%), and mercury (164.9%) were above the QC limit of 125% indicating a potential for positive bias to the sample data for these elements. The MS/MSD recoveries for aluminum, iron, and lead could not be reliably determined because the high native concentrations of these elements were significantly higher than the spike concentration added.

The relative percent difference (RPD) between the sample and sample duplicate for several elements was above the QC limit of 20%. This RPD value may indicate a precision deficit for these elements.

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: **EN-HT, HTRW Engineering**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000877**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **24 August 2000**

CERTIFICATION OF RESULTS

The Laboratory certifies that the reported results relate only to those samples tested and that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in STL Baltimore's Quality Assurance program for other than the conditions detailed above. Release of the data contained in this report has been authorized by the Laboratory Project Manager as verified by the following signature.

August 24, 2000

Natasha K. Sullivan, Laboratory Project Manager

TABLE 1. LABORATORY ORGANIC ANALYSIS DATA QUALIFIERS [1]

Qualifiers other than those listed below may be required to properly define the results. If used, they are given an alphabetic designation not already specified in this table or in a project/program document. such as a Quality Assurance Project Plan or a contract Statement of Work. Each additional qualifier is fully described in the Analytical Narrative section of the laboratory report.

U Indicates a target compound was analyzed for but not detected. The sample Reporting Limit (RL) is corrected for dilution and, if a soil sample, for percent moisture, if reported on a dry weight basis.

J Indicates an estimated value. This qualifier is used under the following circumstances:

1) when estimating a concentration for tentatively identified compounds (TICs) in GC/MS analyses, where a 1:1 response is assumed,
2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the RL but greater than the method detection limit (MDL).

B This qualifier is used when the analyte is found in the associated method blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. For GC/MS analyses, this qualifier is used for a TIC, as well as, for a positively identified target compound.

E This qualifier identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

D When applied, this qualifier identifies all compound concentrations reported from a secondary dilution analysis.

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

N Indicates presumptive evidence of a compound. This qualifier is only used for GC/MS TICs, where the identification is based on a mass spectral library search. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N qualifier is not used.

P When applied, this qualifier indicates a reported value from a GC analysis when there is greater than 25% difference for detected concentrations between the two GC columns.

---

(1) These Data Qualifiers are added by the laboratory to provide additional information for the reported results. ***They should not be confused with the qualifiers applied to the reported data as a result of a data validation process performed independently of the laboratory reporting procedure.***

TABLE 2. LABORATORY INORGANIC ANALYSIS DATA QUALIFIERS [1]

C *(Concentration) qualifiers:*

B	Reported value is less than the project-specified Reporting Limit (RL), but greater than the method-specified Instrument Detection Limit (IDL) or Method Detection Limit (MDL).
U	Analyte analyzed for but not detected (concentration is less than the method-specified Instrument Detection Limit (IDL) or Method Detection Limit (MDL).

Q *(Quality control) qualifiers:*

E	Reported value is estimated because of presence of interference.
M	Duplicate injection precision not met.
N	Spiked sample recovery is not within control limits.
S	Reported value is determined by the method of standard additions (MSA).
W	Postdigestion spike for furnace Atomic Absorption Spectrophotometric (AAS) AAS analysis is out of control limits (85-115%) and sample absorbance is less than 50% of spike absorbance.
*	Duplicate analyses is not within control limits.
+	Correlation coefficient for MSA is less than 0.995.

M *(Method) qualifiers:*

P	Inductively Coupled Plasma (ICP)
A	Flame AAS
F	Furnace AAS
CV	Cold Vapor AAS
AV	Automated Cold Vapor AAS
AS	Semiautomated Spectrophotometric
C	Manual Spectrophotometric
T	Titrimetric
NR	Analyte is not required to be determined.

(1) These Data Qualifiers are added by the laboratory to provide additional information for the reported results. ***They should not be confused with the qualifiers applied to the reported data as a result of a data validation process performed independently of the laboratory reporting procedure.***

TABLE 3. CODES ASSOCIATED WITH MANUAL INTEGRATION OF CHROMATOGRAPHIC PEAKS

M1 .... Software failed to integrate peak or integrated peak improperly

M2 .... Multiple peaks within window, analyst's discretion used in peak identification.

M3 .... Close eluting or near-coelution of interferences.

M4 .... Adding or removing area due to peak tailing - subject to consistency within the sequence.

M5 .... Adding/removing area due to positive baseline deflection matrix effect.

M6 .... Adding/removing area due to negative baseline deflection matrix effect.

M7 .... Retention time shifts.

M8 .... Skimming vs. dropped baseline.

M9 .... Adding area due to peak splitting .

M10 ... Secondary ions or qualifier ions.

Note: Appropriate Qualifiers are used and specified in the data package; either on the individual quantitation reports or in the Technical Review Checklists.

F:\GROUP\FINALRPT\MASTER\MANINT.MAS

2. CHAIN-OF-CUSTODY

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: USACE

Project Manager or Contact: Scott Craig
Phone:

Project No.: Ft Totten
Dept.: Task:

Project Name: Ft. Totten

Sample Storage Location: 214/U0910/J4

ATO Number:

Page 1 of 1

Report #: 000878

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes)/No summary table + GIS key

DUE TO CLIENT: 8/3/00

Parameters/Method Numbers for Analysis

00 Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	NOC TCL 8260 ZSA1	SVOC TCL 8270	PAHs 8310	Pentachlorophenol 8151	TAL Metals 8260/7000	TRIP BLANK	EA Labs Accession Number	Remarks
12JUL	1400	X		MW3-GW-01-01	4	X						0008079	LPM: NKS PS-040
12JUL	1400	X		MW3-GW-01-01	3		X						
12JUL	1400	X		MW3-GW-01-01	3			X					
12JUL	1400	X		MW3-GW-01-01	3				X				
12JUL	1800	X		MW3-GW-01-01	1					X			
11JUL	1500	X		MW1-GW-01-01	4	X						0008080	
11JUL	1500	X		MW4-GW-01-66A	2	X					X	0008081	

18 pest, 2C, 10 voa
4-4oz soil jars

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Joe Leise	12 JUL 1900	JOE Leise	12 JUL 1900	Fed EX	
Relinquished by: (Signature)	**Date/Time**	**Received by Laboratory: (Signature)**	**Date/Time**	**Airbill Number:**	**Sample Shipped by: (Circle)**
		[signature]	7/13/00 1000	821353076430	(Fed Ex.) Puro. UPS

Cooler Temp. 6° C pH: [X] Yes [ ] No Comments: Custody Seals Intact [ ] Yes [ ] No

Hand Carried

Other:

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

020001

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: USACE	Project Manager or Contact: Scott Cairns Phone:
Project No.: Ft Totten Dept.: Task:	Project Name: Ft. Totten
Sample Storage Location: 214/VOA10/T4	ATO Number:
Page 1 of 1	Report #: 000877

Report Deliverables: 1 2 3 (4) D E
EDD: (Yes)/No summary table + GIS key
DUE TO CLIENT: 8/3/00

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC TCL 8260 ZSA1	SVOC TCL 8270	PAHs 8310	Pentachlorophenol 8151	TAL Metals 6010/7470	TRIP BLANK	EA Labs Accession Number	Remarks
00 DJUL	1400	X		MW3-GW-01-01	4	X						000879	LPM: NKS AS-0090
DJUL	1400	X		MW3-GW-01-01	3		X						
12JUL	1400	X		MW3-GW-01-01	3			X					
DJUL	1400	X		MW3-GW-01-01	3				X				
12JUL	1800	X		MW8-GW-01-01	1					X		000880	
11JUL	1500	X		MW1-GW-01-01	4	X						000881	
11JUL	1500	X		MW4-GW-01-0606A	2	X					X		
													18 pest, 2C, 10 voa, 4-40z soil jars

Sampled by: (Signature) Joe Lewis	Date/Time 12 JUL 1900	Relinquished by: (Signature) JOE Lewis	Date/Time 13 JUL 1900	Received by: (Signature) Fed EX	Date/Time
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time 7/13/00 1000	Airbill Number: 821353076430	Sample Shipped by: (Circle) Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp. 6 °C pH: (Yes) No Comments: Custody Seals Intact Yes No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

200020

2

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: USACE	Project Manager or Contact: Scott Chang Phone:
Project No. Ft TOTTEN Dept.: Task:	Project Name: Ft. TOTTEN
Sample Storage Location: J4/214/VOA10	ATO Number:
Page 1 of 1	Report #: 000877

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes)/No Summon table + GIS key

DUE TO CLIENT: 8/13/00

Date (00)	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	SVOC TCL 8270	PAH's 8310	Pentachlorophenol 8151	TAL Metals 6010/7000	EA Labs Accession Number	Remarks
11JUL	1500	X		MW1-GW-01-01	3	X				0008080	LPM: MCS
11JUL	1500	X		MW1-GW-01-01	3		X				PS-020
11JUL	1500	X		MW1-GW-01-01	3			X			
11JUL	1900	X		MW1-GW-01-01	1				X		
											18 pest, 2C, 1C vaa, 4-4oz soil jars

Joe Leire

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
JOE Leire	12 JUL 1900	JOE Leire	12 JUL 1900	Fed EX	
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number: 8213 5307 6154	Sample Shipped by: (Circle) Fed Ex. Puro. UPS Hand Carried Other:
		[signature]	7/13/00 1000		

Cooler Temp. 5° C pH: [X] Yes [ ] No Comments: Custody Seals Intact [ ] Yes [ ] No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

020003

2

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: USACE	Project Manager or Contact: Scott Chang Phone:
Project No. / Dept.: Ft. TOTTEN / Task:	Project Name: Ft. TOTTEN
Sample Storage Location: J4/214/VOA0	ATO Number:
Page 1 of 1	Report #: 000878

Report Deliverables: 1 2 3 (4) (D) E
EDD: (Yes) / No Summary table + GIS key
DUE TO CLIENT: 8/13/00

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	SVOC TCL 8270	PAHs 8310	Pentachlorophenol 8151	TAL Metals 6010/7000	EA Labs Accession Number	Remarks
11 JUL	1500	X		MW11-GW-010701	3	X				0008080	LPM: Mes
11 JUL	1500	X		MW11-GW-010701	3		X				ps-020
11 JUL	1500	X		MW11-GW-010701	3			X			
11 JUL	1900	X		MW11-GW-010701	1				X		
											18 pest, 2 C, 10 voa, 4-4oz soil jars

Sampled by: (Signature) JOE Leiw	Date/Time 11 JUL 1900	Relinquished by: (Signature) JOE Leiw	Date/Time 12 JUL 1900	Received by: (Signature) Fed EX	Date/Time
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time 7/13/00 1000	Airbill Number: 8213 5307 6154	Sample Shipped by: (Circle) Fed Ex. Puro. UPS
Cooler Temp. 5° C pH: (X) Yes ( ) No Comments:			Custody Seals Intact ( ) Yes ( ) No		Hand Carried / Other:

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

020004

3

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: USACE

Project Manager or Contact: Scott Chang

Phone:

Project No. Ft. TOTTEN

Dept.: Task:

Project Name: Ft TOTTEN

Sample Storage Location: 214/VOA10/54

ATO Number:

Page 1 of 1

Report #: 000577

Report Deliverables: 1 2 3 (4) (D) E

EDD (Yes)/No Excel summ + GIS key

DUE TO CLIENT: 8/3/00

Parameters/Method Numbers for Analysis

Date (00)	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	TAL Metals 6010/7000	EA Labs Accession Number	Remarks
8JUL	0830		X	FSS-SS-YB-01	2	X	0008062	LPM: NKS
8JUL	0900		X	FSS-SS-YY-01	2	X	0008083	PS-090

Joe Leise

Methods:

SAMPLE ARE SEDIMENTS ADJUST FOR PERCENT MOISTURE UP TO 50% PRIOR TO ANALYSIS.

4D+GIS KEY+EXCEL SUMMARY TABLES
LPM: NKS
PS-090

15 pest, 2C, 10 voa, 4-4oz soil jars

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
JOE Leise 00	12 JUL 1900	Joe Leise 00	12 JUL 1900	Fed EX	
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		[signature]	7/13/00 1000	8213530761 54	(Fed Ex.) Puro. UPS Hand Carried Other:

Cooler Temp. 5° C pH: ☐ Yes ☒ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

020005

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: USACE

Project Manager or Contact: Scott Chang
Phone:

Project No.: Ft. Totten
Dept.: Task:

Project Name: Ft. Totten

Sample Storage Location: Z14/J12/V0A10

ATO Number:

Page 1 of 1

Report #: 000888

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes)/No Summary table + GIS

DUE TO CLIENT: 8/4/00

Parameters/Method Numbers for Analysis: 8270 SVOC TCL; PAH's 8310; 8151 Pentachlorophenol; TAL Metal; 6010/7000

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	SVOC TCL	PAH's 8310	Pentachlorophenol	TAL Metal	6010/7000	EA Labs Accession Number	Remarks
13JUL	1700	X		MW4-GW-01-55	3	X					0008101	LPM: NKS
13JUL	1700	X		MW4-GW-01-55	3		X				↓	
13JUL	1700	X		MW4-GW-01-55	3			X			↓	
13JUL	1700	X		MW4-GW-01-55	1				X		↓	
												18 Cust, 2C, 1000AS
												000000 7 4 X

NEW YORK HOLDING TIMES

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Joe Leise	13JUL 1900	Joe Leise	13JUL 1900	Fed Ex	
Relinquished by: (Signature)	**Date/Time**	**Received by Laboratory: (Signature)**	**Date/Time**	**Airbill Number:**	**Sample Shipped by: (Circle)**
		Cathy Hendry	7/14/00 930	8243530 76419	Fed Ex. Puro. UPS

Cooler Temp. 4 C pH: [X] Yes [ ] No Comments: Custody Seals Intact [X] Yes [ ] No

Hand Carried

Other:

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

020006

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: USACE

Project Manager or Contact: Phone: Sou Chang

Project No.: Dept.: Ft. Totten Task:

Project Name: Ft Totten

Sample Storage Location: 214/J12/10A10

ATO Number:

Page 1 of 1

Report #: 000887

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes)/No Summ tables +

DUE TO CLIENT: 8/4/00 GIS

Parameters/Method Numbers for Analysis

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC TCL 8260	SVOC TCL	PAHs 8310	Pentachlorophenol 8151	TCLP Blanic	TAL Metals	6010/7000	EA Labs Accession Number	Remarks
13 JUL	1300	X		MW5-GW-01-01	4	X							0008100	LPM: NKS
13 JUL	1300	X		MW5-GW-01-01	3		X							
13 JUL	1300	X		MW5-GW-01-01	3				X					
13 JUL	1300	X		MW5-GW-01-01	3			X						
13 JUL	1700	X		MW4-GW-01-55	4	X							0008101	
13 JUL	1300	X		MW4-GW-01-66-B	2	X				X			0008102	
13 JUL	1300	X		MW5-GW-01-01	1						X		0008100	

NEW YORK HOLDING TIMES.

18 pest, 2C, 1000AS

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
[signature]	13 JUL 1900	Fed EX [signature]	13 JUL 1900	Fed EX	
Relinquished by: (Signature)	**Date/Time**	**Received by Laboratory: (Signature)**	**Date/Time**	**Airbill Number:**	**Sample Shipped by: (Circle)**
		Cathy Hushly	7/14/00 950	821353076420	(Fed Ex.) Puro. UPS

Cooler Temp. 4 C pH: [X] Yes [ ] No Comments: Custody Seals Intact [X] Yes [ ] No

Hand Carried

Other:

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

020007

Severn Trent Laboratories
STL Baltimore

19 Loveton Circle
Sparks, Maryland 21152
(410) 771-4920

Committed to *Your* Success

COOLER RECEIPT CHECKLIST

Report: 000877

Project: Ft. Totten
Received: 14-JUL-00 9:50
COC: COC0007458
Samples: 0008100-0008102

A. COOLER INSPECTION:

Date cooler was opened: 7/14/00 Date — Cathy Heskey Custodian Signature

1. Did cooler come with a shipping slip, air bill, etc? YES NO N/A NCR# 823530640
1a. Circle courier: Federal Express UPS *Air bill Number from Chain-of-Custody* 823530640
1b. Circle, if applicable: Handcarried Other

2. Custody seals were present on outside of cooler? YES NO N/A NCR# _____
3. Custody seals were unbroken at the time of arrival? YES NO N/A NCR# _____
4. Chain-of-Custody (COC)records were present and legible? YES NO N/A NCR# _____
5. Were the COC records completed? YES NO N/A NCR# _____
6. Was cooler temperature 4C ± 2C? YES NO N/A NCR# _____

B. SAMPLE INSPECTION

9. All bottles arrived unbroken? YES NO N/A NCR# _____
10. All bottles labels were legible and complete? YES NO N/A NCR# _____
11. Containers were correct for the analysis listed on the COC? YES NO N/A NCR# _____
12. Were preservatives checked (except VOA vials)? YES NO N/A NCR# 42178
13. Were bubbles absent in Volatiles samples? YES NO N/A NCR# 42178

Special Notes: Bubbles present in MW-1-GW-01-66-13

Jennifer E. Sorsen 7/14/00
Sample Management Officer Date

M:\GROUP\QA\FORMS\COOLER.WPD

September 29, 1999/mmu

Severn Trent Laboratories
STL Baltimore

19 Loveton Circle
Sparks, Maryland 21152
(410) 771-4920

Committed to *Your* Success

COOLER RECEIPT CHECKLIST

Report: 000877

Project: Ft. Totten
Received: 13-JUL-00 10:00
COC: COC0007455
Samples: 0008079-0008083

A. COOLER INSPECTION:

Date cooler was opened: 7/13/00 (Date) — Custodian Signature

1. Did cooler come with a shipping slip, air bill, etc? (YES) NO N/A NCR# _____
1a. Circle courier: (Federal Express) UPS *Air bill Number from Chain-of-Custody* 821353076430
1b. Circle, if applicable: Handcarried Other

2. Custody seals were present on outside of cooler? (YES) NO N/A NCR# _____
3. Custody seals were unbroken at the time of arrival? (YES) NO N/A NCR# _____
4. Chain-of-Custody (COC)records were present and legible? (YES) NO N/A NCR# _____
5. Were the COC records completed? (YES) NO N/A NCR# _____
6. Was cooler temperature 4C ± 2C? (YES) NO N/A NCR# _____

5°C - 6°C

B. SAMPLE INSPECTION

9. All bottles arrived unbroken? (YES) NO N/A NCR# _____
10. All bottles labels were legible and complete? (YES) NO N/A NCR# _____
11. Containers were correct for the analysis listed on the COC? (YES) NO N/A NCR# _____
12. Were preservatives checked (except VOA vials)? (YES) NO N/A NCR# _____
13. Were bubbles absent in Volatiles samples? YES (NO) N/A NCR# 4-2176

Special Notes:
bubbles present in (2) x MW14-GW-01-60ml → Trip Blanks

Jennifer E Jensen — 7/13/00
Sample Management Officer — Date

M:\GROUP\QA\FORMS\COOLER.WPD

September 29, 1999/mmu

020009

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW3-GW-01-01

Lab Name: STL BALTIMORE Contract: 000877

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008079

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VA1C7832.D

Level: (low/med) LOW Date Received: 7/13/00

% Moisture: not dec. Date Analyzed: 7/16/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	2	U
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	2	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Chlorodibromomethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW1-GW-01-01

Lab Name: STL BALTIMORE Contract: 000877

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008080

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VA1C7833.D

Level: (low/med) LOW Date Received: 7/13/00

% Moisture: not dec. Date Analyzed: 7/16/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	2	U
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	2	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Chlorodibromomethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW4-GW-01-66A

Lab Name: STL BALTIMORE Contract: 000877

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008081

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VA1C7829.D

Level: (low/med) LOW Date Received: 7/13/00

% Moisture: not dec. Date Analyzed: 7/16/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	2	U
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	2	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Chlorodibromomethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW5-GW-01-01

Lab Name: STL BALTIMORE Contract: 000877

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008100

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VA1C7879.D

Level: (low/med) LOW Date Received: 7/14/00

% Moisture: not dec. Date Analyzed: 7/18/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L		Q
74-87-3	Chloromethane		1	U
75-01-4	Vinyl Chloride		1	U
74-83-9	Bromomethane		1	U
75-00-3	Chloroethane		1	U
67-64-1	Acetone		2	U
75-35-4	1,1-Dichloroethene		1	U
75-09-2	Methylene Chloride		1	U
75-15-0	Carbon Disulfide		1	U
75-34-3	1,1-Dichloroethane		1	U
78-93-3	2-Butanone		2	U
540-59-0	1,2-Dichloroethene (total)		1	U
67-66-3	Chloroform		1	U
71-55-6	1,1,1-Trichloroethane		1	U
56-23-5	Carbon Tetrachloride		1	U
107-06-2	1,2-Dichloroethane		1	U
71-43-2	Benzene		1	U
79-01-6	Trichloroethene		1	U
78-87-5	1,2-Dichloropropane		1	U
75-27-4	Bromodichloromethane		1	U
108-10-1	4-Methyl-2-Pentanone		2	U
10061-01-5	cis-1,3-Dichloropropene		1	U
108-88-3	Toluene		1	U
10061-02-6	trans-1,3-Dichloropropene		1	U
79-00-5	1,1,2-Trichloroethane		1	U
591-78-6	2-Hexanone		2	U
127-18-4	Tetrachloroethene		1	U
124-48-1	Chlorodibromomethane		1	U
108-90-7	Chlorobenzene		1	U
100-41-4	Ethylbenzene		1	U
1330-20-7	Xylenes (total)		1	U
100-42-5	Styrene		1	U
75-25-2	Bromoform		1	U
79-34-5	1,1,2,2-Tetrachloroethane		1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW4-GW-01-55

Lab Name: STL BALTIMORE Contract: 000877

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008101

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VA1C7880.D

Level: (low/med) LOW Date Received: 7/14/00

% Moisture: not dec. Date Analyzed: 7/18/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L		Q
74-87-3	Chloromethane		1	U
75-01-4	Vinyl Chloride		1	U
74-83-9	Bromomethane		1	U
75-00-3	Chloroethane		1	U
67-64-1	Acetone		2	U
75-35-4	1,1-Dichloroethene		1	U
75-09-2	Methylene Chloride		1	U
75-15-0	Carbon Disulfide		1	U
75-34-3	1,1-Dichloroethane		1	U
78-93-3	2-Butanone		2	U
540-59-0	1,2-Dichloroethene (total)		1	U
67-66-3	Chloroform		1	U
71-55-6	1,1,1-Trichloroethane		1	U
56-23-5	Carbon Tetrachloride		1	U
107-06-2	1,2-Dichloroethane		1	U
71-43-2	Benzene		1	U
79-01-6	Trichloroethene		1	U
78-87-5	1,2-Dichloropropane		1	U
75-27-4	Bromodichloromethane		1	U
108-10-1	4-Methyl-2-Pentanone		2	U
10061-01-5	cis-1,3-Dichloropropene		1	U
108-88-3	Toluene		1	U
10061-02-6	trans-1,3-Dichloropropene		1	U
79-00-5	1,1,2-Trichloroethane		1	U
591-78-6	2-Hexanone		2	U
127-18-4	Tetrachloroethene		1	U
124-48-1	Chlorodibromomethane		1	U
108-90-7	Chlorobenzene		1	U
100-41-4	Ethylbenzene		1	U
1330-20-7	Xylenes (total)		1	U
100-42-5	Styrene		1	U
75-25-2	Bromoform		1	U
79-34-5	1,1,2,2-Tetrachloroethane		1	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW4-GW-01-66-B

Lab Name: STL BALTIMORE Contract: 000877

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008102

Sample wt/vol: 25.0 (g/ml) ML Lab File ID: VA1C7872.D

Level: (low/med) LOW Date Received: 7/14/00

% Moisture: not dec. Date Analyzed: 7/18/00

GC Column: RTX-502 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	1	U
75-01-4	Vinyl Chloride	1	U
74-83-9	Bromomethane	1	U
75-00-3	Chloroethane	1	U
67-64-1	Acetone	2	U
75-35-4	1,1-Dichloroethene	1	U
75-09-2	Methylene Chloride	1	U
75-15-0	Carbon Disulfide	1	U
75-34-3	1,1-Dichloroethane	1	U
78-93-3	2-Butanone	2	U
540-59-0	1,2-Dichloroethene (total)	1	U
67-66-3	Chloroform	1	U
71-55-6	1,1,1-Trichloroethane	1	U
56-23-5	Carbon Tetrachloride	1	U
107-06-2	1,2-Dichloroethane	1	U
71-43-2	Benzene	1	U
79-01-6	Trichloroethene	1	U
78-87-5	1,2-Dichloropropane	1	U
75-27-4	Bromodichloromethane	1	U
108-10-1	4-Methyl-2-Pentanone	2	U
10061-01-5	cis-1,3-Dichloropropene	1	U
108-88-3	Toluene	1	U
10061-02-6	trans-1,3-Dichloropropene	1	U
79-00-5	1,1,2-Trichloroethane	1	U
591-78-6	2-Hexanone	2	U
127-18-4	Tetrachloroethene	1	U
124-48-1	Chlorodibromomethane	1	U
108-90-7	Chlorobenzene	1	U
100-41-4	Ethylbenzene	1	U
1330-20-7	Xylenes (total)	1	U
100-42-5	Styrene	1	U
75-25-2	Bromoform	1	U
79-34-5	1,1,2,2-Tetrachloroethane	1	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW3-GW-01-01

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008079

Sample wt/vol: 1000 (g/ml) ML Lab File ID: SA1D2786.D

Level: (low/med) LOW Date Received: 07/13/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/17/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/24/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitrosodi-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
606-20-2	2,6-Dinitrotoluene	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW3-GW-01-01

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008079

Sample wt/vol: 1000 (g/ml) ML Lab File ID: SA1D2786.D

Level: (low/med) LOW Date Received: 07/13/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/17/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/24/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine(1)	10	U
101-55-3	4-Bromophenyl phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butyl phthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW1-GW-01-01

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008080

Sample wt/vol: 1000 (g/ml) ML Lab File ID: SA1D2787.D

Level: (low/med) LOW Date Received: 07/13/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/17/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/24/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	10	U
111-44-4	bis(2-Chloroethyl)ether	10	U
95-57-8	2-Chlorophenol	10	U
541-73-1	1,3-Dichlorobenzene	10	U
106-46-7	1,4-Dichlorobenzene	10	U
95-50-1	1,2-Dichlorobenzene	10	U
95-48-7	2-Methylphenol	10	U
108-60-1	2,2'-oxybis(1-Chloropropane)	10	U
106-44-5	4-Methylphenol	10	U
621-64-7	N-Nitrosodi-n-propylamine	10	U
67-72-1	Hexachloroethane	10	U
98-95-3	Nitrobenzene	10	U
78-59-1	Isophorone	10	U
88-75-5	2-Nitrophenol	10	U
105-67-9	2,4-Dimethylphenol	10	U
111-91-1	bis(2-Chloroethoxy)methane	10	U
120-83-2	2,4-Dichlorophenol	10	U
120-82-1	1,2,4-Trichlorobenzene	10	U
91-20-3	Naphthalene	10	U
106-47-8	4-Chloroaniline	20	U
87-68-3	Hexachlorobutadiene	10	U
59-50-7	4-Chloro-3-methylphenol	10	U
91-57-6	2-Methylnaphthalene	10	U
77-47-4	Hexachlorocyclopentadiene	10	U
88-06-2	2,4,6-Trichlorophenol	10	U
95-95-4	2,4,5-Trichlorophenol	50	U
91-58-7	2-Chloronaphthalene	10	U
88-74-4	2-Nitroaniline	50	U
131-11-3	Dimethylphthalate	10	U
606-20-2	2,6-Dinitrotoluene	10	U
208-96-8	Acenaphthylene	10	U
99-09-2	3-Nitroaniline	50	U
83-32-9	Acenaphthene	10	U
51-28-5	2,4-Dinitrophenol	50	U
100-02-7	4-Nitrophenol	50	U
132-64-9	Dibenzofuran	10	U
121-14-2	2,4-Dinitrotoluene	10	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW1-GW-01-01

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008080

Sample wt/vol: 1000 (g/ml) ML Lab File ID: SA1D2787.D

Level: (low/med) LOW Date Received: 07/13/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/17/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/24/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	10	U
7005-72-3	4-Chlorophenyl phenylether	10	U
86-73-7	Fluorene	10	U
100-01-6	4-Nitroaniline	50	U
534-52-1	4,6-Dinitro-2-methylphenol	50	U
86-30-6	N-Nitrosodiphenylamine(1)	10	U
101-55-3	4-Bromophenyl phenylether	10	U
118-74-1	Hexachlorobenzene	10	U
87-86-5	Pentachlorophenol	50	U
85-01-8	Phenanthrene	10	U
120-12-7	Anthracene	10	U
86-74-8	Carbazole	10	U
84-74-2	Di-n-butyl phthalate	10	U
206-44-0	Fluoranthene	10	U
129-00-0	Pyrene	10	U
85-68-7	Butylbenzylphthalate	10	U
91-94-1	3,3'-Dichlorobenzidine	20	U
56-55-3	Benzo(a)anthracene	10	U
117-81-7	bis(2-Ethylhexyl)phthalate	10	U
218-01-9	Chrysene	10	U
117-84-0	Di-n-octyl phthalate	10	U
205-99-2	Benzo(b)fluoranthene	10	U
207-08-9	Benzo(k)fluoranthene	10	U
50-32-8	Benzo(a)pyrene	10	U
193-39-5	Indeno(1,2,3-cd)pyrene	10	U
53-70-3	Dibenz(a,h)anthracene	10	U
191-24-2	Benzo(g,h,i)perylene	10	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW5-GW-01-01

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008100

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1401.D

Level: (low/med) LOW Date Received: 07/14/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
541-73-1	1,3-Dichlorobenzene	9.5	U
106-46-7	1,4-Dichlorobenzene	9.5	U
95-50-1	1,2-Dichlorobenzene	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitrosodi-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
120-82-1	1,2,4-Trichlorobenzene	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	19	U
87-68-3	Hexachlorobutadiene	9.5	U
59-50-7	4-Chloro-3-methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	48	U
91-58-7	2-Chloronaphthalene	9.5	U
88-74-4	2-Nitroaniline	48	U
131-11-3	Dimethylphthalate	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
208-96-8	Acenaphthylene	9.5	U
99-09-2	3-Nitroaniline	48	U
83-32-9	Acenaphthene	9.5	U
51-28-5	2,4-Dinitrophenol	48	U
100-02-7	4-Nitrophenol	48	U
132-64-9	Dibenzofuran	9.5	U
121-14-2	2,4-Dinitrotoluene	9.5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW5-GW-01-01

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008100

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1401.D

Level: (low/med) LOW Date Received: 07/14/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	9.5	U
7005-72-3	4-Chlorophenyl phenylether	9.5	U
86-73-7	Fluorene	9.5	U
100-01-6	4-Nitroaniline	48	U
534-52-1	4,6-Dinitro-2-methylphenol	48	U
86-30-6	N-Nitrosodiphenylamine(1)	9.5	U
101-55-3	4-Bromophenyl phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
87-86-5	Pentachlorophenol	48	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butyl phthalate	9.5	U
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
85-68-7	Butylbenzylphthalate	9.5	U
91-94-1	3,3'-Dichlorobenzidine	19	U
56-55-3	Benzo(a)anthracene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.5	U
218-01-9	Chrysene	9.5	U
117-84-0	Di-n-octyl phthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	9.5	U
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW5-GW-01-01RE

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008100RE

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1558.D

Level: (low/med) LOW Date Received: 07/14/00

% Moisture: decanted:(Y/N) N Date Extracted: 08/07/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
541-73-1	1,3-Dichlorobenzene	9.5	U
106-46-7	1,4-Dichlorobenzene	9.5	U
95-50-1	1,2-Dichlorobenzene	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitrosodi-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
120-82-1	1,2,4-Trichlorobenzene	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	19	U
87-68-3	Hexachlorobutadiene	9.5	U
59-50-7	4-Chloro-3-methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	48	U
91-58-7	2-Chloronaphthalene	9.5	U
88-74-4	2-Nitroaniline	48	U
131-11-3	Dimethylphthalate	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
208-96-8	Acenaphthylene	9.5	U
99-09-2	3-Nitroaniline	48	U
83-32-9	Acenaphthene	9.5	U
51-28-5	2,4-Dinitrophenol	48	U
100-02-7	4-Nitrophenol	48	U
132-64-9	Dibenzofuran	9.5	U
121-14-2	2,4-Dinitrotoluene	9.5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW5-GW-01-01RE

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008100RE

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1558.D

Level: (low/med) LOW Date Received: 07/14/00

% Moisture: decanted:(Y/N) N Date Extracted: 08/07/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	9.5	U
7005-72-3	4-Chlorophenyl phenylether	9.5	U
86-73-7	Fluorene	9.5	U
100-01-6	4-Nitroaniline	48	U
534-52-1	4,6-Dinitro-2-methylphenol	48	U
86-30-6	N-Nitrosodiphenylamine(1)	9.5	U
101-55-3	4-Bromophenyl phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
87-86-5	Pentachlorophenol	48	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butyl phthalate	9.5	U
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
85-68-7	Butylbenzylphthalate	9.5	U
91-94-1	3,3'-Dichlorobenzidine	19	U
56-55-3	Benzo(a)anthracene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.5	U
218-01-9	Chrysene	9.5	U
117-84-0	Di-n-octyl phthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	9.5	U
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-55

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008101

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1396.D

Level: (low/med) LOW Date Received: 07/14/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
541-73-1	1,3-Dichlorobenzene	9.5	U
106-46-7	1,4-Dichlorobenzene	9.5	U
95-50-1	1,2-Dichlorobenzene	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitrosodi-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
120-82-1	1,2,4-Trichlorobenzene	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	19	U
87-68-3	Hexachlorobutadiene	9.5	U
59-50-7	4-Chloro-3-methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	48	U
91-58-7	2-Chloronaphthalene	9.5	U
88-74-4	2-Nitroaniline	48	U
131-11-3	Dimethylphthalate	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
208-96-8	Acenaphthylene	9.5	U
99-09-2	3-Nitroaniline	48	U
83-32-9	Acenaphthene	9.5	U
51-28-5	2,4-Dinitrophenol	48	U
100-02-7	4-Nitrophenol	48	U
132-64-9	Dibenzofuran	9.5	U
121-14-2	2,4-Dinitrotoluene	9.5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-55

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008101

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1396.D

Level: (low/med) LOW Date Received: 07/14/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 07/31/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	9.5	U
7005-72-3	4-Chlorophenyl phenylether	9.5	U
86-73-7	Fluorene	9.5	U
100-01-6	4-Nitroaniline	48	U
534-52-1	4,6-Dinitro-2-methylphenol	48	U
86-30-6	N-Nitrosodiphenylamine(1)	9.5	U
101-55-3	4-Bromophenyl phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
87-86-5	Pentachlorophenol	48	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butyl phthalate	9.5	U
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
85-68-7	Butylbenzylphthalate	9.5	U
91-94-1	3,3'-Dichlorobenzidine	19	U
56-55-3	Benzo(a)anthracene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	3.7	J
218-01-9	Chrysene	9.5	U
117-84-0	Di-n-octyl phthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	9.5	U
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

040044

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-55RE

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008101RE

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1559.D

Level: (low/med) LOW Date Received: 07/14/00

% Moisture: decanted:(Y/N) N Date Extracted: 08/07/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
541-73-1	1,3-Dichlorobenzene	9.5	U
106-46-7	1,4-Dichlorobenzene	9.5	U
95-50-1	1,2-Dichlorobenzene	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitrosodi-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
120-82-1	1,2,4-Trichlorobenzene	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	19	U
87-68-3	Hexachlorobutadiene	9.5	U
59-50-7	4-Chloro-3-methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	48	U
91-58-7	2-Chloronaphthalene	9.5	U
88-74-4	2-Nitroaniline	48	U
131-11-3	Dimethylphthalate	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
208-96-8	Acenaphthylene	9.5	U
99-09-2	3-Nitroaniline	48	U
83-32-9	Acenaphthene	9.5	U
51-28-5	2,4-Dinitrophenol	48	U
100-02-7	4-Nitrophenol	48	U
132-64-9	Dibenzofuran	9.5	U
121-14-2	2,4-Dinitrotoluene	9.5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-55RE

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008101RE

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1559.D

Level: (low/med) LOW Date Received: 07/14/00

% Moisture: decanted:(Y/N) N Date Extracted: 08/07/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	9.5	U
7005-72-3	4-Chlorophenyl phenylether	9.5	U
86-73-7	Fluorene	9.5	U
100-01-6	4-Nitroaniline	48	U
534-52-1	4,6-Dinitro-2-methylphenol	48	U
86-30-6	N-Nitrosodiphenylamine(1)	9.5	U
101-55-3	4-Bromophenyl phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
87-86-5	Pentachlorophenol	48	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butyl phthalate	9.5	U
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
85-68-7	Butylbenzylphthalate	9.5	U
91-94-1	3,3'-Dichlorobenzidine	19	U
56-55-3	Benzo(a)anthracene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.5	U
218-01-9	Chrysene	9.5	U
117-84-0	Di-n-octyl phthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	9.5	U
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

MW3-GW-01-01

Lab Name: STL BALTIMORE Contract: FT. TOTTE

Lab Code: STLABS Case No.: 000877 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008079

Sample wt/vol: 1040 (g/ml) ML Lab File ID: LA1X341F.D

% Moisture: decanted:(Y/N) N Date Received: 07/13/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/17/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	NAPHTHALENE	0.96	U
208-96-8	ACENAPHTHYLENE	1.9	U
90-12-0	1-METHYL-NAPHTHALENE	0.96	U
91-57-6	2-METHYL-NAPHTHALENE	0.96	U
83-32-9	ACENAPHTHENE	0.96	U
86-73-7	FLUORENE	0.19	U
85-01-8	PHENANTHRENE	0.14	U
120-12-7	ANTHRACENE	0.14	U
206-44-0	FLUORANTHENE	0.19	U
129-00-0	PYRENE	0.19	U
56-55-3	BENZO[a]ANTHRACENE	0.14	U
218-01-9	CHRYSENE	0.14	U
205-99-2	BENZO[b]FLUORANTHENE	0.19	U
207-08-9	BENZO[k]FLUORANTHENE	0.14	U
50-32-8	BENZO[a]PYRENE	0.14	U
53-70-3	DIBENZO[a,h]ANTHRACENE	0.24	U
191-24-2	BENZO[g,h,i]PERYLENE	0.19	U
193-39-5	INDENO[1,2,3-cd]PYRENE	0.14	U

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

MW1-GW-01-01

Lab Name: STL BALTIMORE Contract: FT. TOTTE

Lab Code: STLABS Case No.: 000877 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008080

Sample wt/vol: 1050 (g/ml) ML Lab File ID: LA1X342F.D

% Moisture: decanted:(Y/N) N Date Received: 07/13/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/14/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/17/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	NAPHTHALENE	0.95	U
208-96-8	ACENAPHTHYLENE	1.9	U
90-12-0	1-METHYL-NAPHTHALENE	0.95	U
91-57-6	2-METHYL-NAPHTHALENE	0.95	U
83-32-9	ACENAPHTHENE	0.95	U
86-73-7	FLUORENE	0.19	U
85-01-8	PHENANTHRENE	0.14	U
120-12-7	ANTHRACENE	0.14	U
206-44-0	FLUORANTHENE	0.19	U
129-00-0	PYRENE	0.19	U
56-55-3	BENZO[a]ANTHRACENE	0.14	U
218-01-9	CHRYSENE	0.14	U
205-99-2	BENZO[b]FLUORANTHENE	0.19	U
207-08-9	BENZO[k]FLUORANTHENE	0.14	U
50-32-8	BENZO[a]PYRENE	0.14	U
53-70-3	DIBENZO[a,h]ANTHRACENE	0.24	U
191-24-2	BENZO[g,h,i]PERYLENE	0.19	U
193-39-5	INDENO[1,2,3-cd]PYRENE	0.14	U

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

MW5-GW-01-01

Lab Name: STL BALTIMORE Contract: FT. TOTTE

Lab Code: STLABS Case No.: 000877 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008100

Sample wt/vol: 1050 (g/ml) ML Lab File ID: LA1X349F.D

% Moisture: decanted:(Y/N) N Date Received: 07/14/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/17/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	NAPHTHALENE	0.95	U
208-96-8	ACENAPHTHYLENE	1.9	U
90-12-0	1-METHYL-NAPHTHALENE	0.95	U
91-57-6	2-METHYL-NAPHTHALENE	0.95	U
83-32-9	ACENAPHTHENE	0.95	U
86-73-7	FLUORENE	0.19	U
85-01-8	PHENANTHRENE	0.14	U
120-12-7	ANTHRACENE	0.14	U
206-44-0	FLUORANTHENE	0.19	U
129-00-0	PYRENE	0.19	U
56-55-3	BENZO[a]ANTHRACENE	0.14	U
218-01-9	CHRYSENE	0.14	U
205-99-2	BENZO[b]FLUORANTHENE	0.19	U
207-08-9	BENZO[k]FLUORANTHENE	0.14	U
50-32-8	BENZO[a]PYRENE	0.14	U
53-70-3	DIBENZO[a,h]ANTHRACENE	0.24	U
191-24-2	BENZO[g,h,i]PERYLENE	0.19	U
193-39-5	INDENO[1,2,3-cd]PYRENE	0.14	U

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

MW4-GW-01-55

Lab Name: STL BALTIMORE Contract: FT. TOTTE

Lab Code: STLABS Case No.: 000877 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008101

Sample wt/vol: 1050 (g/ml) ML Lab File ID: LA1X350F.D

% Moisture: decanted:(Y/N) N Date Received: 07/14/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/18/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/17/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	NAPHTHALENE	0.95	U
208-96-8	ACENAPHTHYLENE	1.9	U
90-12-0	1-METHYL-NAPHTHALENE	0.95	U
91-57-6	2-METHYL-NAPHTHALENE	0.95	U
83-32-9	ACENAPHTHENE	0.95	U
86-73-7	FLUORENE	0.19	U
85-01-8	PHENANTHRENE	0.14	U
120-12-7	ANTHRACENE	0.14	U
206-44-0	FLUORANTHENE	0.19	U
129-00-0	PYRENE	0.19	U
56-55-3	BENZO[a]ANTHRACENE	0.14	U
218-01-9	CHRYSENE	0.14	U
205-99-2	BENZO[b]FLUORANTHENE	0.19	U
207-08-9	BENZO[k]FLUORANTHENE	0.14	U
50-32-8	BENZO[a]PYRENE	0.14	U
53-70-3	DIBENZO[a,h]ANTHRACENE	0.24	U
191-24-2	BENZO[g,h,i]PERYLENE	0.19	U
193-39-5	INDENO[1,2,3-cd]PYRENE	0.14	U

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

MW3-GW-01-01

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008079

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 336FABSM.D

% Moisture: decanted:(Y/N) N Date Received: 07/13/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/14/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
87-86-5	PCP	1.0	U

068011

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW1-GW-01-01

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008080

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 339FABSM.D

% Moisture: decanted:(Y/N) N Date Received: 07/13/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/14/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
87-86-5	PCP	1.0	U

006014

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW5-GW-01-01

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008100

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 346FABSM.D

% Moisture: decanted:(Y/N) N Date Received: 07/14/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/19/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
87-86-5	PCP	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-55

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008101

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 347FABSM.D

% Moisture: decanted:(Y/N) N Date Received: 07/14/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/19/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
87-86-5	PCP	1.0	U

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory ST LABORATORIES

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T08082	FSS-SS-43-01
T08082D	FSS-SS-43-01D
T08082S	FSS-SS-43-01S
T08083	FSS-SS-44-01

8/9/00

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirron Name: Judy S. Kirron

Date: 9 August 2000 Title: LAB TECHNICIAN

070002

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08082

Laboratory: ST LABORATORIES

SDG No.: T08082

Matrix: TOTAL Client ID: FSS-SS-43-01

Percent Solids: 65.7 Date Received: 07/13/00 8/9/00

Results for: SEDIMENT metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	2540			P
7440-36-0	Antimony	0.92		N	P
7440-38-2	Arsenic	5.2		*	P
7440-39-3	Barium	84.8		*	P
7440-41-7	Beryllium	0.24	B		P
7440-43-9	Cadmium	0.34	B		P
7440-70-2	Calcium	2910		N*	P
7440-47-3	Chromium	4.9			P
7440-48-4	Cobalt	5.8			P
7440-50-8	Copper	29.9			P
7439-89-6	Iron	6210		*	P
7439-92-1	Lead	442		*	P
7439-95-4	Magnesium	485		*	P
7439-96-5	Manganese	46.6		N	P
7439-97-6	Mercury	0.59		N*	CV
7440-02-0	Nickel	7.0			P
7440-09-7	Potassium	364			P
7782-49-2	Selenium	0.47	B		P
7440-22-4	Silver	0.13	U		P
7440-23-5	Sodium	304			P
7440-28-0	Thallium	0.12	U	W	F
7440-62-2	Vanadium	11.0			P
7440-66-6	Zinc	109		N*	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08083

Laboratory: ST LABORATORIES

SDG No.: T08082

Matrix: TOTAL Client ID: FSS-SS-44-01

Percent Solids: 81.6 Date Received: 07/13/00 8/9/00

Results for: SEDIMENT metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5880			P
7440-36-0	Antimony	0.61		N	P
7440-38-2	Arsenic	3.5		*	P
7440-39-3	Barium	62.8		*	P
7440-41-7	Beryllium	0.22	B		P
7440-43-9	Cadmium	0.97			P
7440-70-2	Calcium	1210		N*	P
7440-47-3	Chromium	17.0			P
7440-48-4	Cobalt	6.4			P
7440-50-8	Copper	91.0			P
7439-89-6	Iron	13400		*	P
7439-92-1	Lead	265		*	P
7439-95-4	Magnesium	1970		*	P
7439-96-5	Manganese	205		N	P
7439-97-6	Mercury	4.8		N*	CV
7440-02-0	Nickel	15.1			P
7440-09-7	Potassium	1080			P
7782-49-2	Selenium	1.3			P
7440-22-4	Silver	0.13	U		P
7440-23-5	Sodium	133			P
7440-28-0	Thallium	0.12	U		F
7440-62-2	Vanadium	19.4			P
7440-66-6	Zinc	179		N*	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T08079	MW3GW0101
T08079D	MW3GW0101D
T08079S	MW3GW0101S
T08080	MW1GW0101
T08100	MW5GW0101
T08101	MW4GW01~~SS~~55 7/25/00

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirnon Name: JUDY S. KIRNON

Date: 25 July 2000 Title: LAB TECHNICIAN

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08079

Laboratory: STL BALTIMORE

SDG No.: T08079

Matrix: WATER Client ID: MW3GW0101

Percent Solids: 0.0 Date Received: 07/13/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	185	B		P
7440-36-0	Antimony	3.5	B		P
7440-38-2	Arsenic	1.7	U		P
7440-39-3	Barium	53.8	B		P
7440-41-7	Beryllium	0.40	U		P
7440-43-9	Cadmium	0.34	B		P
7440-70-2	Calcium	53800		E	P
7440-47-3	Chromium	6.9	B		P
7440-48-4	Cobalt	7.5	U		P
7440-50-8	Copper	2.1	U		P
7439-89-6	Iron	178			P
7439-92-1	Lead	2.3	B		P
7439-95-4	Magnesium	24600		E	P
7439-96-5	Manganese	2.4	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	13.1	U		P
7440-09-7	Potassium	1750			P
7782-49-2	Selenium	3.2	B		P
7440-22-4	Silver	2.2	U		P
7440-23-5	Sodium	8630			P
7440-28-0	Thallium	1.7	U		F
7440-62-2	Vanadium	5.6	U		P
7440-66-6	Zinc	1.7	U		P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08080

Laboratory: STL BALTIMORE

SDG No.: T08079

Matrix: WATER Client ID: MW1GW0101

Percent Solids: 0.0 Date Received: 07/13/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	235			P
7440-36-0	Antimony	1.0	U		P
7440-38-2	Arsenic	1.7	U		P
7440-39-3	Barium	102	B		P
7440-41-7	Beryllium	0.40	U		P
7440-43-9	Cadmium	0.41	B		P
7440-70-2	Calcium	50500		E	P
7440-47-3	Chromium	1.6	B		P
7440-48-4	Cobalt	7.5	U		P
7440-50-8	Copper	2.1	U		P
7439-89-6	Iron	150			P
7439-92-1	Lead	1.7	B		P
7439-95-4	Magnesium	27200		E	P
7439-96-5	Manganese	20.7			P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	24.2	B		P
7440-09-7	Potassium	4260			P
7782-49-2	Selenium	1.8	U		P
7440-22-4	Silver	2.2	U		P
7440-23-5	Sodium	26700			P
7440-28-0	Thallium	1.7	U	W	F
7440-62-2	Vanadium	5.6	U		P
7440-66-6	Zinc	10.7	B		P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER
T08100

Laboratory: STL BALTIMORE

SDG No.: T08079

Matrix: WATER Client ID: MW5GW0101

Percent Solids: 0.0 Date Received: 07/13/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	683			P
7440-36-0	Antimony	1.0	U		P
7440-38-2	Arsenic	1.7	U		P
7440-39-3	Barium	23.7	B		P
7440-41-7	Beryllium	0.40	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	15900		E	P
7440-47-3	Chromium	6.1	B		P
7440-48-4	Cobalt	7.5	U		P
7440-50-8	Copper	2.1	U		P
7439-89-6	Iron	1490			P
7439-92-1	Lead	2.9	B		P
7439-95-4	Magnesium	11800		E	P
7439-96-5	Manganese	4.7	B		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	13.1	U		P
7440-09-7	Potassium	1080			P
7782-49-2	Selenium	1.8	U		P
7440-22-4	Silver	2.2	U		P
7440-23-5	Sodium	18800			P
7440-28-0	Thallium	1.7	U		F
7440-62-2	Vanadium	5.6	U		P
7440-66-6	Zinc	1.7	U		P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08101

Laboratory: STL BALTIMORE

SDG No.: T08079

Matrix: WATER

Client ID: MW4GW01~~SS~~55

Percent Solids: 0.0

Date Received: 07/13/00 @ 7/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	77.2	B		P
7440-36-0	Antimony	1.0	U		P
7440-38-2	Arsenic	1.7	U		P
7440-39-3	Barium	12.3	U		P
7440-41-7	Beryllium	0.40	U		P
7440-43-9	Cadmium	0.26	B		P
7440-70-2	Calcium	216	B	E	P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	7.5	U		P
7440-50-8	Copper	2.1	U		P
7439-89-6	Iron	5.5	U		P
7439-92-1	Lead	2.3	B		P
7439-95-4	Magnesium	95.6	U	E	P
7439-96-5	Manganese	2.4	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	13.1	U		P
7440-09-7	Potassium	174	U		P
7782-49-2	Selenium	1.8	U		P
7440-22-4	Silver	2.2	U		P
7440-23-5	Sodium	845	B		P
7440-28-0	Thallium	1.7	U		F
7440-62-2	Vanadium	5.6	U		P
7440-66-6	Zinc	1.7	U		P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

SEVERN TRENT SERVICES

STL Baltimore
19 Loveton Circle
Sparks, MD 21152

Tel: 410 771 4920
Fax: 410 771 4407
www.stl-inc.com

August 31, 2000

Mr. Scott Chang
CENB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Re: Fort Totten (70047.67)

Dear Mr. Chang:

Enclosed is our report on the analysis of five water samples collected for the Fort Totten project on 14, 15, and 17 July 2000. The electronic data deliverables (EDD) will follow. The invoice is included.

Please contact me if you have any questions or require further information and refer to report 000900. Unless other arrangements are made, we reserve the right to dispose of your samples sixty (60) days from the date of this letter. We will retain the raw data for seven years from this date.

Sincerely,

Natasha K. Sullivan
Laboratory Project Manager

NKS/gsp
enclosure

SEVERN TRENT SERVICES

STL Baltimore

LABORATORY DATA REPORT

Prepared for:
CENB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Prepared by:

Severn Trent Laboratories, Inc. - Baltimore
19 Loveton Circle
Sparks, MD 46052

Report 000900

August 2000

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		4. Method Blank Summary (Form IV)	040005
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	B.	Sample Data (Form I)	050007
		1. Data for Sample MW4-GW-01-01	050008
		2. Data for Sample MW4-GW-01-22	050014
		3. Data for Sample MW2-GW-01-01	050017
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		2. Data for Sample MW4-GW-01-22	060010
		3. Data for Sample MW2-GW-01-01	060013
		4. Data for Sample MW4-GW-01-44	060016
	C.	Standards Data	060019
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		2. Continuing Calibration Check (Form VII)	060022
	D.	Raw QC Data	060043
		1. Method Blank (Form I + raw instrument data)	060044
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1. NARRATIVE

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: **EN-HT, HTRW Engineering**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000900**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **31 August 2000**

This report contains the results of the analysis of five water samples collected on 14, 15, and 17 July 2000 in support of the referenced project.

SAMPLE RECEIPT

The samples arrived with custody seals absent by hand at Severn Trent Laboratories - Baltimore on 17 July 2000. Upon receipt, the samples were inspected and compared with the chain-of-custody record. The samples were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis.

Client Sample Designation	STL - Baltimore Number
MW4-GW-01-01	0008202
MW4-GW-01-22	0008203
MW4-GW-01-66-C	0008204
MW2-GW-01-01	0008205
MW4-GW-01-44	0008206

Following this narrative section are glossaries of data qualifiers (Tables 1 and 2), codes associated with manual integration of chromatographic peaks (Table 3), and the original chain-of-custody records. Analytical results and quality control information are summarized in the appended data package which has been formatted to be consistent with the deliverable requirements of this project.

ANALYTICAL METHODS

The analytical methods used by the laboratory are referenced by the STL Baltimore Method SOP which is formatted as STL-M-XXXXX-Y, where XXXXX is the reference method and Y is the SOP revision number. For example, analyses performed using EPA SW846 Method 8260B are identified as STL-M-8260B-3 where 3 is the laboratory SOP revision number. General Chemistry methods which are a consolidation of several reference methods, e.g. STL-M-CN for cyanide determinations, also include the identification of the specific reference method used for the analyses.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: **EN-HT, HTRW Engineering**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000900**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **31 August 2000**

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

VOLATILES by GC/MS - WATER (ST0008202 - ST0008206)

Sample Chronology: Five samples and associated quality control were analyzed on 27 July 2000 and 10 August 2000 for the client specified list of analytes following the procedures specified in STL-M-5030B-1/STL-M-8260B-4. All holding times were met except for sample MW4-GW-01-66-C which was analyzed ten days outside the fourteen day holding time.

A batch MS/MSD was not analyzed on 10 August 2000. However, a LCS/LCSD was analyzed in order to provide precision data.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exception:

- The MSD, performed on sample MW4-GW-01-44, had the recovery of benzene (90%) below the lower laboratory QC limit of 91%.

SEMIVOLATILES by GC/MS - WATER (STL0008202 - STL0008206)

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: **EN-HT, HTRW Engineering**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000900**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **31 August 2000**

Sample Chronology: Four samples and associated quality control were extracted on 21 July 2000, following the procedures specified in STL-M-3520C-0. The resultant extracts were analyzed from 31 July through 01 August 2000 for the client specific list of analytes following the procedures specified in the STL-M-8270C-2. All holding times were met.

The batch MS/MSD was performed on another client's sample. All data associated with these QC samples has been included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

PAHs by HPLC- WATER (STL0008202- STL0008203; STL0008205- STL0008206)

Sample Chronology: Four samples and associated quality control were extracted on 21 July 2000 by Method STL-M-3520C-REV0. The sample extracts and associated QC extracts were analyzed on 17 and 30 August 2000 for the method specified list of analytes by Method STL-M-8310-REV1. All holding times were met.

Sample MW4-GW-01-01 was reanalyzed at a 10X dilution to bring extract concentrations of target analytes within calibration range.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All sample performance criteria were met for the reported samples with the following exception:

- Samples MW4-GW-01-01 (136%UV, 135%FL), MW4-GW-01-22 (102%UV, 102%FL), MW4-GW-01-22MS (111%UV, 113%FL), and MW-GW-01-22MSD (105%UV, 106%FL) had the recoveries for benzo[e]pyrene above the upper QC limit of 101%. All surrogate recoveries were within QC limits for the method blank and LCS, indicating acceptable method performance.

- The MS had several recoveries above the upper QC limit. The MSD had the recovery for fluorene (95%) above the upper QC limit of 92%. The %RPDs for many compounds

exceeded the QC limit. All recoveries were within QC limits for the LCS, indicating acceptable method performance.

HERBICIDES by GC - WATER (STL0008202-STL0008203; STL0008205-STL0008206)

Sample Chronology: Four samples and associated QC were extracted on 21 July 2000 and analyzed on 27 and 28 July 2000 following the procedures specified in STL-M-8151A-1 for pentachlorophenol. All hold times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

METALS - WATER (STL0008202 - STL0008203, STL0008205 - STL0008206)

Sample Chronology: Four samples were prepared by STL-M-3010A-2/3020A-3/7470A/1A-2 on 27 and 29 July 2000 and analyzed for TAL metals by STL-M-6010B-1/7000S-2/7470A/1A-2 28 July - 01 August 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples.

CERTIFICATION OF RESULTS

The Laboratory certifies that the reported results relate only to those samples tested and that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in STL Baltimore's Quality Assurance program for other than the conditions detailed above. Release of the data contained in this report has been authorized by the Laboratory Project Manager as verified by the following signature.

August 31, 2000
Natasha K. Sullivan, Laboratory Project Manager

TABLE 1. LABORATORY ORGANIC ANALYSIS DATA QUALIFIERS [1]

Qualifiers other than those listed below may be required to properly define the results. If used, they are given an alphabetic designation not already specified in this table or in a project/program document. such as a Quality Assurance Project Plan or a contract Statement of Work. Each additional qualifier is fully described in the Analytical Narrative section of the laboratory report.

U Indicates a target compound was analyzed for but not detected. The sample Reporting Limit (RL) is corrected for dilution and, if a soil sample, for percent moisture, if reported on a dry weight basis.

J Indicates an estimated value. This qualifier is used under the following circumstances:

1) when estimating a concentration for tentatively identified compounds (TICs) in GC/MS analyses, where a 1:1 response is assumed,
2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the RL but greater than the method detection limit (MDL).

B This qualifier is used when the analyte is found in the associated method blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. For GC/MS analyses, this qualifier is used for a TIC, as well as, for a positively identified target compound.

E This qualifier identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

D When applied, this qualifier identifies all compound concentrations reported from a secondary dilution analysis.

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

N Indicates presumptive evidence of a compound. This qualifier is only used for GC/MS TICs, where the identification is based on a mass spectral library search. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N qualifier is not used.

P When applied, this qualifier indicates a reported value from a GC analysis when there is greater than 25% difference for detected concentrations between the two GC columns.

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(1) These Data Qualifiers are added by the laboratory to provide additional information for the reported results. ***They should not be confused with the qualifiers applied to the reported data as a result of a data validation process performed independently of the laboratory reporting procedure.***

TABLE 2. LABORATORY INORGANIC ANALYSIS DATA QUALIFIERS [1]

C ***(Concentration) qualifiers:***

- **B** Reported value is less than the project-specified Reporting Limit (RL), but greater than the method-specified Instrument Detection Limit (IDL) or Method Detection Limit (MDL).
- **U** Analyte analyzed for but not detected (concentration is less than the method-specified Instrument Detection Limit (IDL) or Method Detection Limit (MDL).

Q ***(Quality control) qualifiers:***

- **E** Reported value is estimated because of presence of interference.
- **M** Duplicate injection precision not met.
- **N** Spiked sample recovery is not within control limits.
- **S** Reported value is determined by the method of standard additions (MSA).
- **W** Postdigestion spike for furnace Atomic Absorption Spectrophotometric (AAS) AAS analysis is out of control limits (85-115%) and sample absorbance is less than 50% of spike absorbance.
- ***** Duplicate analyses is not within control limits.
- **+** Correlation coefficient for MSA is less than 0.995.

M ***(Method) qualifiers:***

- **P** Inductively Coupled Plasma (ICP)
- **A** Flame AAS
- **F** Furnace AAS
- **CV** Cold Vapor AAS
- **AV** Automated Cold Vapor AAS
- **AS** Semiautomated Spectrophotometric
- **C** Manual Spectrophotometric
- **T** Titrimetric
- **NR** Analyte is not required to be determined.

(1) These Data Qualifiers are added by the laboratory to provide additional information for the reported results. ***They should not be confused with the qualifiers applied to the reported data as a result of a data validation process performed independently of the laboratory reporting procedure.***

TABLE 3. CODES ASSOCIATED WITH MANUAL INTEGRATION OF CHROMATOGRAPHIC PEAKS

M1 . . . . Software failed to integrate peak or integrated peak improperly

M2 . . . . Multiple peaks within window, analyst's discretion used in peak identification.

M3 . . . . Close eluting or near-coelution of interferences.

M4 . . . . Adding or removing area due to peak tailing - subject to consistency within the sequence.

M5 . . . . Adding/removing area due to positive baseline deflection matrix effect.

M6 . . . . Adding/removing area due to negative baseline deflection matrix effect.

M7 . . . . Retention time shifts.

M8 . . . . Skimming vs. dropped baseline.

M9 . . . . Adding area due to peak splitting .

M10 . . . Secondary ions or qualifier ions.

Note: Appropriate Qualifiers are used and specified in the data package; either on the individual quantitation reports or in the Technical Review Checklists.

F:\GROUP\FINALRPT\MASTER\MANINT.MAS

2. CHAIN-OF-CUSTODY

020000

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: USACE
Project Manager or Contact: Scott Chang
Phone:
Project No. Ft TOTTEN
Project Name: Ft. TOTTEN
Dept.: Task:
Sample Storage Location: LSTT Voa 10214
ATO Number:
Page 1 of 1
Report #: 000900

Report Deliverables: 1 2 3 4 D E
EDD: Yes/No Gis+excel
DUE TO CLIENT: 8/9/00

Parameters/Method Numbers for Analysis

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	VOC's TCL 8260	SVOC's TCL 8270	PAH's 8310	Pentachlorophenol 8151	TAL Metal 6000/7000	TRIP BLANKS	York	New Holding Times	EA Labs Accession Number	Remarks
14JUL	1330	X		MW4-GW-01-01	4	X							0008202	~~0008202~~	LPM: NKS
14JUL	1330	X		MW4-GW-01-01	3		X							~~0008203~~	PE 7/17/00
14JUL	1330	X		MW4-GW-01-01	3			X						~~0008204~~	PE 7/17/00
14JUL	1330	X		MW4-GW-01-01	3				X					0008205	PE 7/17/00
14JUL	1730	X		MW4-GW-01-01	1					X				~~0008206~~	7/17/00
14JUL	1400	X		MW4-GW-01-22	4	X							0008203	~~0008207~~	New York Holding Times
7/14	1400	X		MW4-GW-01-22	3		X							~~0008208~~	
7/14	1400	X		MW4-GW-01-22	3			X						~~0008209~~	PE 7/17/00
7/14	1400	X		MW4-GW-01-22	3				X					~~0008210~~	
7/14	1800	X		MW4-GW-01-22	1					X				~~0008211~~	
7/14	1330	X		MW4-GW-01-66-C	2						X		0008204	~~0008212~~	
7/15	1400	X		MW2-GW-01-01	4	X							0008205	~~0008213~~	
7/15	1400	X		MW2-GW-01-01	3		X							~~0008214~~	18 Voa, 4C
7/15	1400	X		MW2-GW-01-01	3			X						~~0008215~~	
7/15	1400	X		MW2-GW-01-01	3				X					~~0008216~~	36 pest
7/15	1800	X		MW2-GW-01-01	1					X				~~0008217~~	PE 7/17/00
7/15	0900	X		MW4-GW-01-44	4	X							0008206	~~0008218~~	PE 7/17/00 L18315
7/15	0900	X		MW4-GW-01-44	3		X							~~0008219~~	PE 7/17/00
7/15	0900	X		MW4-GW-01-44	6			X	X					~~0008220~~	(PAH + Pento) 6 Ambers
7/15	0900	X		MW4-GW-01-44	1	X				X				~~0008221~~	PE 7/17/00 L00000 7474

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
JOE Leise	00 17JUL 1415	JOE Leise	00 17JUL 1415		
Relinquished by: (Signature)	**Date/Time**	**Received by Laboratory: (Signature)**	**Date/Time**	**Airbill Number:**	**Sample Shipped by: (Circle)**
		[signature]	7/17/00 1435		Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp. 5 C pH: X Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

020001

Severn Trent Laboratories
STL Baltimore

19 Loveton Circle
Sparks, Maryland 21152
(410) 771-4920

Committed to *Your* Success

COOLER RECEIPT CHECKLIST

Report: 000900

Project: Ft. Totten
Received: 17-JUL-00 14:35
COC: COC0007474
Samples: 0008202-0008206

A. COOLER INSPECTION:

Date cooler was opened: 7/17/00 (Date) Russell Easter (Custodian Signature)

1. Did cooler come with a shipping slip, air bill, etc? YES (NO) N/A NCR# _____
1a. Circle courier: Federal Express UPS *Air bill Number from Chain-of-Custody* _____
1b. Circle, if applicable: Handcarried Other

2. Custody seals were present on outside of cooler? YES (NO) N/A NCR# _____
3. Custody seals were unbroken at the time of arrival? YES NO (N/A) NCR# _____
4. Chain-of-Custody (COC)records were present and legible? (YES) NO N/A NCR# _____
5. Were the COC records completed? (YES) NO N/A NCR# _____
6. Was cooler temperature 4C ± 2C? (YES) NO N/A NCR# _____
5 C

B. SAMPLE INSPECTION

9. All bottles arrived unbroken? (YES) NO N/A NCR# _____
10. All bottles labels were legible and complete? (YES) NO N/A NCR# _____
11. Containers were correct for the analysis listed on the COC? (YES) NO N/A NCR# _____
12. Were preservatives checked (except VOA vials)? (YES) NO N/A NCR# _____
13. Were bubbles absent in Volatiles samples? YES (NO) N/A NCR# _____

Special Notes:
Bubbles present in (1) MW4-GW-01-66C

Jennifer E. Jensen (Sample Management Officer) 7/17/00 Date

September 29, 1999/mmu

M:\GROUP\QA\FORMS\COOLER.WPD

020002

3. VOLATILES DATA - Water

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW4-GW-01-01

Lab Name: STL BALTIMORE Contract: 000900

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008202

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC3A7825.D

Level: (low/med) LOW Date Received: 7/17/00

% Moisture: not dec. Date Analyzed: 7/27/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	5	U
75-15-0	Carbon Disulfide	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
107-06-2	1,2-Dichloroethane	5	U
71-43-2	Benzene	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
124-48-1	Chlorodibromomethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW4-GW-01-22

Lab Name: STL BALTIMORE Contract: 000900

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008203

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC3A7826.D

Level: (low/med) LOW Date Received: 7/17/00

% Moisture: not dec. Date Analyzed: 7/27/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	5	U
75-15-0	Carbon Disulfide	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
107-06-2	1,2-Dichloroethane	5	U
71-43-2	Benzene	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
124-48-1	Chlorodibromomethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U

030019

1A

VOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-66-C

Lab Name: STL BALTIMORE Contract: 000900

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008204

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VJ9B1909.D

Level: (low/med) LOW Date Received: 7/25/00

% Moisture: not dec. Date Analyzed: 8/10/00

GC Column: DB-624 ID: 0.53 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	2	JB
75-15-0	Carbon Disulfide	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
107-06-2	1,2-Dichloroethane	5	U
71-43-2	Benzene	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
124-48-1	Chlorodibromomethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW2-GW-01-01

Lab Name: STL BALTIMORE Contract: 000900

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008205

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC3A7827.D

Level: (low/med) LOW Date Received: 7/17/00

% Moisture: not dec. Date Analyzed: 7/27/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	5	U
75-15-0	Carbon Disulfide	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	5	U
67-66-3	Chloroform	9	
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
107-06-2	1,2-Dichloroethane	5	U
71-43-2	Benzene	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
124-48-1	Chlorodibromomethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U

1A

EPA SAMPLE NO.

VOLATILE ORGANICS ANALYSIS DATA SHEET

MW4-GW-01-44

Lab Name: STL BALTIMORE Contract: 000900

Lab Code: ST LABS Case No.: SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008206

Sample wt/vol: 5.0 (g/ml) ML Lab File ID: VC3A7828.D

Level: (low/med) LOW Date Received: 7/17/00

% Moisture: not dec. Date Analyzed: 7/27/00

GC Column: DB-624 ID: 0.25 (mm) Dilution Factor: 1.0

Soil Extract Volume: (uL) Soil Aliquot Volume: (uL)

CONCENTRATION UNITS:

CAS NO.	COMPOUND	(ug/L or ug/Kg) UG/L	Q
74-87-3	Chloromethane	5	U
75-01-4	Vinyl Chloride	5	U
74-83-9	Bromomethane	5	U
75-00-3	Chloroethane	5	U
67-64-1	Acetone	10	U
75-35-4	1,1-Dichloroethene	5	U
75-09-2	Methylene Chloride	4	J
75-15-0	Carbon Disulfide	5	U
75-34-3	1,1-Dichloroethane	5	U
78-93-3	2-Butanone	10	U
156-59-2	cis-1,2-Dichloroethene	5	U
67-66-3	Chloroform	5	U
71-55-6	1,1,1-Trichloroethane	5	U
56-23-5	Carbon Tetrachloride	5	U
156-60-5	trans-1,2-Dichloroethene	5	U
107-06-2	1,2-Dichloroethane	5	U
71-43-2	Benzene	5	U
79-01-6	Trichloroethene	5	U
78-87-5	1,2-Dichloropropane	5	U
75-27-4	Bromodichloromethane	5	U
108-10-1	4-Methyl-2-Pentanone	10	U
10061-01-5	cis-1,3-Dichloropropene	5	U
108-88-3	Toluene	5	U
10061-02-6	trans-1,3-Dichloropropene	5	U
79-00-5	1,1,2-Trichloroethane	5	U
591-78-6	2-Hexanone	10	U
127-18-4	Tetrachloroethene	5	U
124-48-1	Chlorodibromomethane	5	U
108-90-7	Chlorobenzene	5	U
100-41-4	Ethylbenzene	5	U
1330-20-7	Xylenes (total)	5	U
100-42-5	Styrene	5	U
75-25-2	Bromoform	5	U
79-34-5	1,1,2,2-Tetrachloroethane	5	U

4. SEMIVOLATILES DATA - Water

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008202

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1417.D

Level: (low/med) LOW Date Received: 07/17/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/21/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/01/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
541-73-1	1,3-Dichlorobenzene	9.5	U
106-46-7	1,4-Dichlorobenzene	9.5	U
95-50-1	1,2-Dichlorobenzene	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitrosodi-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
120-82-1	1,2,4-Trichlorobenzene	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	19	U
87-68-3	Hexachlorobutadiene	9.5	U
59-50-7	4-Chloro-3-methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	48	U
91-58-7	2-Chloronaphthalene	9.5	U
88-74-4	2-Nitroaniline	48	U
131-11-3	Dimethylphthalate	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
208-96-8	Acenaphthylene	9.5	U
99-09-2	3-Nitroaniline	48	U
83-32-9	Acenaphthene	9.5	U
51-28-5	2,4-Dinitrophenol	48	U
100-02-7	4-Nitrophenol	48	U
132-64-9	Dibenzofuran	9.5	U
121-14-2	2,4-Dinitrotoluene	9.5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008202

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1417.D

Level: (low/med) LOW Date Received: 07/17/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/21/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/01/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	9.5	U
7005-72-3	4-Chlorophenyl phenylether	9.5	U
86-73-7	Fluorene	9.5	U
100-01-6	4-Nitroaniline	48	U
534-52-1	4,6-Dinitro-2-methylphenol	48	U
86-30-6	N-Nitrosodiphenylamine(1)	9.5	U
101-55-3	4-Bromophenyl phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
87-86-5	Pentachlorophenol	48	U
85-01-8	Phenanthrene	1.4	J
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butyl phthalate	9.5	U
206-44-0	Fluoranthene	2.8	J
129-00-0	Pyrene	1.8	J
85-68-7	Butylbenzylphthalate	9.5	U
91-94-1	3,3'-Dichlorobenzidine	19	U
56-55-3	Benzo(a)anthracene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.5	U
218-01-9	Chrysene	1.1	J
117-84-0	Di-n-octyl phthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	1.2	J
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-22

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008203

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1418.D

Level: (low/med) LOW Date Received: 07/17/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/21/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/01/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
541-73-1	1,3-Dichlorobenzene	9.5	U
106-46-7	1,4-Dichlorobenzene	9.5	U
95-50-1	1,2-Dichlorobenzene	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitrosodi-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
120-82-1	1,2,4-Trichlorobenzene	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	19	U
87-68-3	Hexachlorobutadiene	9.5	U
59-50-7	4-Chloro-3-methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	48	U
91-58-7	2-Chloronaphthalene	9.5	U
88-74-4	2-Nitroaniline	48	U
131-11-3	Dimethylphthalate	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
208-96-8	Acenaphthylene	9.5	U
99-09-2	3-Nitroaniline	48	U
83-32-9	Acenaphthene	9.5	U
51-28-5	2,4-Dinitrophenol	48	U
100-02-7	4-Nitrophenol	48	U
132-64-9	Dibenzofuran	9.5	U
121-14-2	2,4-Dinitrotoluene	9.5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-22

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008203

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1418.D

Level: (low/med) LOW Date Received: 07/17/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/21/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/01/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	9.5	U
7005-72-3	4-Chlorophenyl phenylether	9.5	U
86-73-7	Fluorene	9.5	U
100-01-6	4-Nitroaniline	48	U
534-52-1	4,6-Dinitro-2-methylphenol	48	U
86-30-6	N-Nitrosodiphenylamine(1)	9.5	U
101-55-3	4-Bromophenyl phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
87-86-5	Pentachlorophenol	48	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butyl phthalate	9.5	U
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
85-68-7	Butylbenzylphthalate	9.5	U
91-94-1	3,3'-Dichlorobenzidine	19	U
56-55-3	Benzo(a)anthracene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.5	U
218-01-9	Chrysene	9.5	U
117-84-0	Di-n-octyl phthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	9.5	U
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW2-GW-01-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008205

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1419.D

Level: (low/med) LOW Date Received: 07/17/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/21/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/01/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
541-73-1	1,3-Dichlorobenzene	9.5	U
106-46-7	1,4-Dichlorobenzene	9.5	U
95-50-1	1,2-Dichlorobenzene	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitrosodi-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
120-82-1	1,2,4-Trichlorobenzene	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	19	U
87-68-3	Hexachlorobutadiene	9.5	U
59-50-7	4-Chloro-3-methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	48	U
91-58-7	2-Chloronaphthalene	9.5	U
88-74-4	2-Nitroaniline	48	U
131-11-3	Dimethylphthalate	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
208-96-8	Acenaphthylene	9.5	U
99-09-2	3-Nitroaniline	48	U
83-32-9	Acenaphthene	9.5	U
51-28-5	2,4-Dinitrophenol	48	U
100-02-7	4-Nitrophenol	48	U
132-64-9	Dibenzofuran	9.5	U
121-14-2	2,4-Dinitrotoluene	9.5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW2-GW-01-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008205

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1419.D

Level: (low/med) LOW Date Received: 07/17/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/21/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/01/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	9.5	U
7005-72-3	4-Chlorophenyl phenylether	9.5	U
86-73-7	Fluorene	9.5	U
100-01-6	4-Nitroaniline	48	U
534-52-1	4,6-Dinitro-2-methylphenol	48	U
86-30-6	N-Nitrosodiphenylamine(1)	9.5	U
101-55-3	4-Bromophenyl phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
87-86-5	Pentachlorophenol	48	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butyl phthalate	9.5	U
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
85-68-7	Butylbenzylphthalate	9.5	U
91-94-1	3,3'-Dichlorobenzidine	19	U
56-55-3	Benzo(a)anthracene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.5	U
218-01-9	Chrysene	9.5	U
117-84-0	Di-n-octyl phthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	9.5	U
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-44

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008206

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1420.D

Level: (low/med) LOW Date Received: 07/17/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/21/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/01/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	9.5	U
111-44-4	bis(2-Chloroethyl)ether	9.5	U
95-57-8	2-Chlorophenol	9.5	U
541-73-1	1,3-Dichlorobenzene	9.5	U
106-46-7	1,4-Dichlorobenzene	9.5	U
95-50-1	1,2-Dichlorobenzene	9.5	U
95-48-7	2-Methylphenol	9.5	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.5	U
106-44-5	4-Methylphenol	9.5	U
621-64-7	N-Nitrosodi-n-propylamine	9.5	U
67-72-1	Hexachloroethane	9.5	U
98-95-3	Nitrobenzene	9.5	U
78-59-1	Isophorone	9.5	U
88-75-5	2-Nitrophenol	9.5	U
105-67-9	2,4-Dimethylphenol	9.5	U
111-91-1	bis(2-Chloroethoxy)methane	9.5	U
120-83-2	2,4-Dichlorophenol	9.5	U
120-82-1	1,2,4-Trichlorobenzene	9.5	U
91-20-3	Naphthalene	9.5	U
106-47-8	4-Chloroaniline	19	U
87-68-3	Hexachlorobutadiene	9.5	U
59-50-7	4-Chloro-3-methylphenol	9.5	U
91-57-6	2-Methylnaphthalene	9.5	U
77-47-4	Hexachlorocyclopentadiene	9.5	U
88-06-2	2,4,6-Trichlorophenol	9.5	U
95-95-4	2,4,5-Trichlorophenol	48	U
91-58-7	2-Chloronaphthalene	9.5	U
88-74-4	2-Nitroaniline	48	U
131-11-3	Dimethylphthalate	9.5	U
606-20-2	2,6-Dinitrotoluene	9.5	U
208-96-8	Acenaphthylene	9.5	U
99-09-2	3-Nitroaniline	48	U
83-32-9	Acenaphthene	9.5	U
51-28-5	2,4-Dinitrophenol	48	U
100-02-7	4-Nitrophenol	48	U
132-64-9	Dibenzofuran	9.5	U
121-14-2	2,4-Dinitrotoluene	9.5	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-44

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008206

Sample wt/vol: 1050 (g/ml) ML Lab File ID: SC3D1420.D

Level: (low/med) LOW Date Received: 07/17/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/21/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/01/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	9.5	U
7005-72-3	4-Chlorophenyl phenylether	9.5	U
86-73-7	Fluorene	9.5	U
100-01-6	4-Nitroaniline	48	U
534-52-1	4,6-Dinitro-2-methylphenol	48	U
86-30-6	N-Nitrosodiphenylamine(1)	9.5	U
101-55-3	4-Bromophenyl phenylether	9.5	U
118-74-1	Hexachlorobenzene	9.5	U
87-86-5	Pentachlorophenol	48	U
85-01-8	Phenanthrene	9.5	U
120-12-7	Anthracene	9.5	U
86-74-8	Carbazole	9.5	U
84-74-2	Di-n-butyl phthalate	9.5	U
206-44-0	Fluoranthene	9.5	U
129-00-0	Pyrene	9.5	U
85-68-7	Butylbenzylphthalate	9.5	U
91-94-1	3,3'-Dichlorobenzidine	19	U
56-55-3	Benzo(a)anthracene	9.5	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.5	U
218-01-9	Chrysene	9.5	U
117-84-0	Di-n-octyl phthalate	9.5	U
205-99-2	Benzo(b)fluoranthene	9.5	U
207-08-9	Benzo(k)fluoranthene	9.5	U
50-32-8	Benzo(a)pyrene	9.5	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.5	U
53-70-3	Dibenz(a,h)anthracene	9.5	U
191-24-2	Benzo(g,h,i)perylene	9.5	U

5. PAH DATA

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

MW4-GW-01-01

Lab Name: STL BALTIMORE Contract: FT. TOTTE

Lab Code: STLB Case No.: 000900 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008202

Sample wt/vol: 1000 (g/ml) ML Lab File ID: LA1X356F.D

% Moisture: decanted:(Y/N) N Date Received: 07/17/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/21/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/17/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	NAPHTHALENE	0.26	U
208-96-8	ACENAPHTHYLENE	0.71	U
90-12-0	1-METHYL-NAPHTHALENE	0.47	U
91-57-6	2-METHYL-NAPHTHALENE	6.7	P
83-32-9	ACENAPHTHENE	11	P
86-73-7	FLUORENE	0.095	U
85-01-8	PHENANTHRENE	7.4	E
120-12-7	ANTHRACENE	1.1	
206-44-0	FLUORANTHENE	15	E
129-00-0	PYRENE	10	EP
56-55-3	BENZO[a]ANTHRACENE	4.1	E
218-01-9	CHRYSENE	5.1	E
205-99-2	BENZO[b]FLUORANTHENE	5.9	P
207-08-9	BENZO[k]FLUORANTHENE	2.6	
50-32-8	BENZO[a]PYRENE	4.4	E
53-70-3	DIBENZO[a,h]ANTHRACENE	0.52	P
191-24-2	BENZO[g,h,i]PERYLENE	3.5	
193-39-5	INDENO[1,2,3-cd]PYRENE	3.7	

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

W4-GW-01-01D

Lab Name: STL BALTIMORE Contract: LOOW

Lab Code: STLB Case No.: 000966 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008202DL

Sample wt/vol: 1000 (g/ml) ML Lab File ID: LA1X761F.D

% Moisture: decanted:(Y/N) N Date Received: 07/27/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 08/01/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/30/00

Injection Volume: 1.0 (uL) Dilution Factor: 10.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	NAPHTHALENE	2.6	U
208-96-8	ACENAPHTHYLENE	7.1	U
90-12-0	1-METHYL-NAPHTHALENE	4.7	U
91-57-6	2-METHYL-NAPHTHALENE	6.2	D
83-32-9	ACENAPHTHENE	6.2	P D
86-73-7	FLUORENE	0.95	U
85-01-8	PHENANTHRENE	7.6	D
120-12-7	ANTHRACENE	0.39	U
206-44-0	FLUORANTHENE	13	D
129-00-0	PYRENE	9.5	D
56-55-3	BENZO[a]ANTHRACENE	4.4	D
218-01-9	CHRYSENE	5.4	D
205-99-2	BENZO[b]FLUORANTHENE	7.2	D
207-08-9	BENZO[k]FLUORANTHENE	2.5	P D
50-32-8	BENZO[a]PYRENE	4.7	D
53-70-3	DIBENZO[a,h]ANTHRACENE	0.77	U
191-24-2	BENZO[g,h,i]PERYLENE	4.0	P D
193-39-5	INDENO[1,2,3-cd]PYRENE	4.0	D

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

MW4-GW-01-22

Lab Name: STL BALTIMORE Contract: FT. TOTTE

Lab Code: STLB Case No.: 000900 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008203

Sample wt/vol: 1000 (g/ml) ML Lab File ID: LA1X357F.D

% Moisture: decanted:(Y/N) N Date Received: 07/17/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/21/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/17/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	NAPHTHALENE	0.26	U
208-96-8	ACENAPHTHYLENE	0.71	U
90-12-0	1-METHYL-NAPHTHALENE	0.47	U
91-57-6	2-METHYL-NAPHTHALENE	1.1	
83-32-9	ACENAPHTHENE	1.6	P
86-73-7	FLUORENE	0.095	U
85-01-8	PHENANTHRENE	0.91	
120-12-7	ANTHRACENE	0.14	
206-44-0	FLUORANTHENE	2.5	
129-00-0	PYRENE	1.7	
56-55-3	BENZO[a]ANTHRACENE	0.71	
218-01-9	CHRYSENE	0.83	
205-99-2	BENZO[b]FLUORANTHENE	1.1	
207-08-9	BENZO[k]FLUORANTHENE	0.47	
50-32-8	BENZO[a]PYRENE	0.77	
53-70-3	DIBENZO[a,h]ANTHRACENE	0.75	P
191-24-2	BENZO[g,h,i]PERYLENE	0.56	
193-39-5	INDENO[1,2,3-cd]PYRENE	0.62	P

1D

EPA SAMPLE NO.

PESTICIDE ORGANICS ANALYSIS DATA SHEET

MW2-GW-01-01

Lab Name: STL BALTIMORE Contract: FT. TOTTE

Lab Code: STLB Case No.: 000900 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008205

Sample wt/vol: 1000 (g/ml) ML Lab File ID: LA1X360F.D

% Moisture: decanted:(Y/N) N Date Received: 07/17/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/21/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/17/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	NAPHTHALENE	0.26	U
208-96-8	ACENAPHTHYLENE	0.71	U
90-12-0	1-METHYL-NAPHTHALENE	0.47	U
91-57-6	2-METHYL-NAPHTHALENE	0.39	U
83-32-9	ACENAPHTHENE	0.44	U
86-73-7	FLUORENE	0.095	U
85-01-8	PHENANTHRENE	0.054	U
120-12-7	ANTHRACENE	0.039	U
206-44-0	FLUORANTHENE	0.098	U
129-00-0	PYRENE	0.079	U
56-55-3	BENZO[a]ANTHRACENE	0.053	U
218-01-9	CHRYSENE	0.032	U
205-99-2	BENZO[b]FLUORANTHENE	0.080	U
207-08-9	BENZO[k]FLUORANTHENE	0.052	U
50-32-8	BENZO[a]PYRENE	0.036	U
53-70-3	DIBENZO[a,h]ANTHRACENE	0.077	U
191-24-2	BENZO[g,h,i]PERYLENE	0.086	U
193-39-5	INDENO[1,2,3-cd]PYRENE	0.063	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-44

Lab Name: STL BALTIMORE Contract: FT. TOTTE

Lab Code: STLB Case No.: 000900 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008206

Sample wt/vol: 1000 (g/ml) ML Lab File ID: LA1X361F.D

% Moisture: decanted:(Y/N) N Date Received: 07/17/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/21/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/17/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
91-20-3	NAPHTHALENE	0.26	U
208-96-8	ACENAPHTHYLENE	0.71	U
90-12-0	1-METHYL-NAPHTHALENE	0.47	U
91-57-6	2-METHYL-NAPHTHALENE	0.39	U
83-32-9	ACENAPHTHENE	0.44	U
86-73-7	FLUORENE	0.095	U
85-01-8	PHENANTHRENE	0.054	U
120-12-7	ANTHRACENE	0.039	U
206-44-0	FLUORANTHENE	0.098	U
129-00-0	PYRENE	0.079	U
56-55-3	BENZO[a]ANTHRACENE	0.053	U
218-01-9	CHRYSENE	0.032	U
205-99-2	BENZO[b]FLUORANTHENE	0.080	U
207-08-9	BENZO[k]FLUORANTHENE	0.052	U
50-32-8	BENZO[a]PYRENE	0.036	U
53-70-3	DIBENZO[a,h]ANTHRACENE	0.077	U
191-24-2	BENZO[g,h,i]PERYLENE	0.086	U
193-39-5	INDENO[1,2,3-cd]PYRENE	0.063	U

6. HERBICIDES DATA - Water

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-01

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008202

Sample wt/vol: 1010 (g/ml) ML Lab File ID: 340FABSM.D

% Moisture: decanted:(Y/N) N Date Received: 07/17/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/21/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
87-86-5	PCP	0.99	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-22

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008203

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 343FABSM.D

% Moisture: decanted:(Y/N) N Date Received: 07/17/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/21/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
87-86-5	PCP	1.0	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW2 GW-01-01

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008205

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 344FABSM.D

% Moisture: decanted:(Y/N) N Date Received: 07/17/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/21/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
87-86-5	PCP	1.0	U

060013R

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-44

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008206

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 34$FABSM.D

% Moisture: decanted:(Y/N) N Date Received: 07/17/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/21/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
87-86-5	PCP	1.0	U

7. METALS DATA

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T08202	MW4GW0101
T08202D	MW4GW0101D
T08202S	MW4GW0101S
T08203	MW4GW0122
T08205	MW2GW0101
T08206	MW2GW0144

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: [signature] Name: Wendy C VanMiddlesworth

Date: 8/16/00 Title: Chemist III

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08202

Laboratory: STL BALTIMORE

SDG No.: T08202

Matrix: WATER

Client ID: MW4GW0101

Percent Solids: 0.0

Date Received: 07/17/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	270			P
7440-36-0	Antimony	1.0	B		P
7440-38-2	Arsenic	1.7	U		P
7440-39-3	Barium	57.9	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	48700			P
7440-47-3	Chromium	2.1	B		P
7440-48-4	Cobalt	7.5	U		P
7440-50-8	Copper	1.1	B		P
7439-89-6	Iron	275			P
7439-92-1	Lead	10.5			P
7439-95-4	Magnesium	27200			P
7439-96-5	Manganese	2.4	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.0	B		P
7440-09-7	Potassium	2070			P
7782-49-2	Selenium	4.0	B		P
7440-22-4	Silver	2.2	U		P
7440-23-5	Sodium	73000			P
7440-28-0	Thallium	1.7	U		F
7440-62-2	Vanadium	5.6	U		P
7440-66-6	Zinc	1.7	U		P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08203

Laboratory: STL BALTIMORE

SDG No.: T08202

Matrix: WATER Client ID: MW4GW0122

Percent Solids: 0.0 Date Received: 07/17/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	345			P
7440-36-0	Antimony	1.0	U		P
7440-38-2	Arsenic	1.7	U		P
7440-39-3	Barium	55.6	B		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	47000			P
7440-47-3	Chromium	2.4	B		P
7440-48-4	Cobalt	7.5	U		P
7440-50-8	Copper	1.2	B		P
7439-89-6	Iron	427			P
7439-92-1	Lead	10.3			P
7439-95-4	Magnesium	26700			P
7439-96-5	Manganese	2.4	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	3.4	B		P
7440-09-7	Potassium	2080			P
7782-49-2	Selenium	3.1	B		P
7440-22-4	Silver	2.2	U		P
7440-23-5	Sodium	73300			P
7440-28-0	Thallium	1.7	U		F
7440-62-2	Vanadium	5.6	U		P
7440-66-6	Zinc	1.7	U		P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08205

Laboratory: STL BALTIMORE

SDG No.: T08202

Matrix: WATER Client ID: MW2GW0101

Percent Solids: 0.0 Date Received: 07/17/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	351			P
7440-36-0	Antimony	1.0	U		P
7440-38-2	Arsenic	1.7	U		P
7440-39-3	Barium	12.3	U		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.44	B		P
7440-70-2	Calcium	15100			P
7440-47-3	Chromium	7.3	B		P
7440-48-4	Cobalt	7.5	U		P
7440-50-8	Copper	3.2	B		P
7439-89-6	Iron	600			P
7439-92-1	Lead	3.7			P
7439-95-4	Magnesium	5760			P
7439-96-5	Manganese	2.4	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	7.6	B		P
7440-09-7	Potassium	1180			P
7782-49-2	Selenium	2.3	B		P
7440-22-4	Silver	2.2	U		P
7440-23-5	Sodium	10300			P
7440-28-0	Thallium	1.7	U		F
7440-62-2	Vanadium	5.6	U		P
7440-66-6	Zinc	4.6	B		P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08206

Laboratory: STL BALTIMORE

SDG No.: T08202

Matrix: WATER

Client ID: MW2GW0144

Percent Solids: 0.0

Date Received: 07/17/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	39.0	B		P
7440-36-0	Antimony	1.0	U		P
7440-38-2	Arsenic	1.7	U		P
7440-39-3	Barium	12.3	U		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	150	B		P
7440-47-3	Chromium	0.91	B		P
7440-48-4	Cobalt	7.5	U		P
7440-50-8	Copper	0.70	U		P
7439-89-6	Iron	5.5	U		P
7439-92-1	Lead	2.6	B		P
7439-95-4	Magnesium	95.6	U		P
7439-96-5	Manganese	2.4	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.4	U		P
7440-09-7	Potassium	174	U		P
7782-49-2	Selenium	1.8	U		P
7440-22-4	Silver	2.2	U		P
7440-23-5	Sodium	793	B		P
7440-28-0	Thallium	1.7	U		F
7440-62-2	Vanadium	5.6	U		P
7440-66-6	Zinc	1.7	U		P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070006R

Fax message

Date: 11 JAN 00

To: SCOTT CHASE, PhD

Company: CELAB-CHTRN

Fax: 410 962 4972

From: J. ODONNELL

Subject: TOTTEN DATA

Pages:

REVISED PAGES for REPORT #900

SEVERN TRENT SERVICES

Severn Trent Laboratories, Inc.
19 Loveton Circle
Sparks, MD 21152

Tel 410 771 4920
Fax 410 771 4407
www.stl-inc.com

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STL GC/ECD HERBICIDE WATER EXTRACTION SHEET

CLIENT	FF TOTTEN	EXTRACTION CHEMIST	MS	WATER BATH TEMP 60C VERIFIED INIT MS	EPA METHOD # SW 8151A
BATCH #	H007211	CONCENTRATION CHEMIST	MS	EXT START DATE 7 21 00	EXTRACTION METHOD STL-M-8151A-1
SPIKED BY	MS	SURR SOLN # S-9802 (20 ug/mL)		EXT END DATE 7/21/00	CLEANUP METHOD# STL-M-8151A-1
WITNESS	FH	HERB M S SOLN # S-9821 (16 - 1600 ug/mL)		HYDROLYSIS DATE 7/21/00	ANALYSIS METHOD# STL-M-8151A-1
				METHYLATION DATE 7/27/00	EXT SOLV ETHER# E00099
				FINAL CONC DATE 7/27/00	Na2SO4 / NaCl LOT# E00096 / E00102

STL NUMBER	CLIENT ID	FRACTION	MATRIX	INITIAL AMOUNT (1000mL)	SURR VOLUME	M S VOLUME	CLEAN UPS FLORISIL/ACID	CLEAN UPS DESULFER	METHOD FINAL VOL	GPC FINAL VOL	COMMENTS
HB007211	HB007211	HERBICIDES	Water	1000 ML	1.0 mL	N/A	NA	NA	10.0mL	N/A	
HL007211	HL007211	HERBICIDES	Water	1000 ML	1.0 mL	1.0 mL					
0008202	MW4-GW-01-01	HERBICIDES	Water	1010 ML	1.0 mL	N/A					
0008202MS	MW4-GW-01-01	HERBICIDES	Water	1010 ML	1.0 mL	1.0 mL					
0008202MSD	MW4-GW-01-01	HERBICIDES	Water	1010 ML	1.0 mL	1.0 mL					
0008203	MW4-GW-01-22	HERBICIDES	Water	1000 ML	1.0 mL	N/A					
0008205	MW4-GW-01-01	HERBICIDES	Water	1000 ML	1.0 mL						
0008206	MW4-GW-01-44	HERBICIDES	Water	1000 ML	1.0 mL					T-27-00MS	
	MW2...										

Additional Comments:

Were extraction holding times met?	Y
Were the proper spikes used?	Y
Is the final volume correct?	Y
Was an MS/MSD extracted with this batch?	Y
If not, was an LCS duplicate extracted?	NA

Were TCLP/DI WET extraction holding times met?	NA
Was a TMS extracted for each client?	NA
Was the extraction sheet reviewed for ID's/errors?	Y
Have all associated memos/E-mail/NCRs been included?	Y

TOTAL SAMPLES # CHECKED RECEIVED

ECD 25/5

JAN-11-2001 08:45 STL-BALTIMORE 410 771 4407 P.07/07
TOTAL P.07

Quantitation Report (QT Reviewed)

Signal #1 : O:\ORG\SVOA\ECD\SM3\09MAY00\344FABSM.D\ECD1A.CH Vial: 17
Signal #2 : O:\ORG\SVOA\ECD\SM3\09MAY00\344FABSM.D\ECD2B.CH
Acq On : 28 Jul 2000 4:30 am Operator: JA
Sample : 0008205 Inst : SM3
Misc : MW4-GW-0T-01 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: Jul 28 14:07 2000 Quant Results File: M050900V.RES

Quant Method : O:\ORG\SVOA\ECD\METHODS\M050900V.M (Chemstation Integrator
Title : HERBICIDES BY STL-M-8151A-1
Last Update : Thu Jul 27 21:03:05 2000
Response via : Initial Calibration
DataAcq Meth : HERB.M

Volume Inj. : 1.0 uL
Signal #1 Phase : RTX-5 Signal #2 Phase: RTX-35
Signal #1 Info : 0.53 Signal #2 Info : 0.53

	Compound	RT#1	RT#2	Resp#1	Resp#2	ng/uL	ng/uL
	System Monitoring Compounds						
2) S	DCAA	8.61	9.71	3070583	2251753	1.786 m	1.523 m
	Spiked Amount 2.000			Recovery	=	89.30%	76.15%
	Target Compounds						
1)	DALAPON	0.00	0.00	0	0	N.D. d	N.D. d
3)	DICAMBA	0.00	0.00	0	0	N.D. d	N.D. d
4)	MCPP	0.00	0.00	0	0	N.D. d	N.D. d
5)	MCPA	0.00	0.00	0	0	N.D. d	N.D. d
6)	DICHLOROPROP	0.00	0.00	0	0	N.D. d	N.D. d
7)	2,4-D	0.00	0.00	0	0	N.D. d	N.D. d
8)	PCP	0.00	0.00	0	0	N.D. d	N.D. d
9)	2,4,5-TP	0.00	0.00	0	0	N.D. d	N.D. d
10)	2,4,5-T	0.00	0.00	0	0	N.D. d	N.D. d
11)	DINOSEB	0.00	0.00	0	0	N.D. d	N.D. d
12)	2,4-DB	0.00	0.00	0	0	N.D. d	N.D. d
13)	PICLORAM	0.00	0.00	0	0	N.D. d	N.D. d

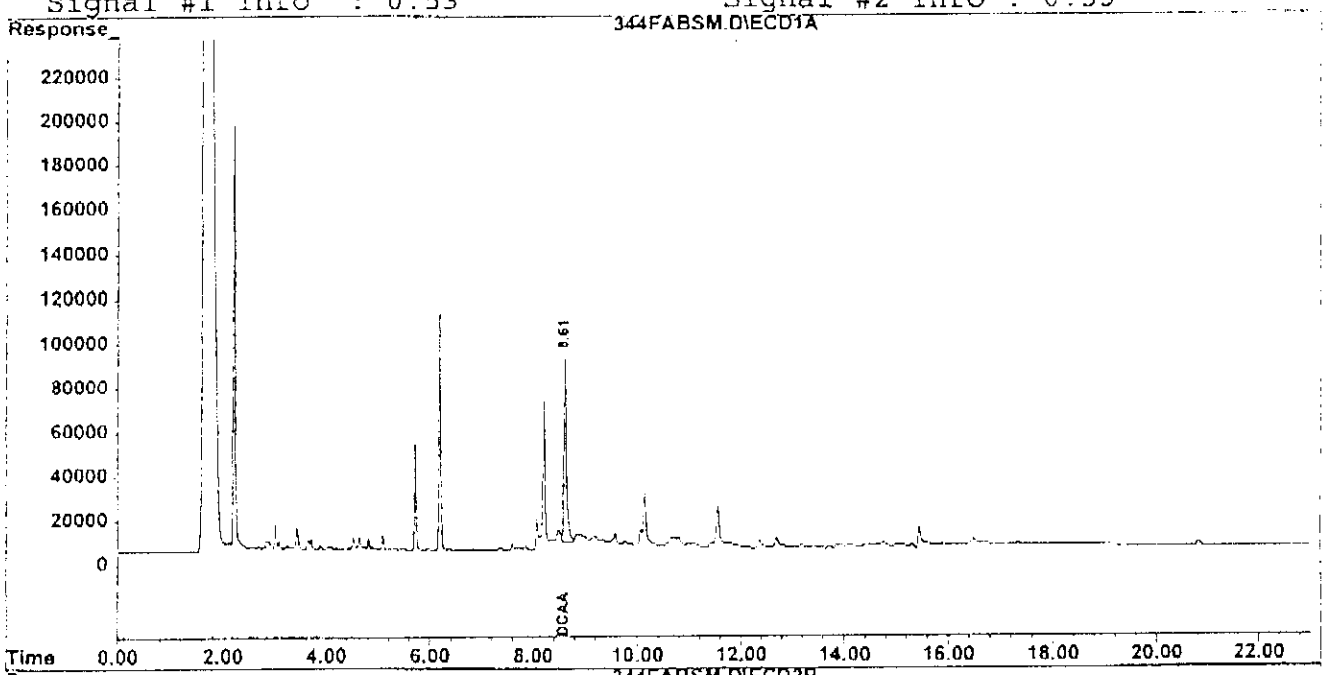
(f)=RT Delta > 1/2 Window (#)=Amounts differ by > 25% (m)=manual 060015R

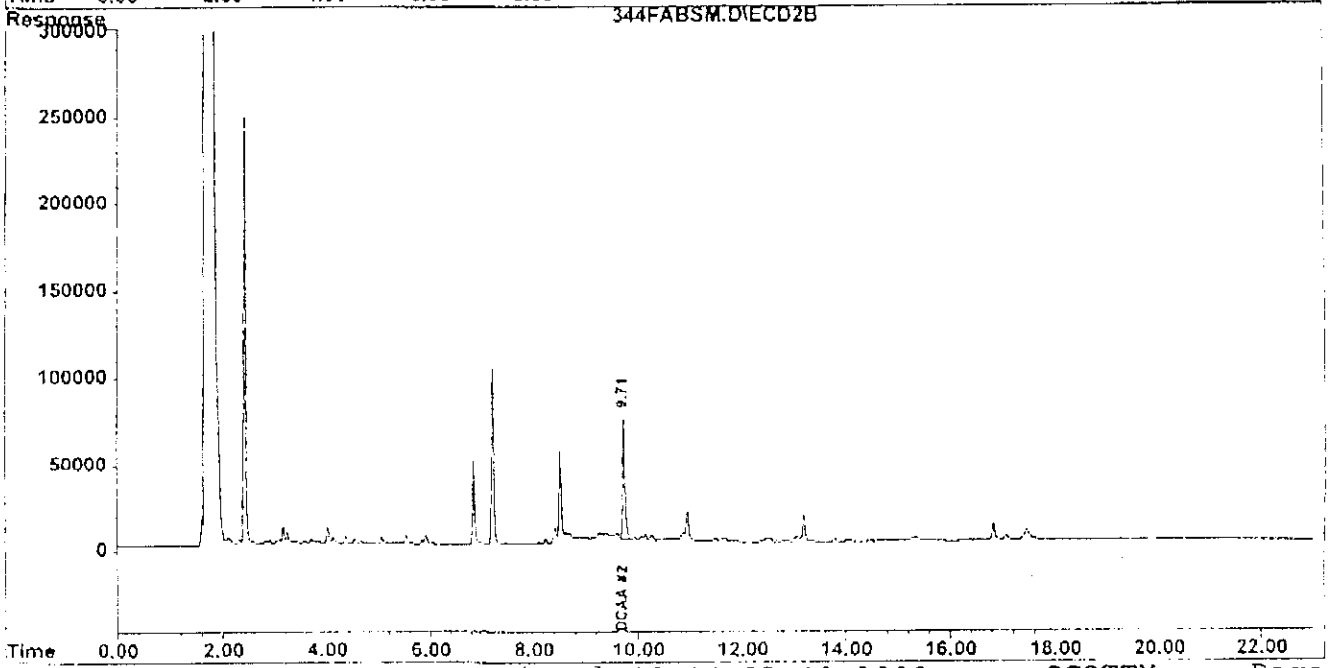
Quantitation Report

Signal #1 : O:\ORG\SVOA\ECD\SM3\09MAY00\344FABSM.D\ECD1A.CH Vial: 17
Signal #2 : O:\ORG\SVOA\ECD\SM3\09MAY00\344FABSM.D\ECD2B.CH
Acq On : 28 Jul 2000 4:30 am Operator: JA
Sample : 0008205 Inst : SM3
Misc : MW2-GW-01-01 Multiplr: 1.00
IntFile Signal #1: events.e IntFile Signal #2: events2.e
Quant Time: Jul 28 14:07 2000 Quant Results File: M050900V.RES

Quant Method : O:\ORG\SVOA\ECD\METHODS\M050900V.M (Chemstation Integrator
Title : HERBICIDES BY STL-M-8151A-1
Last Update : Thu Jul 27 21:03:05 2000
Response via : Multiple Level Calibration
DataAcq Meth : HERB.M

Volume Inj. : 1.0 uL
Signal #1 Phase : RTX-5 Signal #2 Phase: RTX-35
Signal #1 Info : 0.53 Signal #2 Info : 0.53





060014R

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW2
~~MW4~~-GW-01-01

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008205

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 344FABSM.D

% Moisture: decanted:(Y/N) N Date Received: 07/17/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/21/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
87-86-5	PCP	1.0	U

060013R

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08206

Laboratory: STL BALTIMORE

SDG No.: T08202

Matrix: WATER Client ID: MW2GW0144

Percent Solids: 0.0 Date Received: 07/17/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	39.0	B		P
7440-36-0	Antimony	1.0	U		P
7440-38-2	Arsenic	1.7	U		P
7440-39-3	Barium	12.3	U		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	150	B		P
7440-47-3	Chromium	0.91	B		P
7440-48-4	Cobalt	7.5	U		P
7440-50-8	Copper	0.70	U		P
7439-89-6	Iron	5.5	U		P
7439-92-1	Lead	2.6	B		P
7439-95-4	Magnesium	95.6	U		P
7439-96-5	Manganese	2.4	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.4	U		P
7440-09-7	Potassium	174	U		P
7782-49-2	Selenium	1.8	U		P
7440-22-4	Silver	2.2	U		P
7440-23-5	Sodium	793	B		P
7440-28-0	Thallium	1.7	U		F
7440-62-2	Vanadium	5.6	U		P
7440-66-6	Zinc	1.7	U		P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070006R

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T08202	MW4GW0101
T08202D	MW4GW0101D
T08202S	MW4GW0101S
T08203	MW4GW0122
T08205	MW2GW0101
T08206	MW2GW0144

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Wendy C VanMiddlesworth Name: Wendy C VanMiddlesworth

Date: 8/06/00 Title: Chemist III

070002R

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

MW4-GW-01-01

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008205

Sample wt/vol: 1000 (g/ml) ML Lab File ID: 344FABSM.D

% Moisture: decanted:(Y/N) N Date Received: 07/17/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/21/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 07/28/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
87-86-5	PCP	1.0	U

060013

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08206

Laboratory: STL BALTIMORE

SDG No.: T08202

Matrix: WATER Client ID: MW2GW0144

Percent Solids: 0.0 Date Received: 07/17/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	39.0	B		P
7440-36-0	Antimony	1.0	U		P
7440-38-2	Arsenic	1.7	U		P
7440-39-3	Barium	12.3	U		P
7440-41-7	Beryllium	0.10	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	150	B		P
7440-47-3	Chromium	0.91	B		P
7440-48-4	Cobalt	7.5	U		P
7440-50-8	Copper	0.70	U		P
7439-89-6	Iron	5.5	U		P
7439-92-1	Lead	2.6	B		P
7439-95-4	Magnesium	95.6	U		P
7439-96-5	Manganese	2.4	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	2.4	U		P
7440-09-7	Potassium	174	U		P
7782-49-2	Selenium	1.8	U		P
7440-22-4	Silver	2.2	U		P
7440-23-5	Sodium	793	B		P
7440-28-0	Thallium	1.7	U		F
7440-62-2	Vanadium	5.6	U		P
7440-66-6	Zinc	1.7	U		P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

SEVERN TRENT SERVICES

STL Baltimore

LABORATORY DATA REPORT

Prepared for:
CENAB
EN-HT, HTRW Engineering
10 South Howard St. City Crescent Bldg.
Baltimore, MD 21201

Prepared by:

Severn Trent Laboratories, Inc. - Baltimore
19 Loveton Circle
Sparks, MD 46052

Report 000955

September 2000

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1. NARRATIVE

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: **EN-HT, HTRW Engineering**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000955**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **5 September 2000**

This report contains the results of the analysis of 59 soil and three samples collected on 21 and 22 July 2000 in support of the referenced project.

SAMPLE RECEIPT

The samples arrived with custody seals intact by hand at Severn Trent Laboratories - Baltimore on 25 July 2000. Upon receipt, the samples were inspected and compared with the chain-of-custody record. The samples were then logged into the laboratory computer system with assigned laboratory accession numbers and released for analysis.

Client Sample Designation	STL - Baltimore Number
FSS-SS-01-01	0008448
FSS-SS-02-01	0008449
FSS-SS-03-01	0008450
FSS-SS-04-01	0008451
FSS-SS-05-01	0008452
FSS-SS-06-01	0008453
FSS-SS-07-01	0008454
FSS-SS-08-01	0008455
FSS-SS-09-01	0008456
FSS-SS-10-01	0008457
FSS-SS-11-01	0008458
FSS-SS-12-01	0008459
FSS-SS-12-22	0008460
FSS-SS-13-01	0008461
FSS-SS-14-01	0008462
FSS-SS-15-01	0008463
FSS-SS-16-01	0008464
FSS-SS-17-01	0008465
FSS-SS-18-01	0008466
FSS-SS-18-22	0008467
FSS-SS-19-01	0008468
FSS-SS-20-01	0008469
FSS-SS-21-01	0008470
FSS-SS-22-01	0008471
FSS-SS-23-01	0008472
FSS-SS-24-01	0008473
FSS-SS-24-22	0008474
FSS-SS-25-01	0008475

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: **EN-HT, HTRW Engineering**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000955**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **5 September 2000**

FSS-SS-26-01	0008476
FSS-SS-27-01	0008477
FSS-SS-28-01	0008478
FSS-SS-29-01	0008479
FSS-SS-30-01	0008480
FSS-SS-31-01	0008481
FSS-SS-32-01	0008482
FSS-SS-33-01	0008483
FSS-SS-34-01	0008484
FSS-SS-35-01	0008485
FSS-SS-35-22	0008486
FSS-SS-35-44	0008487
FSS-SS-36-01	0008488
FSS-SS-37-01	0008489
FSS-SS-38-01	0008490
FSS-SS-39-01	0008491
FSS-SS-40-01	0008492
FSS-SS-45-01	0008493
FLA-SS-46-01	0008494
FLA-SS-47-01	0008495
FLA-SS-48-01	0008496
FLA-SS-48-22	0008497
FLA-SS-49-01	0008498
FLA-SS-50-01	0008499
FLA-SS-51-01	0008500
FLA-SS-52-01	0008501
624-SS-53-01	0008502
624-SS-54-01	0008503
624-SS-54-44	0008504
624-SS-55-01	0008505
624-SS-56-01	0008506
609-SS-57-01	0008507
609-SS-57-44	0008508
609-SS-58-01	0008509

Following this narrative section are glossaries of data qualifiers (Tables 1 and 2), codes associated with manual integration of chromatographic peaks (Table 3), and the original chain-of-custody records. Analytical results and quality control information are summarized in the appended data

package which has been formatted to be consistent with the deliverable requirements of this project.

ANALYTICAL METHODS

The analytical methods used by the laboratory are referenced by the STL Baltimore Method SOP which is formatted as STL-M-XXXXX-Y, where XXXXX is the reference method and Y is the SOP revision number. For example, analyses performed using EPA SW846 Method 8260B are identified as STL-M-8260B-3 where 3 is the laboratory SOP revision number. General Chemistry methods which are a consolidation of several reference methods, e.g. STL-M-CN for cyanide determinations, also include the identification of the specific reference method used for the analyses.

QUALITY CONTROL

The following sections are ordered as the data appears in this report. They contain observations made during sample analysis, summarize the results of quality control measurements, and address the impact on data usability based upon project Data Quality Objectives. For each fractional analysis the narrative includes:

- Sample chronology: This section summarizes the sample history by fraction including the sample preparation method and date, analytical method, and analysis date. Anything unusual about the samples, digestates, or extracts is identified. Holding time compliance is evaluated in this section.

- Laboratory method performance: All quality control criteria for method performance must be met for all target analytes for data to be reported. These criteria generally apply to instrument tune, calibration, method blanks, and Laboratory Control Samples (LCS). In some instances where method criteria fail, useable data can be obtained and are reported with client approval. The narrative will then include a thorough discussion of the impact on data quality.

- Sample performance: Quality control field samples are analyzed to determine any measurement bias due to the sample matrix based on evaluation of matrix spikes (MS), matrix spike duplicates (MSD), and laboratory duplicates (D). If acceptance criteria are not met, matrix interferences are confirmed either by reanalysis or by inspection of the LCS results to verify that laboratory method performance is in control. Data are reported with appropriate qualifiers or discussion.

SEMIVOLATILES by GC/MS - SOIL (STL0008448 - STL0008452, STL0008459-STL0008486, STL0008488 - STL0008501))

Sample Chronology: Forty-six samples and associated quality control were extracted on 26, 27 and 28 July 2000 following the procedures specified in STL-M-3540C-2. The resultant extracts were

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Client: **EN-HT, HTRW Engineering**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000955**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **5 September 2000**

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analyzed from 02 through 15 August 2000 for the project specified list of analytes following the procedures specified in the STL-M-8270C-2. All holding times were met.

The following samples were re-analyzed at dilutions to bring the extract concentrations of target analytes within the instrument calibration range:

FSS-SS-12-01 (4X)
FSS-SS-12-22 (4X)
FSS-SS-15-01 (2X)
FSS-SS-20-01 (40X)
FSS-SS-29-01 (4X)

Both the undiluted and diluted analyses were included in this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exception:

The method blank (SB007271), associated with the 27 July 2000 extraction, had the recovery for the surrogate, 2-fluorobiphenyl, just below the lower QC limit of 53% at 52%. This recovery is not indicative of a significant negative bias.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

- Ten samples had the recoveries for the surrogate, terphenyl-d14, slightly over the upper laboratory QC limit of 110%. These recoveries should not be indicative of a significant bias for these samples. All surrogate recoveries in the associated method blank and LCS were within QC limits, indicating acceptable method performance.

- The MS, performed on sample FSS-SS-15-01, had the recoveries for control analytes 1,4-dichlorobenzene (50%), n-nitrosodi-n-propylamine (58%) and 2,4-dinitrotuluene (71%) just below the lower laboratory QC limits of 53%, 59% and 75%, respectively.

- The MS and MSD, performed on sample FSS-SS-19-01, had the recoveries for the control analytes, 1,4-dichlorobenzene (24%, 35%) and 1,2,4-trichlorobenzene (41%, 53%) below the lower laboratory QC limits of 53% and 59%, respectively.

- The MS and MSD, performed on sample FLA-SS-52-01, had the recoveries for the control analyte, 1,4-dichlorobenzene (50%, 52%) just below the lower laboratory QC limit of 53% and the recoveries for pyrene (148%, 124%) above the upper QC limit of 123%.

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- Due to matrix influences, most samples had the areas for one or more internal standards below the lower QC limit of 50% of the referenced calibration standard. These low internal standard areas may indicate a bias for any target analytes that are quantitated using them in these samples. All internal standard areas in the method blanks and LCSs were within QC limits, indicating acceptable method performance.

SEMIVOLATILES by GC/MS - WATER (STL0008487)

Sample Chronology: One sample and associated quality control were extracted on 27 July 2000, following the procedures specified in STL-M-3520C-0. The resultant extracts were analyzed on 03 August 2000 for the client specific list of analytes following the procedures specified in the STL-M-8270C-2. All holding times were met.

The batch MS/MSD was performed on another client's sample. All data associated with these QC samples has been included in this report to fulfill reporting requirements. However, recoveries were not evaluated since they do not apply to the samples associated with this report.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample with the following exceptions:

- The blank and LCS associated with this batch had the recoveries for surrogate 2,4,6-tribromophenol(121%, 121%) above the upper QC limit of 114%. Although these recoveries may indicate a slight positive bias, there were no target analytes present in this sample.

Sample Performance: All quality control criteria were met for the reported sample.

CHLORINATED PESTICIDES/PCBs by GC - SOIL (STL0008502; STL0008503; STL0008505 - STL0008507; STL0008509)

Sample Chronology: Six samples and associated quality control were extracted on 28 July 2000 following the procedures specified in STL-M-3540C-2. The resultant extracts were analyzed on 04, 05, 08 and 16 August 2000 for the project list of analytes following the procedures specified in STL-M-8081A/8082-1. All holding times were met.

The batch pesticide and PCB MS/MSDs were performed on other clients' samples. All data associated with these QC samples are included in this report to fulfill reporting requirements, however, recoveries are not evaluated since they do not apply to the samples associated with this report.

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ANALYTICAL NARRATIVE

Client: **EN-HT, HTRW Engineering**
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The following samples required dilutions to bring the concentrations of target analytes within instrument calibration range:

624-SS-53-01: 20x
624-SS-54-01: 20x

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exceptions:

- The method blank (PB007281) had the recoveries for the surrogate TCX slightly below the lower laboratory QC limit of 20% at 14% (RTX-5) and 13% (RTX-35). This appears to be an isolated event, for no samples associated with this extraction batch had low TCX recoveries. Data usability should not be impacted.

- The pesticide LCS (PL007281) had the control analyte Dieldrin slightly above the upper laboratory QC limit of 97% at 109%. This recovery is not really indicative of a significant measurement bias and should not affect data usability.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

- Sample 625-SS-55-01 had the surrogate TCX above the upper laboratory QC limit of 109% on the RTX-35 column only, and samples 625-SS-56-01, 624-SS-54-01, and 624-SS-53-01 had the surrogate DCB above the upper laboratory QC limit of 116% on the RTX-5 column only. These high recoveries are most likely due to co-eluting interferences and may indicate a bias for some analytes for these samples.

CHLORINATED PESTICIDES/PCBs by GC - WATER (STL0008440)

Sample Chronology: One sample and associated quality control were extracted on 28 July 2000 following the procedures specified in STL-M-3520C-0. The resultant extracts were analyzed on 03-04 August 2000 for the project list of analytes following the procedures specified in STL-M-8081A/8082-1. All holding times were met.

The batch pesticide and PCB MS/MSDs were performed on another client's sample. All data associated with these QC samples are included in this report to fulfill reporting requirements. However, recoveries are not evaluated since they do not apply to the samples associated with this report.

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: **EN-HT, HTRW Engineering**
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Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **5 September 2000**

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample with the following exception:

- The method blank (PB007282) had the recovery for the surrogate DCB slightly below the lower QC limit of 30% at 29% on the RTX-35 column analysis only. This recovery is not indicative of a significant measurement bias, and since both surrogates were within QC limits for the sample, data usability should not be impacted.

Sample Performance: All quality control criteria were met for the reported sample.

METALS - SOIL (STL0008448 - STL0008467)

Sample Chronology: Twenty samples were prepared by STL-M-3050B-2/7470A/1A-2 on 10 and 16 August 2000 and analyzed for TAL metals by STL-M-6010B-1/7000S-2/7470A/1A-2 on 10 and 18 - 21 August 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

- The MS/MSD recovery (performed on sample FSS-SS-01-01) for antimony (11.5%, 14.1%), was below the QC limit of 75% indicating a potential for negative bias to the sample data for these elements. The post-digestion spike for antimony (92.1%) was within QC limits. The MS/MSD recoveries for aluminum, iron, and manganese could not be reliably determined because the high native concentrations of these elements were significantly higher than the spike concentration added.

- The percent difference (%D) of aluminum (10.8%), calcium (12.4%), copper (16.5%), and magnesium (14.3%) for the serial dilution test was above the QC limit of 10%. This may indicate a possible matrix interference for these elements.

METALS - SOIL (STL0008468 - STL0008486)

Sample Chronology: Nineteen samples were prepared by STL-M-3050B-2/7470A/1A-2 on 11 and 21 August 2000 and analyzed for TAL metals by STL-M-6010B-1/7000S-2/7470A/1A-2 on 14 - 31 August 2000. All holding times were met.

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Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exceptions:

- The method blank had the target analytes iron (11.8mg/kg) and lead (0.46mg/kg), above the reporting limits (10.0 mg/kg and 0.3 mg/kg, respectively). However, the associated samples were detected at significantly higher concentrations than the method blank. Data usability should not be impacted for these elements.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

- The MS/MSD recoveries (performed on sample FSS-SS-19-01) for antimony (14.4%, 21.4%), manganese (38.6%, 28.6%) and zinc (64.0%), MSD only, were below the QC limit of 75% indicating a potential for negative bias to the sample data for these elements. The MS recovery for zinc (146.5%) was above the QC limit of 125%, indicating a potential for positive bias to the sample data for this element. The post digestion spike was within limits. The MS/MSD recoveries for aluminum and iron, could not be reliably determined because the high native concentrations of these elements were significantly higher than the spike concentration added.

- The percent difference (%D) of magnesium (11.3%) for the serial dilution test was above the QC limit of 10%. This may indicate a possible matrix interference for these elements.

METALS - WATER (STL0008487)

Sample Chronology:One samples was prepared by STL-M-3010A-2/3020A-3/7470A/1A-2 on 09 August 2000 and analyzed for Target Analyte List (TAL) metals by STL-M-6010B-1/7000S-2/7470A/1A-2 on 09 - 11 August 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported sample.

Sample Performance: All quality control criteria were met for the reported sample with the following exception:

- The MS/MSD recoveries (performed on sample FSS-SS-35-44) for copper and zince could not be reliably determined because of the high native concentration of these elements in the sample relative to the amount of spike added to the MS/MSD.

- The relative percent difference (RPD) between the duplicate analyses of copper (200%), zinc

(200%) and lead (184%) were above the QC limit of 20%. This RPD value may indicate a precision deficit for these elements.

METALS - SOIL (STL0008488 - STL0008501)

Sample Chronology: Fourteen samples were prepared by STL-M-3050B-2/7470A/1A-2 on 11 and 21 August 2000 and analyzed for TAL metals by STL-M-6010B-1/7000S-2/7470A/1A-2 on 14 and 24 - 31 August 2000. All holding times were met.

Laboratory Method Performance: All laboratory method performance criteria were met for the reported samples with the following exceptions:

- The method blank had the target analyte iron (33.46 mg/kg) above the reporting limits (10.0 mg/kg). However, the associated samples were detected at significantly higher concentrations than the method blank. Data usability should not be impacted for this element.

Sample Performance: All quality control criteria were met for the reported samples with the following exceptions:

- The MS/MSD recoveries (performed on sample FSS-SS-36-01) for antimony (16.7%, 10.8%) and lead (49.6%, 36.0%) were below the QC limit of 75% indicating a potential for negative bias to the sample data for these elements. The post-digestion spike for antimony (98.6%) and lead (93.5%) was within QC limits. The MSD recovery for manganese (126.7%) was above the QC limit of 125%, indicating a potential for positive bias to the sample data for this element. The post digestion spike for manganese (108.6%) was within QC limits. The MS/MSD recoveries for aluminum and iron, could not be reliably determined because the high native concentrations of these elements were significantly higher than the spike concentration added.

- The percent difference (%D) of copper (13.4%) for the serial dilution test was above the QC limit of 10%. This may indicate a possible matrix interference for this element.

CERTIFICATION OF RESULTS

The Laboratory certifies that the reported results relate only to those samples tested and that this report meets the project requirements for analytical data as stated in the Analytical Task Order (ATO) and the chain-of-custody. In addition, the Laboratory certifies that the data as reported meet the Data Quality Objectives for precision, accuracy, and completeness specified for this project or as stated in STL Baltimore's Quality Assurance program for other than the conditions detailed above.

Severn Trent Laboratories, Inc. - Baltimore
ANALYTICAL NARRATIVE

Client: **EN-HT, HTRW Engineering**
Site: **Fort Totten**
Project number: **70047.67**

STL Baltimore Report: **000955**
Laboratory Project Manager: **Natasha K. Sullivan**
Report Date: **5 September 2000**

Release of the data contained in this report has been authorized by the Laboratory Project Manager as verified by the following signature.

September 5, 2000

Natasha K. Sullivan, Laboratory Project Manager

TABLE 1. LABORATORY ORGANIC ANALYSIS DATA QUALIFIERS [1]

Qualifiers other than those listed below may be required to properly define the results. If used, they are given an alphabetic designation not already specified in this table or in a project/program document, such as a Quality Assurance Project Plan or a contract Statement of Work. Each additional qualifier is fully described in the Analytical Narrative section of the laboratory report.

U Indicates a target compound was analyzed for but not detected. The sample Reporting Limit (RL) is corrected for dilution and, if a soil sample, for percent moisture, if reported on a dry weight basis.

J Indicates an estimated value. This qualifier is used under the following circumstances:

1) when estimating a concentration for tentatively identified compounds (TICs) in GC/MS analyses, where a 1:1 response is assumed,
2) when the mass spectral and retention time data indicate the presence of a compound that meets the volatile and semivolatile GC/MS identification criteria, and the result is less than the RL but greater than the method detection limit (MDL).

B This qualifier is used when the analyte is found in the associated method blank as well as in the sample. It indicates possible/probable blank contamination and warns the data user to take appropriate action. For GC/MS analyses, this qualifier is used for a TIC, as well as, for a positively identified target compound.

E This qualifier identifies compounds whose concentrations exceed the calibration range of the instrument for that specific analysis.

D When applied, this qualifier identifies all compound concentrations reported from a secondary dilution analysis.

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

N Indicates presumptive evidence of a compound. This qualifier is only used for GC/MS TICs, where the identification is based on a mass spectral library search. For generic characterization of a TIC, such as chlorinated hydrocarbon, the N qualifier is not used.

P When applied, this qualifier indicates a reported value from a GC analysis when there is greater than 25% difference for detected concentrations between the two GC columns.

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(1) These Data Qualifiers are added by the laboratory to provide additional information for the reported results. ***They should not be confused with the qualifiers applied to the reported data as a result of a data validation process performed independently of the laboratory reporting procedure.***

TABLE 2. LABORATORY INORGANIC ANALYSIS DATA QUALIFIERS [1]

C *(Concentration) qualifiers:*

B	Reported value is less than the project-specified Reporting Limit (RL), but greater than the method-specified Instrument Detection Limit (IDL) or Method Detection Limit (MDL).
U	Analyte analyzed for but not detected (concentration is less than the method-specified Instrument Detection Limit (IDL) or Method Detection Limit (MDL).

Q *(Quality control) qualifiers:*

E	Reported value is estimated because of presence of interference.
M	Duplicate injection precision not met.
N	Spiked sample recovery is not within control limits.
S	Reported value is determined by the method of standard additions (MSA).
W	Postdigestion spike for furnace Atomic Absorption Spectrophotometric (AAS) AAS analysis is out of control limits (85-115%) and sample absorbance is less than 50% of spike absorbance.
*	Duplicate analyses is not within control limits.
+	Correlation coefficient for MSA is less than 0.995.

M *(Method) qualifiers:*

P	Inductively Coupled Plasma (ICP)
A	Flame AAS
F	Furnace AAS
CV	Cold Vapor AAS
AV	Automated Cold Vapor AAS
AS	Semiautomated Spectrophotometric
C	Manual Spectrophotometric
T	Titrimetric
NR	Analyte is not required to be determined.

(1) These Data Qualifiers are added by the laboratory to provide additional information for the reported results. ***They should not be confused with the qualifiers applied to the reported data as a result of a data validation process performed independently of the laboratory reporting procedure.***

TABLE 3. CODES ASSOCIATED WITH MANUAL INTEGRATION OF CHROMATOGRAPHIC PEAKS

M1 .... Software failed to integrate peak or integrated peak improperly

M2 .... Multiple peaks within window, analyst's discretion used in peak identification.

M3 .... Close eluting or near-coelution of interferences.

M4 .... Adding or removing area due to peak tailing - subject to consistency within the sequence.

M5 .... Adding/removing area due to positive baseline deflection matrix effect.

M6 .... Adding/removing area due to negative baseline deflection matrix effect.

M7 .... Retention time shifts.

M8 .... Skimming vs. dropped baseline.

M9 .... Adding area due to peak splitting .

M10 ... Secondary ions or qualifier ions.

Note: Appropriate Qualifiers are used and specified in the data package; either on the individual quantitation reports or in the Technical Review Checklists.

F:\GROUP\FINALRPT\MASTER\MANINT.MAS

2. CHAIN-OF-CUSTODY

COC REVISED 7/26/00

Company Name:	Project Manager or Contact:
USACE	Scott Chang
Project No.	Phone:
Dept.: Task:	Project Name: Ft Totten
Sample Storage Location: K21/215	ATO Number:
Page 3 of 4	Report #: 000955

Parameters/Method Numbers for Analysis

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	8270 TCL SVOC	TAL Metals 6010/7000	EA Labs Accession Number	Remarks
7-22	1110		X	FSS-SS-36-01	2	2		0008488	LPM: NICS PS-010
	1150		X	FSS-SS-37-01	2	2		0008489	
	1200		X	FSS-SS-38-01	2	2		0008490	
	1210		X	FSS-SS-39-01	2	2		0008491	
	1220		X	FSS-SS-40-01	2	2		0008492	
				FSS-SS-41-01				0008493	L18342
				FSS-SS-42-01				0008494	
				FSS-SS-43-01				0008495	
				FSS-SS-44-01				0008496	
	1230		X	FSS-SS-45-01	2	2		0008497	
	1300		X	FSA-SS-46-01	2	2		0008498	
	1310		X	FSA-SS-47-01	2	2		0008499	
	1320		X	FSA-SS-48-01	2	2		0008500	
	1330		X	FSA-SS-49-01	2	2		0008501	
	1340		X	FSA-SS-49-02	2	2		0008502	
	1350		X	FSA-SS-49-01	2	2		0008503	
	1400		X	FSA-SS-50-01	2	2		0008504	
	1410		X	FSA-SS-51-01	2	2		0008505	
	1420		X	FSA-SS-52-01	2	2			

NEW YORK HOLDING TIMES

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 (4) (5) E

EDD: (Yes)/No EXCEL+GLS

DUE TO CLIENT: 8/15/00

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
JOE Leise	7/23/2000	JOE Leise	7/23/2000		
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time	Airbill Number:	Sample Shipped by: (Circle)
		Cathy Hussey	7/24/00 730		Fed Ex Puro. UPS Hand Carried Other:

Cooler Temp.____C pH: Yes No Comments: Custody Seals Intact Yes No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

COC0001532

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: USACE
Project Manager or Contact: Scott Chang
Phone:
Project No.
Project Name: Ft Totten
Dept.: Task:
Sample Storage Location: K2/215
ATO Number:
Page 2 of 4
Report #: 000955

Report Deliverables: 1 2 3 (4) (D) E
EDD: (Yes)/No Excel 615
DUE TO CLIENT: 8/15/00

Parameters/Method Numbers for Analysis

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	TCL SVOC 8270	TAL Metals 6010/7000	TCL SVOC 8270/H2 Amber	TAL Metals/Mtc HDPE	6010/7000	EA Labs Accession Number	Remarks
7-21	1125		X	FSS-SS-19-01		2	2				0008468	LPM: MCS
	1130			FSS-SS-20-01		2	2				0008469	PS-090
	1140			FSS-SS-21-01		2	2				0008470	
	1150			FSS-SS-22-01		2	2				0008471	
	1200			FSS-SS-23-01		2	2				0008472	
	1210			FSS-SS-24-01		2	2				0008473	
	1210			FSS-SS-24-22		2	2				0008474	
	1220			FSS-SS-25-01		2	2				0008475	
	1230			FSS-SS-26-01		2	2				0008476	L18342
	1240			FSS-SS-27-01		2	2				0008477	
	1250			FSS-SS-28-01		2	2				0008478	
	1300			FSS-SS-29-01		2	2				0008479	
	1310			FSS-SS-30-01		2	2				0008480	
	1320			FSS-SS-31-01		2	2				0008481	
	1330			FSS-SS-32-01		2	2				0008482	
	1340			FSS-SS-33-01		2	2				0008483	
	1350			FSS-SS-34-01		2	2				0008484	208402
7-22	1100			FSS-SS-35-01		2	2				0008485	6 Pest. 1C
	1100			FSS-SS-35-22		2	2				0008486	
	1130	X		FSS-SS-35-44		[illegible]	[illegible]	2	1		0008487	COC0007533

NEW YORK Holding TIMES

Sampled by: (Signature)	Date/Time	Relinquished by: (Signature)	Date/Time	Received by: (Signature)	Date/Time
Joe Lewis	7/23/2000	JOE Lewis	7/23/2000	[signature]	7/24/00
Relinquished by: (Signature)	**Date/Time**	**Received by Laboratory: (Signature)**	**Date/Time**	**Airbill Number:**	
		Cathy Heeshey	7/25/00 730		

Sample Shipped by: (Circle)
Fed Ex. Puro. UPS
(Hand Carried)
Other:

Cooler Temp.____C pH: ☐ Yes ☐ No Comments: Custody Seals Intact ☐ Yes ☐ No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Company Name: USACE	Project Manager or Contact: Scott Chung
Project No.	Phone:
Dept.: Task:	Project Name: FT TOTTEN
Sample Storage Location: K2/215	ATO Number:
Page 1 of 4	Report #: 000955

Report Deliverables: 1 2 3 (4) (D) E
EDD: (Yes)/No EXCEL+GIS
DUE TO CLIENT: 8/15/00

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	TCL/SVOC 8270	TAL Metals (6010/7000)	EA Labs Accession Number	Remarks
7/21	0900		X	FSS-SS-01-0/	2	2		008448	LPM: NICS
	0910			FSS-SS-02-0/	2	2		008449	BS-090
	0920			FSS-SS-03-0/	2	2		008450	
	0930			FSS-SS-04-0/	2	2		008451	
	0940			FSS-SS-05-0/	2	2		008452	
	0950			FSS-SS-06-0/		2		008453	
	0955			FSS-SS-07-0/		2		008454	
	1000			FSS-SS-08-0/		2		008455	
	1010			FSS-SS-09-0/		2		008456	
	1015			FSS-SS-10-0/		2		008457	
	1020			FSS-SS-11-0/		2		008458	L18342
	1025			FSS-SS-12-0/	2	2		008459	
	1035			FSS-SS-12-22	2	2		008460	
	1045			FSS-SS-13-0/	2	2		008461	
	1055			FSS-SS-14-0/	2	2		008462	
	1105			FSS-SS-15-0/	2	2		008463	308-402, 6 Pest, IC
	1115			FSS-SS-16-0/	2	2		008464	
	1115		V	FSS-SS-17-0/	2	2		008465	
V				FSS-SS-18-0/	2	2		008466	
				FSS-SS-18-22	2	2		008467	COC007533

NEW YORK HOLDING TIMES

Sampled by: (Signature) JOE Leise	Date/Time 7/23/2000	Relinquished by: (Signature) JOE Leise	Date/Time 7/23 2000	Received by: (Signature)	Date/Time 7/28/00
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time 7/25/00 1730	Airbill Number:	Sample Shipped by: (Circle) Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp. 5 C pH: Yes No Comments: Custody Seals Intact Yes No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

Company Name: USACE	Project Manager or Contact: Scott Chambers
Project No.	Phone:
Dept.: Task:	Project Name: Ft. Totten
Sample Storage Location: K2/215	ATO Number:
Page 4 of 4	Report #: 000955

Parameters/Method Numbers for Analysis

Chain of Custody Record

EA Laboratories
19 Loveton Circle
Sparks, MD 21152
Telephone: (410) 771-4920
Fax: (410) 771-4407

Report Deliverables: 1 2 3 (4) (D) E

EDD: (Yes)/No Excel + GIS

DUE TO CLIENT: 8/15/00

Date	Time	Water	Soil	Sample Identification 19 Characters	No. of Containers	PESTICIDES	PCB TCL 8081/8082	EA Labs Accession Number	Remarks
7-22	1440		X	624-SS-SB-01	2	X		0008502	LPM: NKS
	1450		X	624-SS-SW-01	2	X		0008503	PS-090
	1500	X		624-SW-SW-MS	2	X		0008504	Ambers
	1515		X	624-SS-SB-01	2		X	0008505	
	1525		X	625-SS-SW-01	2		X	0008506	
	1600		X	609-SS-SW-01	2		X	0008507	
	1615	X		609-SW-SW-MS	2		X	0008508	
	1630		X	609-SS-SB-01	2		X	0008509	Ambers

L18342

208.402
6 Part - 1C

COC0007533

NEW YORK Holding TIMES.

Sampled by: (Signature) Joe Leiva	Date/Time 7/23 2:00	Relinquished by: (Signature) Joe Leiva	Date/Time 7/23 2:00	Received by: (Signature)	Date/Time 7/24/00
Relinquished by: (Signature)	Date/Time	Received by Laboratory: (Signature)	Date/Time 7/30	Airbill Number:	Sample Shipped by: (Circle) Fed Ex. Puro. UPS Hand Carried Other:

Cooler Temp. ____ C pH: Yes No Comments: Custody Seals Intact Yes No

NOTE: Please indicate method number for analyses requested. This will help clarify any questions with laboratory techniques.

WHITE—EA Laboratories YELLOW—EA Laboratories PINK—Project Manager *Shaded Areas for Lab Use Only*

Severn Trent Laboratories
STL Baltimore

19 Loveton Circle
Sparks, Maryland 21152
(410) 771-4920

Committed to *Your* Success

COOLER RECEIPT CHECKLIST

Report: 000955

Project: Ft. Totten
Received: 25-JUL-00 7:30
COC: COC0007533
Samples: 0008448-0008509

A. COOLER INSPECTION:

Date cooler was opened: 7/25/00 Date — Cathy Hensley Custodian Signature

1.	Did cooler come with a shipping slip, air bill, etc?	YES	NO	N/A	NCR# _____
1a.	Circle courier: Federal Express UPS *Air bill Number from Chain-of-Custody* _____				
1b.	Circle, if applicable: ~~Handcarried~~ Other				
2.	Custody seals were present on outside of cooler?	(YES)	NO	N/A	NCR# _____
3.	Custody seals were unbroken at the time of arrival?	(YES)	NO	N/A	NCR# _____
4.	Chain-of-Custody (COC)records were present and legible?	(YES)	NO	N/A	NCR# _____
5.	Were the COC records completed?	(YES)	NO	N/A	NCR# _____
6.	Was cooler temperature 4C ± 2C?	(YES)	NO	N/A	NCR# _____
		5.0			

B. SAMPLE INSPECTION

9.	All bottles arrived unbroken?	(YES)	NO	N/A	NCR# _____
10.	All bottles labels were legible and complete?	(YES)	NO	N/A	NCR# _____
11.	Containers were correct for the analysis listed on the COC?	(YES)	NO	N/A	NCR# _____
12.	Were preservatives checked (except VOA vials)?	(YES)	NO	N/A	NCR# _____
13.	Were bubbles absent in Volatiles samples?	YES	NO	(N/A)	NCR# _____

Special Notes:

_____

_____

_____ 7/25/00
Sample Management Officer Date

M:\GROUP\QA\FORMS\COOLER.WPD

September 29, 1999/mmu

02 0005

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FSS-SS-01-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008448

Sample wt/vol: 30.7 (g/ml) G Lab File ID: SA1D2974.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 15 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitrosodi-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	380	U
606-20-2	2,6-Dinitrotoluene	380	U
208-96-8	Acenaphthylene	380	U
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-01-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008448

Sample wt/vol: 30.7 (g/ml) G Lab File ID: SA1D2974.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 15 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	380	U
101-55-3	4-Bromophenyl phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	110	J
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butyl phthalate	380	U
206-44-0	Fluoranthene	250	J
129-00-0	Pyrene	270	J
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	130	J
117-81-7	bis(2-Ethylhexyl)phthalate	87	J
218-01-9	Chrysene	140	J
117-84-0	Di-n-octyl phthalate	380	U
205-99-2	Benzo(b)fluoranthene	270	J
207-08-9	Benzo(k)fluoranthene	89	J
50-32-8	Benzo(a)pyrene	190	J
193-39-5	Indeno(1,2,3-cd)pyrene	120	J
53-70-3	Dibenz(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	120	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-02-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008449

Sample wt/vol: 30 (g/ml) G Lab File ID: SA1D2975.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 9 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitrosodi-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	370	U
606-20-2	2,6-Dinitrotoluene	370	U
208-96-8	Acenaphthylene	46	J
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-02-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008449

Sample wt/vol: 30 (g/ml) G Lab File ID: SA1D2975.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 9 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine(1)	370	U
101-55-3	4-Bromophenyl phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	210	J
120-12-7	Anthracene	370	U
86-74-8	Carbazole	370	U
84-74-2	Di-n-butyl phthalate	370	U
206-44-0	Fluoranthene	480	
129-00-0	Pyrene	500	
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	220	J
117-81-7	bis(2-Ethylhexyl)phthalate	85	J
218-01-9	Chrysene	290	J
117-84-0	Di-n-octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	460	
207-08-9	Benzo(k)fluoranthene	180	J
50-32-8	Benzo(a)pyrene	310	J
193-39-5	Indeno(1,2,3-cd)pyrene	200	J
53-70-3	Dibenz(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	180	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-03-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008450

Sample wt/vol: 29.7 (g/ml) G Lab File ID: SA1D2976.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 14 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitrosodi-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	390	U
606-20-2	2,6-Dinitrotoluene	390	U
208-96-8	Acenaphthylene	96	J
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-03-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008450

Sample wt/vol: 29.7 (g/ml) G Lab File ID: SA1D2976.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 14 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine(1)	390	U
101-55-3	4-Bromophenyl phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	570	
120-12-7	Anthracene	90	J
86-74-8	Carbazole	65	J
84-74-2	Di-n-butyl phthalate	390	U
206-44-0	Fluoranthene	1100	
129-00-0	Pyrene	1300	
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	560	
117-81-7	bis(2-Ethylhexyl)phthalate	170	J
218-01-9	Chrysene	670	
117-84-0	Di-n-octyl phthalate	390	U
205-99-2	Benzo(b)fluoranthene	1100	
207-08-9	Benzo(k)fluoranthene	360	J
50-32-8	Benzo(a)pyrene	700	
193-39-5	Indeno(1,2,3-cd)pyrene	400	
53-70-3	Dibenz(a,h)anthracene	41	J
191-24-2	Benzo(g,h,i)perylene	390	

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FSS-SS-04-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008451

Sample wt/vol: 29.6 (g/ml) G Lab File ID: SA1D2977.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 11 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitrosodi-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	380	U
606-20-2	2,6-Dinitrotoluene	380	U
208-96-8	Acenaphthylene	380	U
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-04-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008451

Sample wt/vol: 29.6 (g/ml) G Lab File ID: SA1D2977.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 11 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	380	U
101-55-3	4-Bromophenyl phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	280	J
120-12-7	Anthracene	42	J
86-74-8	Carbazole	380	U
84-74-2	Di-n-butyl phthalate	380	U
206-44-0	Fluoranthene	440	
129-00-0	Pyrene	480	
85-68-7	Butylbenzylphthalate	380	U
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	200	J
117-81-7	bis(2-Ethylhexyl)phthalate	110	J
218-01-9	Chrysene	230	J
117-84-0	Di-n-octyl phthalate	380	U
205-99-2	Benzo(b)fluoranthene	380	
207-08-9	Benzo(k)fluoranthene	130	J
50-32-8	Benzo(a)pyrene	250	J
193-39-5	Indeno(1,2,3-cd)pyrene	150	J
53-70-3	Dibenz(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	150	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-05-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008452

Sample wt/vol: 30.5 (g/ml) G Lab File ID: SA1D2978.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 16 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitrosodi-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	52	J
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	390	U
606-20-2	2,6-Dinitrotoluene	390	U
208-96-8	Acenaphthylene	320	J
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-05-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008452

Sample wt/vol: 30.5 (g/ml) G Lab File ID: SA1D2978.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 16 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine(1)	390	U
101-55-3	4-Bromophenyl phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	550	
120-12-7	Anthracene	130	J
86-74-8	Carbazole	71	J
84-74-2	Di-n-butyl phthalate	50	J
206-44-0	Fluoranthene	1400	
129-00-0	Pyrene	1800	
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	970	
117-81-7	bis(2-Ethylhexyl)phthalate	92	J
218-01-9	Chrysene	1100	
117-84-0	Di-n-octyl phthalate	390	U
205-99-2	Benzo(b)fluoranthene	1800	
207-08-9	Benzo(k)fluoranthene	630	
50-32-8	Benzo(a)pyrene	1300	
193-39-5	Indeno(1,2,3-cd)pyrene	780	
53-70-3	Dibenz(a,h)anthracene	63	J
191-24-2	Benzo(g,h,i)perylene	660	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-12-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008459

Sample wt/vol: 31.1 (g/ml) G Lab File ID: SA1D2979.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 14 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitrosodi-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	290	J
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	320	J
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	370	U
606-20-2	2,6-Dinitrotoluene	370	U
208-96-8	Acenaphthylene	1500	
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	38	J
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	110	J
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-12-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008459

Sample wt/vol: 31.1 (g/ml) G Lab File ID: SA1D2979.D

Level: (low/med) LOW Date Received: 07/28/00

% Moisture: 14 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl phenylether	370	U
86-73-7	Fluorene	92	J
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	370	U
101-55-3	4-Bromophenyl phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	1300	
120-12-7	Anthracene	390	
86-74-8	Carbazole	160	J
84-74-2	Di-n-butyl phthalate	370	U
206-44-0	Fluoranthene	4700	E
129-00-0	Pyrene	8000	E
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	4100	
117-81-7	bis(2-Ethylhexyl)phthalate	180	J
218-01-9	Chrysene	4500	E
117-84-0	Di-n-octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	8700	E
207-08-9	Benzo(k)fluoranthene	2700	
50-32-8	Benzo(a)pyrene	6400	E
193-39-5	Indeno(1,2,3-cd)pyrene	4600	E
53-70-3	Dibenz(a,h)anthracene	1000	
191-24-2	Benzo(g,h,i)perylene	4500	E

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-12-01DL

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008459DL

Sample wt/vol: 31.1 (g/ml) G Lab File ID: SA1D3038.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 14 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/09/00

Injection Volume: 1.0 (uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1500	U
111-44-4	bis(2-Chloroethyl)ether	1500	U
95-57-8	2-Chlorophenol	1500	U
541-73-1	1,3-Dichlorobenzene	1500	U
106-46-7	1,4-Dichlorobenzene	1500	U
95-50-1	1,2-Dichlorobenzene	1500	U
95-48-7	2-Methylphenol	1500	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1500	U
106-44-5	4-Methylphenol	1500	U
621-64-7	N-Nitrosodi-n-propylamine	1500	U
67-72-1	Hexachloroethane	1500	U
98-95-3	Nitrobenzene	1500	U
78-59-1	Isophorone	1500	U
88-75-5	2-Nitrophenol	1500	U
105-67-9	2,4-Dimethylphenol	1500	U
111-91-1	bis(2-Chloroethoxy)methane	1500	U
120-83-2	2,4-Dichlorophenol	1500	U
120-82-1	1,2,4-Trichlorobenzene	1500	U
91-20-3	Naphthalene	270	JD
106-47-8	4-Chloroaniline	1500	U
87-68-3	Hexachlorobutadiene	1500	U
59-50-7	4-Chloro-3-methylphenol	1500	U
91-57-6	2-Methylnaphthalene	330	JD
77-47-4	Hexachlorocyclopentadiene	1500	U
88-06-2	2,4,6-Trichlorophenol	1500	U
95-95-4	2,4,5-Trichlorophenol	7500	U
91-58-7	2-Chloronaphthalene	1500	U
88-74-4	2-Nitroaniline	7500	U
131-11-3	Dimethylphthalate	1500	U
606-20-2	2,6-Dinitrotoluene	1500	U
208-96-8	Acenaphthylene	1500	D
99-09-2	3-Nitroaniline	7500	U
83-32-9	Acenaphthene	1500	U
51-28-5	2,4-Dinitrophenol	7500	U
100-02-7	4-Nitrophenol	7500	U
132-64-9	Dibenzofuran	1500	U
121-14-2	2,4-Dinitrotoluene	1500	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-12-01DL

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008459DL

Sample wt/vol: 31.1 (g/ml) G Lab File ID: SA1D3038.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 14 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/09/00

Injection Volume: 1.0 (uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	1500	U
7005-72-3	4-Chlorophenyl phenylether	1500	U
86-73-7	Fluorene	1500	U
100-01-6	4-Nitroaniline	7500	U
534-52-1	4,6-Dinitro-2-methylphenol	7500	U
86-30-6	N-Nitrosodiphenylamine(1)	1500	U
101-55-3	4-Bromophenyl phenylether	1500	U
118-74-1	Hexachlorobenzene	1500	U
87-86-5	Pentachlorophenol	7500	U
85-01-8	Phenanthrene	1400	JD
120-12-7	Anthracene	360	JD
86-74-8	Carbazole	160	JD
84-74-2	Di-n-butyl phthalate	1500	U
206-44-0	Fluoranthene	6400	D
129-00-0	Pyrene	7700	D
85-68-7	Butylbenzylphthalate	1500	U
91-94-1	3,3'-Dichlorobenzidine	1500	U
56-55-3	Benzo(a)anthracene	3900	D
117-81-7	bis(2-Ethylhexyl)phthalate	1500	U
218-01-9	Chrysene	4600	D
117-84-0	Di-n-octyl phthalate	1500	U
205-99-2	Benzo(b)fluoranthene	8800	D
207-08-9	Benzo(k)fluoranthene	3100	D
50-32-8	Benzo(a)pyrene	6300	D
193-39-5	Indeno(1,2,3-cd)pyrene	3500	D
53-70-3	Dibenz(a,h)anthracene	740	JD
191-24-2	Benzo(g,h,i)perylene	3200	D

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-12-22

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008460

Sample wt/vol: 29.5 (g/ml) G Lab File ID: SA1D2980.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 15 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitrosodi-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	320	J
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	370	J
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	400	U
606-20-2	2,6-Dinitrotoluene	400	U
208-96-8	Acenaphthylene	1600	
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	110	J
121-14-2	2,4-Dinitrotoluene	400	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-12-22

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008460

Sample wt/vol: 29.5 (g/ml) G Lab File ID: SA1D2980.D

Level: (low/med) LOW Date Received: 07/28/00

% Moisture: 15 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl phenylether	400	U
86-73-7	Fluorene	97	J
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine(1)	400	U
101-55-3	4-Bromophenyl phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	1200	
120-12-7	Anthracene	480	
86-74-8	Carbazole	130	J
84-74-2	Di-n-butyl phthalate	400	U
206-44-0	Fluoranthene	4800	E
129-00-0	Pyrene	8800	E
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	4600	
117-81-7	bis(2-Ethylhexyl)phthalate	160	J
218-01-9	Chrysene	4900	E
117-84-0	Di-n-octyl phthalate	400	U
205-99-2	Benzo(b)fluoranthene	9000	E
207-08-9	Benzo(k)fluoranthene	2700	
50-32-8	Benzo(a)pyrene	6600	E
193-39-5	Indeno(1,2,3-cd)pyrene	5000	E
53-70-3	Dibenz(a,h)anthracene	1200	
191-24-2	Benzo(g,h,i)perylene	4900	E

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-12-22DL

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008460DL

Sample wt/vol: 29.5 (g/ml) G Lab File ID: SA1D3039.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 15 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/09/00

Injection Volume: 1.0 (uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	1600	U
111-44-4	bis(2-Chloroethyl)ether	1600	U
95-57-8	2-Chlorophenol	1600	U
541-73-1	1,3-Dichlorobenzene	1600	U
106-46-7	1,4-Dichlorobenzene	1600	U
95-50-1	1,2-Dichlorobenzene	1600	U
95-48-7	2-Methylphenol	1600	U
108-60-1	2,2'-oxybis(1-Chloropropane)	1600	U
106-44-5	4-Methylphenol	1600	U
621-64-7	N-Nitrosodi-n-propylamine	1600	U
67-72-1	Hexachloroethane	1600	U
98-95-3	Nitrobenzene	1600	U
78-59-1	Isophorone	1600	U
88-75-5	2-Nitrophenol	1600	U
105-67-9	2,4-Dimethylphenol	1600	U
111-91-1	bis(2-Chloroethoxy)methane	1600	U
120-83-2	2,4-Dichlorophenol	1600	U
120-82-1	1,2,4-Trichlorobenzene	1600	U
91-20-3	Naphthalene	340	JD
106-47-8	4-Chloroaniline	1600	U
87-68-3	Hexachlorobutadiene	1600	U
59-50-7	4-Chloro-3-methylphenol	1600	U
91-57-6	2-Methylnaphthalene	370	JD
77-47-4	Hexachlorocyclopentadiene	1600	U
88-06-2	2,4,6-Trichlorophenol	1600	U
95-95-4	2,4,5-Trichlorophenol	8000	U
91-58-7	2-Chloronaphthalene	1600	U
88-74-4	2-Nitroaniline	8000	U
131-11-3	Dimethylphthalate	1600	U
606-20-2	2,6-Dinitrotoluene	1600	U
208-96-8	Acenaphthylene	1700	D
99-09-2	3-Nitroaniline	8000	U
83-32-9	Acenaphthene	1600	U
51-28-5	2,4-Dinitrophenol	8000	U
100-02-7	4-Nitrophenol	8000	U
132-64-9	Dibenzofuran	1600	U
121-14-2	2,4-Dinitrotoluene	1600	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-12-22DL

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008460DL

Sample wt/vol: 29.5 (g/ml) G Lab File ID: SA1D3039.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 15 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/09/00

Injection Volume: 1.0 (uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	1600	U
7005-72-3	4-Chlorophenyl phenylether	1600	U
86-73-7	Fluorene	1600	U
100-01-6	4-Nitroaniline	8000	U
534-52-1	4,6-Dinitro-2-methylphenol	8000	U
86-30-6	N-Nitrosodiphenylamine(1)	1600	U
101-55-3	4-Bromophenyl phenylether	1600	U
118-74-1	Hexachlorobenzene	1600	U
87-86-5	Pentachlorophenol	8000	U
85-01-8	Phenanthrene	1300	JD
120-12-7	Anthracene	470	JD
86-74-8	Carbazole	1600	U
84-74-2	Di-n-butyl phthalate	1600	U
206-44-0	Fluoranthene	6800	D
129-00-0	Pyrene	8500	D
85-68-7	Butylbenzylphthalate	1600	U
91-94-1	3,3'-Dichlorobenzidine	1600	U
56-55-3	Benzo(a)anthracene	5000	D
117-81-7	bis(2-Ethylhexyl)phthalate	1600	U
218-01-9	Chrysene	4900	D
117-84-0	Di-n-octyl phthalate	1600	U
205-99-2	Benzo(b)fluoranthene	9900	D
207-08-9	Benzo(k)fluoranthene	3500	D
50-32-8	Benzo(a)pyrene	7200	D
193-39-5	Indeno(1,2,3-cd)pyrene	4100	D
53-70-3	Dibenz(a,h)anthracene	860	JD
191-24-2	Benzo(g,h,i)perylene	3700	D

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-13-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008461

Sample wt/vol: 30.3 (g/ml) G Lab File ID: SA1D2981.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 13 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitrosodi-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	150	J
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	160	J
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	380	U
606-20-2	2,6-Dinitrotoluene	380	U
208-96-8	Acenaphthylene	400	
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	54	J
121-14-2	2,4-Dinitrotoluene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-13-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008461

Sample wt/vol: 30.3 (g/ml) G Lab File ID: SA1D2981.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 13 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl phenylether	380	U
86-73-7	Fluorene	38	J
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	380	U
101-55-3	4-Bromophenyl phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	490	
120-12-7	Anthracene	130	J
86-74-8	Carbazole	77	J
84-74-2	Di-n-butyl phthalate	44	J
206-44-0	Fluoranthene	1500	
129-00-0	Pyrene	2300	
85-68-7	Butylbenzylphthalate	38	J
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	890	
117-81-7	bis(2-Ethylhexyl)phthalate	190	J
218-01-9	Chrysene	1200	
117-84-0	Di-n-octyl phthalate	380	U
205-99-2	Benzo(b)fluoranthene	2300	
207-08-9	Benzo(k)fluoranthene	870	
50-32-8	Benzo(a)pyrene	1500	
193-39-5	Indeno(1,2,3-cd)pyrene	1200	
53-70-3	Dibenz(a,h)anthracene	83	J
191-24-2	Benzo(g,h,i)perylene	1200	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-14-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008462

Sample wt/vol: 29.7 (g/ml) G Lab File ID: SA1D2982.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 16 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitrosodi-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	130	J
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	130	J
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	400	U
606-20-2	2,6-Dinitrotoluene	400	U
208-96-8	Acenaphthylene	490	
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	47	J
121-14-2	2,4-Dinitrotoluene	400	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-14-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008462

Sample wt/vol: 29.7 (g/ml) G Lab File ID: SA1D2982.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 16 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine(1)	400	U
101-55-3	4-Bromophenyl phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	400	
120-12-7	Anthracene	130	J
86-74-8	Carbazole	56	J
84-74-2	Di-n-butyl phthalate	400	U
206-44-0	Fluoranthene	1400	
129-00-0	Pyrene	2500	
85-68-7	Butylbenzylphthalate	56	J
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	1200	
117-81-7	bis(2-Ethylhexyl)phthalate	140	J
218-01-9	Chrysene	1400	
117-84-0	Di-n-octyl phthalate	400	U
205-99-2	Benzo(b)fluoranthene	2800	
207-08-9	Benzo(k)fluoranthene	1100	
50-32-8	Benzo(a)pyrene	1900	
193-39-5	Indeno(1,2,3-cd)pyrene	1600	
53-70-3	Dibenz(a,h)anthracene	300	J
191-24-2	Benzo(g,h,i)perylene	1500	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-15-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008463

Sample wt/vol: 30.3 (g/ml) G Lab File ID: SA1D2987.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 12 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/05/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitrosodi-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	190	J
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	140	J
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	380	U
606-20-2	2,6-Dinitrotoluene	380	U
208-96-8	Acenaphthylene	1200	
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	74	J
121-14-2	2,4-Dinitrotoluene	380	U

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SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-15-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008463

Sample wt/vol: 30.3 (g/ml) G Lab File ID: SA1D2987.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 12 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/05/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl phenylether	380	U
86-73-7	Fluorene	68	J
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	380	U
101-55-3	4-Bromophenyl phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	820	
120-12-7	Anthracene	350	J
86-74-8	Carbazole	110	J
84-74-2	Di-n-butyl phthalate	55	J
206-44-0	Fluoranthene	3600	
129-00-0	Pyrene	6900	E
85-68-7	Butylbenzylphthalate	68	J
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	3500	
117-81-7	bis(2-Ethylhexyl)phthalate	180	J
218-01-9	Chrysene	3700	
117-84-0	Di-n-octyl phthalate	380	U
205-99-2	Benzo(b)fluoranthene	6600	E
207-08-9	Benzo(k)fluoranthene	2400	
50-32-8	Benzo(a)pyrene	5100	E
193-39-5	Indeno(1,2,3-cd)pyrene	4100	
53-70-3	Dibenz(a,h)anthracene	940	
191-24-2	Benzo(g,h,i)perylene	4100	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-15-01DL

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008463DL

Sample wt/vol: 30.3 (g/ml) G Lab File ID: SA1D3040.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 12 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/09/00

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	750	U
111-44-4	bis(2-Chloroethyl)ether	750	U
95-57-8	2-Chlorophenol	750	U
541-73-1	1,3-Dichlorobenzene	750	U
106-46-7	1,4-Dichlorobenzene	750	U
95-50-1	1,2-Dichlorobenzene	750	U
95-48-7	2-Methylphenol	750	U
108-60-1	2,2'-oxybis(1-Chloropropane)	750	U
106-44-5	4-Methylphenol	750	U
621-64-7	N-Nitrosodi-n-propylamine	750	U
67-72-1	Hexachloroethane	750	U
98-95-3	Nitrobenzene	750	U
78-59-1	Isophorone	750	U
88-75-5	2-Nitrophenol	750	U
105-67-9	2,4-Dimethylphenol	750	U
111-91-1	bis(2-Chloroethoxy)methane	750	U
120-83-2	2,4-Dichlorophenol	750	U
120-82-1	1,2,4-Trichlorobenzene	750	U
91-20-3	Naphthalene	200	JD
106-47-8	4-Chloroaniline	750	U
87-68-3	Hexachlorobutadiene	750	U
59-50-7	4-Chloro-3-methylphenol	750	U
91-57-6	2-Methylnaphthalene	160	JD
77-47-4	Hexachlorocyclopentadiene	750	U
88-06-2	2,4,6-Trichlorophenol	750	U
95-95-4	2,4,5-Trichlorophenol	3800	U
91-58-7	2-Chloronaphthalene	750	U
88-74-4	2-Nitroaniline	3800	U
131-11-3	Dimethylphthalate	750	U
606-20-2	2,6-Dinitrotoluene	750	U
208-96-8	Acenaphthylene	1300	D
99-09-2	3-Nitroaniline	3800	U
83-32-9	Acenaphthene	750	U
51-28-5	2,4-Dinitrophenol	3800	U
100-02-7	4-Nitrophenol	3800	U
132-64-9	Dibenzofuran	89	JD
121-14-2	2,4-Dinitrotoluene	750	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-15-01DL

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008463DL

Sample wt/vol: 30.3 (g/ml) G Lab File ID: SA1D3040.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 12 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/09/00

Injection Volume: 1.0 (uL) Dilution Factor: 2.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	750	U
7005-72-3	4-Chlorophenyl phenylether	750	U
86-73-7	Fluorene	78	JD
100-01-6	4-Nitroaniline	3800	U
534-52-1	4,6-Dinitro-2-methylphenol	3800	U
86-30-6	N-Nitrosodiphenylamine(1)	750	U
101-55-3	4-Bromophenyl phenylether	750	U
118-74-1	Hexachlorobenzene	750	U
87-86-5	Pentachlorophenol	3800	U
85-01-8	Phenanthrene	930	D
120-12-7	Anthracene	310	JD
86-74-8	Carbazole	120	JD
84-74-2	Di-n-butyl phthalate	750	U
206-44-0	Fluoranthene	4800	D
129-00-0	Pyrene	7600	D
85-68-7	Butylbenzylphthalate	750	U
91-94-1	3,3'-Dichlorobenzidine	750	U
56-55-3	Benzo(a)anthracene	3700	D
117-81-7	bis(2-Ethylhexyl)phthalate	170	JD
218-01-9	Chrysene	3900	D
117-84-0	Di-n-octyl phthalate	750	U
205-99-2	Benzo(b)fluoranthene	7900	D
207-08-9	Benzo(k)fluoranthene	2700	D
50-32-8	Benzo(a)pyrene	5600	D
193-39-5	Indeno(1,2,3-cd)pyrene	3800	D
53-70-3	Dibenz(a,h)anthracene	860	D
191-24-2	Benzo(g,h,i)perylene	3700	D

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-16-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008464

Sample wt/vol: 31.3 (g/ml) G Lab File ID: SA1D2983.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 13 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitrosodi-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	61	J
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	77	J
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	370	U
606-20-2	2,6-Dinitrotoluene	370	U
208-96-8	Acenaphthylene	120	J
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-16-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008464

Sample wt/vol: 31.3 (g/ml) G Lab File ID: SA1D2983.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 13 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine(1)	370	U
101-55-3	4-Bromophenyl phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	170	J
120-12-7	Anthracene	40	J
86-74-8	Carbazole	370	U
84-74-2	Di-n-butyl phthalate	370	U
206-44-0	Fluoranthene	460	
129-00-0	Pyrene	680	
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	300	J
117-81-7	bis(2-Ethylhexyl)phthalate	120	J
218-01-9	Chrysene	380	
117-84-0	Di-n-octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	690	
207-08-9	Benzo(k)fluoranthene	240	J
50-32-8	Benzo(a)pyrene	460	
193-39-5	Indeno(1,2,3-cd)pyrene	370	J
53-70-3	Dibenz(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	360	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-17-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008465

Sample wt/vol: 30.5 (g/ml) G Lab File ID: SA1D2984.D

Level: (low/med) LOW Date Received: 07/28/00

% Moisture: 15 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitrosodi-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	140	J
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	330	J
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	390	U
606-20-2	2,6-Dinitrotoluene	390	U
208-96-8	Acenaphthylene	49	J
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	100	J
121-14-2	2,4-Dinitrotoluene	390	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-17-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008465

Sample wt/vol: 30.5 (g/ml) G Lab File ID: SA1D2984.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 15 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl phenylether	390	U
86-73-7	Fluorene	41	J
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	390	U
101-55-3	4-Bromophenyl phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	440	
120-12-7	Anthracene	390	U
86-74-8	Carbazole	390	U
84-74-2	Di-n-butyl phthalate	390	U
206-44-0	Fluoranthene	310	J
129-00-0	Pyrene	460	
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	200	J
117-81-7	bis(2-Ethylhexyl)phthalate	93	J
218-01-9	Chrysene	310	J
117-84-0	Di-n-octyl phthalate	390	U
205-99-2	Benzo(b)fluoranthene	370	J
207-08-9	Benzo(k)fluoranthene	140	J
50-32-8	Benzo(a)pyrene	210	J
193-39-5	Indeno(1,2,3-cd)pyrene	160	J
53-70-3	Dibenz(a,h)anthracene	43	J
191-24-2	Benzo(g,h,i)perylene	160	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-18-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008466

Sample wt/vol: 30.2 (g/ml) G Lab File ID: SA1D2985.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 20 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitrosodi-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	410	U
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	410	U
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	2100	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethylphthalate	410	U
606-20-2	2,6-Dinitrotoluene	410	U
208-96-8	Acenaphthylene	410	U
99-09-2	3-Nitroaniline	2100	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2100	U
100-02-7	4-Nitrophenol	2100	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-18-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008466

Sample wt/vol: 30.2 (g/ml) G Lab File ID: SA1D2985.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 20 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl phenylether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2100	U
534-52-1	4,6-Dinitro-2-methylphenol	2100	U
86-30-6	N-Nitrosodiphenylamine(1)	410	U
101-55-3	4-Bromophenyl phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2100	U
85-01-8	Phenanthrene	120	J
120-12-7	Anthracene	410	U
86-74-8	Carbazole	410	U
84-74-2	Di-n-butyl phthalate	410	U
206-44-0	Fluoranthene	190	J
129-00-0	Pyrene	290	J
85-68-7	Butylbenzylphthalate	43	J
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	120	J
117-81-7	bis(2-Ethylhexyl)phthalate	130	J
218-01-9	Chrysene	150	J
117-84-0	Di-n-octyl phthalate	410	U
205-99-2	Benzo(b)fluoranthene	230	J
207-08-9	Benzo(k)fluoranthene	72	J
50-32-8	Benzo(a)pyrene	140	J
193-39-5	Indeno(1,2,3-cd)pyrene	110	J
53-70-3	Dibenz(a,h)anthracene	410	U
191-24-2	Benzo(g,h,i)perylene	110	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-18-22

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008467

Sample wt/vol: 30.1 (g/ml) G Lab File ID: SA1D2986.D

Level: (low/med) LOW Date Received: 07/28/00

% Moisture: 20 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl)ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	2-Methylphenol	420	U
108-60-1	2,2'-oxybis(1-Chloropropane)	420	U
106-44-5	4-Methylphenol	420	U
621-64-7	N-Nitrosodi-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	420	U
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	420	U
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	2100	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethylphthalate	420	U
606-20-2	2,6-Dinitrotoluene	420	U
208-96-8	Acenaphthylene	420	U
99-09-2	3-Nitroaniline	2100	U
83-32-9	Acenaphthene	420	U
51-28-5	2,4-Dinitrophenol	2100	U
100-02-7	4-Nitrophenol	2100	U
132-64-9	Dibenzofuran	420	U
121-14-2	2,4-Dinitrotoluene	420	U

030255

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-18-22

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008467

Sample wt/vol: 30.1 (g/ml) G Lab File ID: SA1D2986.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: 20 decanted:(Y/N) N Date Extracted: 07/28/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/04/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenyl phenylether	420	U
86-73-7	Fluorene	420	U
100-01-6	4-Nitroaniline	2100	U
534-52-1	4,6-Dinitro-2-methylphenol	2100	U
86-30-6	N-Nitrosodiphenylamine(1)	420	U
101-55-3	4-Bromophenyl phenylether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2100	U
85-01-8	Phenanthrene	100	J
120-12-7	Anthracene	420	U
86-74-8	Carbazole	420	U
84-74-2	Di-n-butyl phthalate	420	U
206-44-0	Fluoranthene	180	J
129-00-0	Pyrene	300	J
85-68-7	Butylbenzylphthalate	62	J
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	110	J
117-81-7	bis(2-Ethylhexyl)phthalate	130	J
218-01-9	Chrysene	150	J
117-84-0	Di-n-octyl phthalate	420	U
205-99-2	Benzo(b)fluoranthene	210	J
207-08-9	Benzo(k)fluoranthene	100	J
50-32-8	Benzo(a)pyrene	160	J
193-39-5	Indeno(1,2,3-cd)pyrene	120	J
53-70-3	Dibenz(a,h)anthracene	420	U
191-24-2	Benzo(g,h,i)perylene	420	U

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-19-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008468

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1583.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 16 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitrosodi-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	400	U
606-20-2	2,6-Dinitrotoluene	400	U
208-96-8	Acenaphthylene	400	U
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-19-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008468

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1583.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 16 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine(1)	400	U
101-55-3	4-Bromophenyl phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	160	J
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butyl phthalate	400	U
206-44-0	Fluoranthene	270	J
129-00-0	Pyrene	270	J
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	120	J
117-81-7	bis(2-Ethylhexyl)phthalate	100	J
218-01-9	Chrysene	160	J
117-84-0	Di-n-octyl phthalate	400	U
205-99-2	Benzo(b)fluoranthene	220	J
207-08-9	Benzo(k)fluoranthene	80	J
50-32-8	Benzo(a)pyrene	130	J
193-39-5	Indeno(1,2,3-cd)pyrene	75	J
53-70-3	Dibenz(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	64	J

8/16/00

SC3C265A

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FSS-SS-20-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008469

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1584.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 13 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitrosodi-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	380	U
606-20-2	2,6-Dinitrotoluene	380	U
208-96-8	Acenaphthylene	380	U
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-20-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008469

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1584.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 13 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	380	U
101-55-3	4-Bromophenyl phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	97	J
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butyl phthalate	40	J
206-44-0	Fluoranthene	200	J
129-00-0	Pyrene	240	J
85-68-7	Butylbenzylphthalate	88	J
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	120	J
117-81-7	bis(2-Ethylhexyl)phthalate	17000	E
218-01-9	Chrysene	380	U
117-84-0	Di-n-octyl phthalate	240	J
205-99-2	Benzo(b)fluoranthene	180	J
207-08-9	Benzo(k)fluoranthene	79	J
50-32-8	Benzo(a)pyrene	110	J
193-39-5	Indeno(1,2,3-cd)pyrene	68	J
53-70-3	Dibenz(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	58	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-20-01DL

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008469DL

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1624.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 13 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	15000	U
111-44-4	bis(2-Chloroethyl)ether	15000	U
95-57-8	2-Chlorophenol	15000	U
541-73-1	1,3-Dichlorobenzene	15000	U
106-46-7	1,4-Dichlorobenzene	15000	U
95-50-1	1,2-Dichlorobenzene	15000	U
95-48-7	2-Methylphenol	15000	U
108-60-1	2,2'-oxybis(1-Chloropropane)	15000	U
106-44-5	4-Methylphenol	15000	U
621-64-7	N-Nitrosodi-n-propylamine	15000	U
67-72-1	Hexachloroethane	15000	U
98-95-3	Nitrobenzene	15000	U
78-59-1	Isophorone	15000	U
88-75-5	2-Nitrophenol	15000	U
105-67-9	2,4-Dimethylphenol	15000	U
111-91-1	bis(2-Chloroethoxy)methane	15000	U
120-83-2	2,4-Dichlorophenol	15000	U
120-82-1	1,2,4-Trichlorobenzene	15000	U
91-20-3	Naphthalene	15000	U
106-47-8	4-Chloroaniline	15000	U
87-68-3	Hexachlorobutadiene	15000	U
59-50-7	4-Chloro-3-methylphenol	15000	U
91-57-6	2-Methylnaphthalene	15000	U
77-47-4	Hexachlorocyclopentadiene	15000	U
88-06-2	2,4,6-Trichlorophenol	15000	U
95-95-4	2,4,5-Trichlorophenol	77000	U
91-58-7	2-Chloronaphthalene	15000	U
88-74-4	2-Nitroaniline	77000	U
131-11-3	Dimethylphthalate	15000	U
606-20-2	2,6-Dinitrotoluene	15000	U
208-96-8	Acenaphthylene	15000	U
99-09-2	3-Nitroaniline	77000	U
83-32-9	Acenaphthene	15000	U
51-28-5	2,4-Dinitrophenol	77000	U
100-02-7	4-Nitrophenol	77000	U
132-64-9	Dibenzofuran	15000	U
121-14-2	2,4-Dinitrotoluene	15000	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-20-01DL

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008469DL

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1624.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 13 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 40.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	15000	U
7005-72-3	4-Chlorophenyl phenylether	15000	U
86-73-7	Fluorene	15000	U
100-01-6	4-Nitroaniline	77000	U
534-52-1	4,6-Dinitro-2-methylphenol	77000	U
86-30-6	N-Nitrosodiphenylamine(1)	15000	U
101-55-3	4-Bromophenyl phenylether	15000	U
118-74-1	Hexachlorobenzene	15000	U
87-86-5	Pentachlorophenol	77000	U
85-01-8	Phenanthrene	15000	U
120-12-7	Anthracene	15000	U
86-74-8	Carbazole	15000	U
84-74-2	Di-n-butyl phthalate	15000	U
206-44-0	Fluoranthene	15000	U
129-00-0	Pyrene	15000	U
85-68-7	Butylbenzylphthalate	15000	U
91-94-1	3,3'-Dichlorobenzidine	15000	U
56-55-3	Benzo(a)anthracene	15000	U
117-81-7	bis(2-Ethylhexyl)phthalate	74000	D
218-01-9	Chrysene	15000	U
117-84-0	Di-n-octyl phthalate	15000	U
205-99-2	Benzo(b)fluoranthene	15000	U
207-08-9	Benzo(k)fluoranthene	15000	U
50-32-8	Benzo(a)pyrene	15000	U
193-39-5	Indeno(1,2,3-cd)pyrene	15000	U
53-70-3	Dibenz(a,h)anthracene	15000	U
191-24-2	Benzo(g,h,i)perylene	15000	U

030287

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-21-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008470

Sample wt/vol: 30.9 (g/ml) G Lab File ID: SC3D1585.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 12 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/12/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitrosodi-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	370	U
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	370	U
606-20-2	2,6-Dinitrotoluene	370	U
208-96-8	Acenaphthylene	370	U
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-21-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008470

Sample wt/vol: 30.9 (g/ml) G Lab File ID: SC3D1585.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 12 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/12/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine(1)	370	U
101-55-3	4-Bromophenyl phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	380	
120-12-7	Anthracene	72	J
86-74-8	Carbazole	57	J
84-74-2	Di-n-butyl phthalate	370	U
206-44-0	Fluoranthene	750	
129-00-0	Pyrene	810	
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	480	
117-81-7	bis(2-Ethylhexyl)phthalate	130	J
218-01-9	Chrysene	540	
117-84-0	Di-n-octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	980	
207-08-9	Benzo(k)fluoranthene	340	J
50-32-8	Benzo(a)pyrene	620	
193-39-5	Indeno(1,2,3-cd)pyrene	480	
53-70-3	Dibenz(a,h)anthracene	150	J
191-24-2	Benzo(g,h,i)perylene	450	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-22-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008471

Sample wt/vol: 29.4 (g/ml) G Lab File ID: SC3D1586.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 14 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/12/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitrosodi-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	400	U
606-20-2	2,6-Dinitrotoluene	400	U
208-96-8	Acenaphthylene	400	U
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-22-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008471

Sample wt/vol: 29.4 (g/ml) G Lab File ID: SC3D1586.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 14 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/12/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine(1)	400	U
101-55-3	4-Bromophenyl phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	190	J
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butyl phthalate	400	U
206-44-0	Fluoranthene	320	J
129-00-0	Pyrene	360	J
85-68-7	Butylbenzylphthalate	67	J
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	160	J
117-81-7	bis(2-Ethylhexyl)phthalate	200	J
218-01-9	Chrysene	220	J
117-84-0	Di-n-octyl phthalate	400	U
205-99-2	Benzo(b)fluoranthene	290	J
207-08-9	Benzo(k)fluoranthene	100	J
50-32-8	Benzo(a)pyrene	190	J
193-39-5	Indeno(1,2,3-cd)pyrene	140	J
53-70-3	Dibenz(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	120	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-23-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008472

Sample wt/vol: 29.8 (g/ml) G Lab File ID: SC3D1587.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 2 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/12/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	340	U
111-44-4	bis(2-Chloroethyl)ether	340	U
95-57-8	2-Chlorophenol	340	U
541-73-1	1,3-Dichlorobenzene	340	U
106-46-7	1,4-Dichlorobenzene	340	U
95-50-1	1,2-Dichlorobenzene	340	U
95-48-7	2-Methylphenol	340	U
108-60-1	2,2'-oxybis(1-Chloropropane)	340	U
106-44-5	4-Methylphenol	340	U
621-64-7	N-Nitrosodi-n-propylamine	340	U
67-72-1	Hexachloroethane	340	U
98-95-3	Nitrobenzene	340	U
78-59-1	Isophorone	340	U
88-75-5	2-Nitrophenol	340	U
105-67-9	2,4-Dimethylphenol	340	U
111-91-1	bis(2-Chloroethoxy)methane	340	U
120-83-2	2,4-Dichlorophenol	340	U
120-82-1	1,2,4-Trichlorobenzene	340	U
91-20-3	Naphthalene	72	J
106-47-8	4-Chloroaniline	340	U
87-68-3	Hexachlorobutadiene	340	U
59-50-7	4-Chloro-3-methylphenol	340	U
91-57-6	2-Methylnaphthalene	340	U
77-47-4	Hexachlorocyclopentadiene	340	U
88-06-2	2,4,6-Trichlorophenol	340	U
95-95-4	2,4,5-Trichlorophenol	1700	U
91-58-7	2-Chloronaphthalene	340	U
88-74-4	2-Nitroaniline	1700	U
131-11-3	Dimethylphthalate	340	U
606-20-2	2,6-Dinitrotoluene	340	U
208-96-8	Acenaphthylene	340	U
99-09-2	3-Nitroaniline	1700	U
83-32-9	Acenaphthene	340	U
51-28-5	2,4-Dinitrophenol	1700	U
100-02-7	4-Nitrophenol	1700	U
132-64-9	Dibenzofuran	340	U
121-14-2	2,4-Dinitrotoluene	340	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-23-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008472

Sample wt/vol: 29.8 (g/ml) G Lab File ID: SC3D1587.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 2 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/12/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	340	U
7005-72-3	4-Chlorophenyl phenylether	340	U
86-73-7	Fluorene	340	U
100-01-6	4-Nitroaniline	1700	U
534-52-1	4,6-Dinitro-2-methylphenol	1700	U
86-30-6	N-Nitrosodiphenylamine(1)	340	U
101-55-3	4-Bromophenyl phenylether	340	U
118-74-1	Hexachlorobenzene	340	U
87-86-5	Pentachlorophenol	1700	U
85-01-8	Phenanthrene	300	J
120-12-7	Anthracene	71	J
86-74-8	Carbazole	34	J
84-74-2	Di-n-butyl phthalate	340	U
206-44-0	Fluoranthene	460	
129-00-0	Pyrene	510	
85-68-7	Butylbenzylphthalate	340	U
91-94-1	3,3'-Dichlorobenzidine	340	U
56-55-3	Benzo(a)anthracene	230	J
117-81-7	bis(2-Ethylhexyl)phthalate	49	J
218-01-9	Chrysene	280	J
117-84-0	Di-n-octyl phthalate	340	U
205-99-2	Benzo(b)fluoranthene	360	
207-08-9	Benzo(k)fluoranthene	150	J
50-32-8	Benzo(a)pyrene	230	J
193-39-5	Indeno(1,2,3-cd)pyrene	160	J
53-70-3	Dibenz(a,h)anthracene	340	U
191-24-2	Benzo(g,h,i)perylene	140	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-24-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008473

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1605.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 27 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	460	U
111-44-4	bis(2-Chloroethyl)ether	460	U
95-57-8	2-Chlorophenol	460	U
541-73-1	1,3-Dichlorobenzene	460	U
106-46-7	1,4-Dichlorobenzene	460	U
95-50-1	1,2-Dichlorobenzene	460	U
95-48-7	2-Methylphenol	460	U
108-60-1	2,2'-oxybis(1-Chloropropane)	460	U
106-44-5	4-Methylphenol	460	U
621-64-7	N-Nitrosodi-n-propylamine	460	U
67-72-1	Hexachloroethane	460	U
98-95-3	Nitrobenzene	460	U
78-59-1	Isophorone	460	U
88-75-5	2-Nitrophenol	460	U
105-67-9	2,4-Dimethylphenol	460	U
111-91-1	bis(2-Chloroethoxy)methane	460	U
120-83-2	2,4-Dichlorophenol	460	U
120-82-1	1,2,4-Trichlorobenzene	460	U
91-20-3	Naphthalene	460	U
106-47-8	4-Chloroaniline	460	U
87-68-3	Hexachlorobutadiene	460	U
59-50-7	4-Chloro-3-methylphenol	460	U
91-57-6	2-Methylnaphthalene	460	U
77-47-4	Hexachlorocyclopentadiene	460	U
88-06-2	2,4,6-Trichlorophenol	460	U
95-95-4	2,4,5-Trichlorophenol	2300	U
91-58-7	2-Chloronaphthalene	460	U
88-74-4	2-Nitroaniline	2300	U
131-11-3	Dimethylphthalate	460	U
606-20-2	2,6-Dinitrotoluene	460	U
208-96-8	Acenaphthylene	460	U
99-09-2	3-Nitroaniline	2300	U
83-32-9	Acenaphthene	460	U
51-28-5	2,4-Dinitrophenol	2300	U
100-02-7	4-Nitrophenol	2300	U
132-64-9	Dibenzofuran	460	U
121-14-2	2,4-Dinitrotoluene	460	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-24-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008473

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1605.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 27 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	460	U
7005-72-3	4-Chlorophenyl phenylether	460	U
86-73-7	Fluorene	460	U
100-01-6	4-Nitroaniline	2300	U
534-52-1	4,6-Dinitro-2-methylphenol	2300	U
86-30-6	N-Nitrosodiphenylamine(1)	460	U
101-55-3	4-Bromophenyl phenylether	460	U
118-74-1	Hexachlorobenzene	460	U
87-86-5	Pentachlorophenol	2300	U
85-01-8	Phenanthrene	160	J
120-12-7	Anthracene	460	U
86-74-8	Carbazole	460	U
84-74-2	Di-n-butyl phthalate	460	U
206-44-0	Fluoranthene	260	J
129-00-0	Pyrene	330	J
85-68-7	Butylbenzylphthalate	110	J
91-94-1	3,3'-Dichlorobenzidine	460	U
56-55-3	Benzo(a)anthracene	160	J
117-81-7	bis(2-Ethylhexyl)phthalate	230	J
218-01-9	Chrysene	230	J
117-84-0	Di-n-octyl phthalate	460	U
205-99-2	Benzo(b)fluoranthene	320	J
207-08-9	Benzo(k)fluoranthene	94	J
50-32-8	Benzo(a)pyrene	190	J
193-39-5	Indeno(1,2,3-cd)pyrene	140	J
53-70-3	Dibenz(a,h)anthracene	460	U
191-24-2	Benzo(g,h,i)perylene	140	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-24-22

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008474

Sample wt/vol: 30.5 (g/ml) G Lab File ID: SC3D1606.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 27 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	69	J
111-44-4	bis(2-Chloroethyl)ether	450	U
95-57-8	2-Chlorophenol	450	U
541-73-1	1,3-Dichlorobenzene	450	U
106-46-7	1,4-Dichlorobenzene	450	U
95-50-1	1,2-Dichlorobenzene	450	U
95-48-7	2-Methylphenol	450	U
108-60-1	2,2'-oxybis(1-Chloropropane)	450	U
106-44-5	4-Methylphenol	450	U
621-64-7	N-Nitrosodi-n-propylamine	450	U
67-72-1	Hexachloroethane	450	U
98-95-3	Nitrobenzene	450	U
78-59-1	Isophorone	450	U
88-75-5	2-Nitrophenol	450	U
105-67-9	2,4-Dimethylphenol	450	U
111-91-1	bis(2-Chloroethoxy)methane	450	U
120-83-2	2,4-Dichlorophenol	450	U
120-82-1	1,2,4-Trichlorobenzene	450	U
91-20-3	Naphthalene	450	U
106-47-8	4-Chloroaniline	450	U
87-68-3	Hexachlorobutadiene	450	U
59-50-7	4-Chloro-3-methylphenol	450	U
91-57-6	2-Methylnaphthalene	450	U
77-47-4	Hexachlorocyclopentadiene	450	U
88-06-2	2,4,6-Trichlorophenol	450	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	450	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethylphthalate	450	U
606-20-2	2,6-Dinitrotoluene	450	U
208-96-8	Acenaphthylene	450	U
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	450	U
51-28-5	2,4-Dinitrophenol	2200	U
100-02-7	4-Nitrophenol	2200	U
132-64-9	Dibenzofuran	450	U
121-14-2	2,4-Dinitrotoluene	450	U

030337

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-24-22

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008474

Sample wt/vol: 30.5 (g/ml) G Lab File ID: SC3D1606.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 27 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	450	U
7005-72-3	4-Chlorophenyl phenylether	450	U
86-73-7	Fluorene	450	U
100-01-6	4-Nitroaniline	2200	U
534-52-1	4,6-Dinitro-2-methylphenol	2200	U
86-30-6	N-Nitrosodiphenylamine(1)	450	U
101-55-3	4-Bromophenyl phenylether	450	U
118-74-1	Hexachlorobenzene	450	U
87-86-5	Pentachlorophenol	2200	U
85-01-8	Phenanthrene	150	J
120-12-7	Anthracene	450	U
86-74-8	Carbazole	450	U
84-74-2	Di-n-butyl phthalate	450	U
206-44-0	Fluoranthene	250	J
129-00-0	Pyrene	270	J
85-68-7	Butylbenzylphthalate	54	J
91-94-1	3,3'-Dichlorobenzidine	450	U
56-55-3	Benzo(a)anthracene	140	J
117-81-7	bis(2-Ethylhexyl)phthalate	210	J
218-01-9	Chrysene	220	J
117-84-0	Di-n-octyl phthalate	450	U
205-99-2	Benzo(b)fluoranthene	270	J
207-08-9	Benzo(k)fluoranthene	96	J
50-32-8	Benzo(a)pyrene	170	J
193-39-5	Indeno(1,2,3-cd)pyrene	140	J
53-70-3	Dibenz(a,h)anthracene	450	U
191-24-2	Benzo(g,h,i)perylene	130	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-25-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008475

Sample wt/vol: 30.7 (g/ml) G Lab File ID: SC3D1593.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 24 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitrosodi-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	430	U
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	44	J
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	2100	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethylphthalate	430	U
606-20-2	2,6-Dinitrotoluene	430	U
208-96-8	Acenaphthylene	430	U
99-09-2	3-Nitroaniline	2100	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2100	U
100-02-7	4-Nitrophenol	2100	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-25-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008475

Sample wt/vol: 30.7 (g/ml) G Lab File ID: SC3D1593.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 24 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenyl phenylether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	2100	U
534-52-1	4,6-Dinitro-2-methylphenol	2100	U
86-30-6	N-Nitrosodiphenylamine(1)	430	U
101-55-3	4-Bromophenyl phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2100	U
85-01-8	Phenanthrene	440	
120-12-7	Anthracene	88	J
86-74-8	Carbazole	51	J
84-74-2	Di-n-butyl phthalate	430	U
206-44-0	Fluoranthene	590	
129-00-0	Pyrene	530	
85-68-7	Butylbenzylphthalate	69	J
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	290	J
117-81-7	bis(2-Ethylhexyl)phthalate	200	J
218-01-9	Chrysene	380	J
117-84-0	Di-n-octyl phthalate	430	U
205-99-2	Benzo(b)fluoranthene	470	
207-08-9	Benzo(k)fluoranthene	170	J
50-32-8	Benzo(a)pyrene	300	J
193-39-5	Indeno(1,2,3-cd)pyrene	230	J
53-70-3	Dibenz(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	190	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FSS-SS-26-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008476

Sample wt/vol: 29.8 (g/ml) G Lab File ID: SC3D1594.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 18 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	410	U
111-44-4	bis(2-Chloroethyl)ether	410	U
95-57-8	2-Chlorophenol	410	U
541-73-1	1,3-Dichlorobenzene	410	U
106-46-7	1,4-Dichlorobenzene	410	U
95-50-1	1,2-Dichlorobenzene	410	U
95-48-7	2-Methylphenol	410	U
108-60-1	2,2'-oxybis(1-Chloropropane)	410	U
106-44-5	4-Methylphenol	410	U
621-64-7	N-Nitrosodi-n-propylamine	410	U
67-72-1	Hexachloroethane	410	U
98-95-3	Nitrobenzene	410	U
78-59-1	Isophorone	410	U
88-75-5	2-Nitrophenol	410	U
105-67-9	2,4-Dimethylphenol	410	U
111-91-1	bis(2-Chloroethoxy)methane	410	U
120-83-2	2,4-Dichlorophenol	410	U
120-82-1	1,2,4-Trichlorobenzene	410	U
91-20-3	Naphthalene	58	J
106-47-8	4-Chloroaniline	410	U
87-68-3	Hexachlorobutadiene	410	U
59-50-7	4-Chloro-3-methylphenol	410	U
91-57-6	2-Methylnaphthalene	59	J
77-47-4	Hexachlorocyclopentadiene	410	U
88-06-2	2,4,6-Trichlorophenol	410	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	410	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	410	U
606-20-2	2,6-Dinitrotoluene	410	U
208-96-8	Acenaphthylene	72	J
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	410	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	410	U
121-14-2	2,4-Dinitrotoluene	410	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-26-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008476

Sample wt/vol: 29.8 (g/ml) G Lab File ID: SC3D1594.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 18 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	410	U
7005-72-3	4-Chlorophenyl phenylether	410	U
86-73-7	Fluorene	410	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine(1)	410	U
101-55-3	4-Bromophenyl phenylether	410	U
118-74-1	Hexachlorobenzene	410	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	370	J
120-12-7	Anthracene	86	J
86-74-8	Carbazole	58	J
84-74-2	Di-n-butyl phthalate	410	U
206-44-0	Fluoranthene	600	
129-00-0	Pyrene	590	
85-68-7	Butylbenzylphthalate	51	J
91-94-1	3,3'-Dichlorobenzidine	410	U
56-55-3	Benzo(a)anthracene	300	J
117-81-7	bis(2-Ethylhexyl)phthalate	180	J
218-01-9	Chrysene	440	
117-84-0	Di-n-octyl phthalate	410	U
205-99-2	Benzo(b)fluoranthene	600	
207-08-9	Benzo(k)fluoranthene	210	J
50-32-8	Benzo(a)pyrene	340	J
193-39-5	Indeno(1,2,3-cd)pyrene	350	J
53-70-3	Dibenz(a,h)anthracene	90	J
191-24-2	Benzo(g,h,i)perylene	310	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-27-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008477

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1595.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 17 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitrosodi-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	400	U
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	400	U
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	400	U
606-20-2	2,6-Dinitrotoluene	400	U
208-96-8	Acenaphthylene	400	U
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	400	U
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	400	U
121-14-2	2,4-Dinitrotoluene	400	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-27-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008477

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1595.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 17 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl phenylether	400	U
86-73-7	Fluorene	400	U
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine(1)	400	U
101-55-3	4-Bromophenyl phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	110	J
120-12-7	Anthracene	400	U
86-74-8	Carbazole	400	U
84-74-2	Di-n-butyl phthalate	400	U
206-44-0	Fluoranthene	210	J
129-00-0	Pyrene	190	J
85-68-7	Butylbenzylphthalate	44	J
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	99	J
117-81-7	bis(2-Ethylhexyl)phthalate	150	J
218-01-9	Chrysene	160	J
117-84-0	Di-n-octyl phthalate	400	U
205-99-2	Benzo(b)fluoranthene	190	J
207-08-9	Benzo(k)fluoranthene	82	J
50-32-8	Benzo(a)pyrene	110	J
193-39-5	Indeno(1,2,3-cd)pyrene	87	J
53-70-3	Dibenz(a,h)anthracene	400	U
191-24-2	Benzo(g,h,i)perylene	93	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-28-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008478

Sample wt/vol: 29.6 (g/ml) G Lab File ID: SC3D1596.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 21 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitrosodi-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	44	J
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	50	J
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	2100	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethylphthalate	430	U
606-20-2	2,6-Dinitrotoluene	430	U
208-96-8	Acenaphthylene	59	J
99-09-2	3-Nitroaniline	2100	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2100	U
100-02-7	4-Nitrophenol	2100	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-28-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008478

Sample wt/vol: 29.6 (g/ml) G Lab File ID: SC3D1596.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 21 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenyl phenylether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	2100	U
534-52-1	4,6-Dinitro-2-methylphenol	2100	U
86-30-6	N-Nitrosodiphenylamine(1)	430	U
101-55-3	4-Bromophenyl phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2100	U
85-01-8	Phenanthrene	320	J
120-12-7	Anthracene	82	J
86-74-8	Carbazole	46	J
84-74-2	Di-n-butyl phthalate	64	J
206-44-0	Fluoranthene	680	
129-00-0	Pyrene	690	
85-68-7	Butylbenzylphthalate	69	J
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	320	J
117-81-7	bis(2-Ethylhexyl)phthalate	300	J
218-01-9	Chrysene	460	
117-84-0	Di-n-octyl phthalate	430	U
205-99-2	Benzo(b)fluoranthene	630	
207-08-9	Benzo(k)fluoranthene	220	J
50-32-8	Benzo(a)pyrene	380	J
193-39-5	Indeno(1,2,3-cd)pyrene	280	J
53-70-3	Dibenz(a,h)anthracene	72	J
191-24-2	Benzo(g,h,i)perylene	250	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-29-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008479

Sample wt/vol: 31 (g/ml) G Lab File ID: SC3D1597.D

Level: (low/med) LOW Date Received:

% Moisture: 38 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	520	U
111-44-4	bis(2-Chloroethyl)ether	520	U
95-57-8	2-Chlorophenol	520	U
541-73-1	1,3-Dichlorobenzene	520	U
106-46-7	1,4-Dichlorobenzene	520	U
95-50-1	1,2-Dichlorobenzene	520	U
95-48-7	2-Methylphenol	520	U
108-60-1	2,2'-oxybis(1-Chloropropane)	520	U
106-44-5	4-Methylphenol	55	J
621-64-7	N-Nitrosodi-n-propylamine	520	U
67-72-1	Hexachloroethane	520	U
98-95-3	Nitrobenzene	520	U
78-59-1	Isophorone	520	U
88-75-5	2-Nitrophenol	520	U
105-67-9	2,4-Dimethylphenol	520	U
111-91-1	bis(2-Chloroethoxy)methane	520	U
120-83-2	2,4-Dichlorophenol	520	U
120-82-1	1,2,4-Trichlorobenzene	520	U
91-20-3	Naphthalene	190	J
106-47-8	4-Chloroaniline	520	U
87-68-3	Hexachlorobutadiene	520	U
59-50-7	4-Chloro-3-methylphenol	520	U
91-57-6	2-Methylnaphthalene	58	J
77-47-4	Hexachlorocyclopentadiene	520	U
88-06-2	2,4,6-Trichlorophenol	520	U
95-95-4	2,4,5-Trichlorophenol	2600	U
91-58-7	2-Chloronaphthalene	520	U
88-74-4	2-Nitroaniline	2600	U
131-11-3	Dimethylphthalate	520	U
606-20-2	2,6-Dinitrotoluene	520	U
208-96-8	Acenaphthylene	410	J
99-09-2	3-Nitroaniline	2600	U
83-32-9	Acenaphthene	520	U
51-28-5	2,4-Dinitrophenol	2600	U
100-02-7	4-Nitrophenol	2600	U
132-64-9	Dibenzofuran	520	U
121-14-2	2,4-Dinitrotoluene	520	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-29-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008479

Sample wt/vol: 31 (g/ml) G Lab File ID: SC3D1597.D

Level: (low/med) LOW Date Received:

% Moisture: 38 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	520	U
7005-72-3	4-Chlorophenyl phenylether	520	U
86-73-7	Fluorene	520	U
100-01-6	4-Nitroaniline	2600	U
534-52-1	4,6-Dinitro-2-methylphenol	2600	U
86-30-6	N-Nitrosodiphenylamine(1)	520	U
101-55-3	4-Bromophenyl phenylether	520	U
118-74-1	Hexachlorobenzene	520	U
87-86-5	Pentachlorophenol	2600	U
85-01-8	Phenanthrene	620	
120-12-7	Anthracene	190	J
86-74-8	Carbazole	100	J
84-74-2	Di-n-butyl phthalate	66	J
206-44-0	Fluoranthene	2000	
129-00-0	Pyrene	2700	
85-68-7	Butylbenzylphthalate	300	J
91-94-1	3,3'-Dichlorobenzidine	520	U
56-55-3	Benzo(a)anthracene	1600	
117-81-7	bis(2-Ethylhexyl)phthalate	9800	E
218-01-9	Chrysene	1500	
117-84-0	Di-n-octyl phthalate	520	U
205-99-2	Benzo(b)fluoranthene	2200	
207-08-9	Benzo(k)fluoranthene	680	
50-32-8	Benzo(a)pyrene	1500	
193-39-5	Indeno(1,2,3-cd)pyrene	1200	
53-70-3	Dibenz(a,h)anthracene	280	J
191-24-2	Benzo(g,h,i)perylene	1000	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-29-01DL

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008479DL

Sample wt/vol: 31 (g/ml) G Lab File ID: SC3D1635.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 38 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/15/00

Injection Volume: 1.0 (uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	2100	U
111-44-4	bis(2-Chloroethyl)ether	2100	U
95-57-8	2-Chlorophenol	2100	U
541-73-1	1,3-Dichlorobenzene	2100	U
106-46-7	1,4-Dichlorobenzene	2100	U
95-50-1	1,2-Dichlorobenzene	2100	U
95-48-7	2-Methylphenol	2100	U
108-60-1	2,2'-oxybis(1-Chloropropane)	2100	U
106-44-5	4-Methylphenol	2100	U
621-64-7	N-Nitrosodi-n-propylamine	2100	U
67-72-1	Hexachloroethane	2100	U
98-95-3	Nitrobenzene	2100	U
78-59-1	Isophorone	2100	U
88-75-5	2-Nitrophenol	2100	U
105-67-9	2,4-Dimethylphenol	2100	U
111-91-1	bis(2-Chloroethoxy)methane	2100	U
120-83-2	2,4-Dichlorophenol	2100	U
120-82-1	1,2,4-Trichlorobenzene	2100	U
91-20-3	Naphthalene	2100	U
106-47-8	4-Chloroaniline	2100	U
87-68-3	Hexachlorobutadiene	2100	U
59-50-7	4-Chloro-3-methylphenol	2100	U
91-57-6	2-Methylnaphthalene	2100	U
77-47-4	Hexachlorocyclopentadiene	2100	U
88-06-2	2,4,6-Trichlorophenol	2100	U
95-95-4	2,4,5-Trichlorophenol	10000	U
91-58-7	2-Chloronaphthalene	2100	U
88-74-4	2-Nitroaniline	10000	U
131-11-3	Dimethylphthalate	2100	U
606-20-2	2,6-Dinitrotoluene	2100	U
208-96-8	Acenaphthylene	450	JD
99-09-2	3-Nitroaniline	10000	U
83-32-9	Acenaphthene	2100	U
51-28-5	2,4-Dinitrophenol	10000	U
100-02-7	4-Nitrophenol	10000	U
132-64-9	Dibenzofuran	2100	U
121-14-2	2,4-Dinitrotoluene	2100	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-29-01DL

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008479DL

Sample wt/vol: 31 (g/ml) G Lab File ID: SC3D1635.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 38 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/15/00

Injection Volume: 1.0 (uL) Dilution Factor: 4.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	2100	U
7005-72-3	4-Chlorophenyl phenylether	2100	U
86-73-7	Fluorene	2100	U
100-01-6	4-Nitroaniline	10000	U
534-52-1	4,6-Dinitro-2-methylphenol	10000	U
86-30-6	N-Nitrosodiphenylamine(1)	2100	U
101-55-3	4-Bromophenyl phenylether	2100	U
118-74-1	Hexachlorobenzene	2100	U
87-86-5	Pentachlorophenol	10000	U
85-01-8	Phenanthrene	680	JD
120-12-7	Anthracene	2100	U
86-74-8	Carbazole	2100	U
84-74-2	Di-n-butyl phthalate	2100	U
206-44-0	Fluoranthene	2500	D
129-00-0	Pyrene	2600	D
85-68-7	Butylbenzylphthalate	240	JD
91-94-1	3,3'-Dichlorobenzidine	2100	U
56-55-3	Benzo(a)anthracene	1700	JD
117-81-7	bis(2-Ethylhexyl)phthalate	11000	D
218-01-9	Chrysene	1700	JD
117-84-0	Di-n-octyl phthalate	2100	U
205-99-2	Benzo(b)fluoranthene	2200	D
207-08-9	Benzo(k)fluoranthene	870	JD
50-32-8	Benzo(a)pyrene	1900	JD
193-39-5	Indeno(1,2,3-cd)pyrene	1200	JD
53-70-3	Dibenz(a,h)anthracene	2100	U
191-24-2	Benzo(g,h,i)perylene	1100	JD

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FSS-SS-30-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008480

Sample wt/vol: 30.7 (g/ml) G Lab File ID: SC3D1598.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 8 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitrosodi-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	46	J
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	45	J
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	350	U
606-20-2	2,6-Dinitrotoluene	350	U
208-96-8	Acenaphthylene	55	J
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-30-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008480

Sample wt/vol: 30.7 (g/ml) G Lab File ID: SC3D1598.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 8 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine(1)	350	U
101-55-3	4-Bromophenyl phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	250	J
120-12-7	Anthracene	56	J
86-74-8	Carbazole	350	U
84-74-2	Di-n-butyl phthalate	39	J
206-44-0	Fluoranthene	460	
129-00-0	Pyrene	450	
85-68-7	Butylbenzylphthalate	99	J
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	250	J
117-81-7	bis(2-Ethylhexyl)phthalate	210	J
218-01-9	Chrysene	360	
117-84-0	Di-n-octyl phthalate	350	U
205-99-2	Benzo(b)fluoranthene	430	
207-08-9	Benzo(k)fluoranthene	160	J
50-32-8	Benzo(a)pyrene	260	J
193-39-5	Indeno(1,2,3-cd)pyrene	220	J
53-70-3	Dibenz(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	170	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-31-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008481

Sample wt/vol: 30 (g/ml) G Lab File ID: SC3D1599.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 6 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitrosodi-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	110	J
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	110	J
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	350	U
606-20-2	2,6-Dinitrotoluene	350	U
208-96-8	Acenaphthylene	73	J
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	140	J
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	160	J
121-14-2	2,4-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-31-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008481

Sample wt/vol: 30 (g/ml) G Lab File ID: SC3D1599.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 6 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl phenylether	350	U
86-73-7	Fluorene	210	J
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine(1)	350	U
101-55-3	4-Bromophenyl phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	1400	
120-12-7	Anthracene	390	
86-74-8	Carbazole	170	J
84-74-2	Di-n-butyl phthalate	350	U
206-44-0	Fluoranthene	1200	
129-00-0	Pyrene	1300	
85-68-7	Butylbenzylphthalate	81	J
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	630	
117-81-7	bis(2-Ethylhexyl)phthalate	200	J
218-01-9	Chrysene	660	
117-84-0	Di-n-octyl phthalate	350	U
205-99-2	Benzo(b)fluoranthene	690	
207-08-9	Benzo(k)fluoranthene	260	J
50-32-8	Benzo(a)pyrene	550	
193-39-5	Indeno(1,2,3-cd)pyrene	320	J
53-70-3	Dibenz(a,h)anthracene	97	J
191-24-2	Benzo(g,h,i)perylene	270	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-32-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008482

Sample wt/vol: 30.6 (g/ml) G Lab File ID: SC3D1600.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 11 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitrosodi-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	54	J
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	43	J
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	370	U
606-20-2	2,6-Dinitrotoluene	370	U
208-96-8	Acenaphthylene	110	J
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-32-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008482

Sample wt/vol: 30.6 (g/ml) G Lab File ID: SC3D1600.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 11 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/13/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine(1)	370	U
101-55-3	4-Bromophenyl phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	240	J
120-12-7	Anthracene	81	J
86-74-8	Carbazole	370	U
84-74-2	Di-n-butyl phthalate	370	U
206-44-0	Fluoranthene	480	
129-00-0	Pyrene	490	
85-68-7	Butylbenzylphthalate	76	J
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	300	J
117-81-7	bis(2-Ethylhexyl)phthalate	190	J
218-01-9	Chrysene	420	
117-84-0	Di-n-octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	590	
207-08-9	Benzo(k)fluoranthene	170	J
50-32-8	Benzo(a)pyrene	370	
193-39-5	Indeno(1,2,3-cd)pyrene	300	J
53-70-3	Dibenz(a,h)anthracene	77	J
191-24-2	Benzo(g,h,i)perylene	260	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-33-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008483

Sample wt/vol: 30.7 (g/ml) G Lab File ID: SC3D1601.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 9 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	360	U
111-44-4	bis(2-Chloroethyl)ether	360	U
95-57-8	2-Chlorophenol	360	U
541-73-1	1,3-Dichlorobenzene	360	U
106-46-7	1,4-Dichlorobenzene	360	U
95-50-1	1,2-Dichlorobenzene	360	U
95-48-7	2-Methylphenol	360	U
108-60-1	2,2'-oxybis(1-Chloropropane)	360	U
106-44-5	4-Methylphenol	360	U
621-64-7	N-Nitrosodi-n-propylamine	360	U
67-72-1	Hexachloroethane	360	U
98-95-3	Nitrobenzene	360	U
78-59-1	Isophorone	360	U
88-75-5	2-Nitrophenol	360	U
105-67-9	2,4-Dimethylphenol	360	U
111-91-1	bis(2-Chloroethoxy)methane	360	U
120-83-2	2,4-Dichlorophenol	360	U
120-82-1	1,2,4-Trichlorobenzene	360	U
91-20-3	Naphthalene	50	J
106-47-8	4-Chloroaniline	360	U
87-68-3	Hexachlorobutadiene	360	U
59-50-7	4-Chloro-3-methylphenol	360	U
91-57-6	2-Methylnaphthalene	36	J
77-47-4	Hexachlorocyclopentadiene	360	U
88-06-2	2,4,6-Trichlorophenol	360	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	360	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	360	U
606-20-2	2,6-Dinitrotoluene	360	U
208-96-8	Acenaphthylene	120	J
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	360	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	360	U
121-14-2	2,4-Dinitrotoluene	360	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-33-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008483

Sample wt/vol: 30.7 (g/ml) G Lab File ID: SC3D1601.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 9 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	360	U
7005-72-3	4-Chlorophenyl phenylether	360	U
86-73-7	Fluorene	360	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine(1)	360	U
101-55-3	4-Bromophenyl phenylether	360	U
118-74-1	Hexachlorobenzene	360	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	230	J
120-12-7	Anthracene	71	J
86-74-8	Carbazole	360	U
84-74-2	Di-n-butyl phthalate	360	U
206-44-0	Fluoranthene	420	
129-00-0	Pyrene	440	
85-68-7	Butylbenzylphthalate	150	J
91-94-1	3,3'-Dichlorobenzidine	360	U
56-55-3	Benzo(a)anthracene	260	J
117-81-7	bis(2-Ethylhexyl)phthalate	130	J
218-01-9	Chrysene	350	J
117-84-0	Di-n-octyl phthalate	360	U
205-99-2	Benzo(b)fluoranthene	500	
207-08-9	Benzo(k)fluoranthene	190	J
50-32-8	Benzo(a)pyrene	360	J
193-39-5	Indeno(1,2,3-cd)pyrene	290	J
53-70-3	Dibenz(a,h)anthracene	360	U
191-24-2	Benzo(g,h,i)perylene	250	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FSS-SS-34-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008484

Sample wt/vol: 29.3 (g/ml) G Lab File ID: SC3D1602.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 7 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitrosodi-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	110	J
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	150	J
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	370	U
606-20-2	2,6-Dinitrotoluene	370	U
208-96-8	Acenaphthylene	43	J
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-34-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008484

Sample wt/vol: 29.3 (g/ml) G Lab File ID: SC3D1602.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 7 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine(1)	370	U
101-55-3	4-Bromophenyl phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	180	J
120-12-7	Anthracene	64	J
86-74-8	Carbazole	370	U
84-74-2	Di-n-butyl phthalate	370	U
206-44-0	Fluoranthene	240	J
129-00-0	Pyrene	250	J
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	120	J
117-81-7	bis(2-Ethylhexyl)phthalate	59	J
218-01-9	Chrysene	190	J
117-84-0	Di-n-octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	220	J
207-08-9	Benzo(k)fluoranthene	64	J
50-32-8	Benzo(a)pyrene	120	J
193-39-5	Indeno(1,2,3-cd)pyrene	95	J
53-70-3	Dibenz(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	85	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-35-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008485

Sample wt/vol: 29.7 (g/ml) G Lab File ID: SC3D1603.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 9 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitrosodi-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	39	J
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	370	U
606-20-2	2,6-Dinitrotoluene	370	U
208-96-8	Acenaphthylene	43	J
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-35-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008485

Sample wt/vol: 29.7 (g/ml) G Lab File ID: SC3D1603.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 9 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	370	U
101-55-3	4-Bromophenyl phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	290	J
120-12-7	Anthracene	53	J
86-74-8	Carbazole	370	U
84-74-2	Di-n-butyl phthalate	370	U
206-44-0	Fluoranthene	490	
129-00-0	Pyrene	540	
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	250	J
117-81-7	bis(2-Ethylhexyl)phthalate	110	J
218-01-9	Chrysene	350	J
117-84-0	Di-n-octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	450	
207-08-9	Benzo(k)fluoranthene	160	J
50-32-8	Benzo(a)pyrene	260	J
193-39-5	Indeno(1,2,3-cd)pyrene	240	J
53-70-3	Dibenz(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	190	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-35-22

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008486

Sample wt/vol: 30 (g/ml) G Lab File ID: SC3D1604.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 10 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitrosodi-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	39	J
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	370	U
606-20-2	2,6-Dinitrotoluene	370	U
208-96-8	Acenaphthylene	42	J
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-35-22

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008486

Sample wt/vol: 30 (g/ml) G Lab File ID: SC3D1604.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 10 decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/14/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	370	U
101-55-3	4-Bromophenyl phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	230	J
120-12-7	Anthracene	45	J
86-74-8	Carbazole	370	U
84-74-2	Di-n-butyl phthalate	49	J
206-44-0	Fluoranthene	450	
129-00-0	Pyrene	490	
85-68-7	Butylbenzylphthalate	53	J
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	230	J
117-81-7	bis(2-Ethylhexyl)phthalate	140	J
218-01-9	Chrysene	330	J
117-84-0	Di-n-octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	440	
207-08-9	Benzo(k)fluoranthene	150	J
50-32-8	Benzo(a)pyrene	230	J
193-39-5	Indeno(1,2,3-cd)pyrene	240	J
53-70-3	Dibenz(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	190	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-36-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008488

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1581.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 10 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitrosodi-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	59	J
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	47	J
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	370	U
606-20-2	2,6-Dinitrotoluene	370	U
208-96-8	Acenaphthylene	61	J
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-36-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008488

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1581.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 10 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl phenylether	370	U
86-73-7	Fluorene	39	J
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	370	U
101-55-3	4-Bromophenyl phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	630	
120-12-7	Anthracene	100	J
86-74-8	Carbazole	75	J
84-74-2	Di-n-butyl phthalate	52	J
206-44-0	Fluoranthene	1000	
129-00-0	Pyrene	1100	
85-68-7	Butylbenzylphthalate	150	J
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	500	
117-81-7	bis(2-Ethylhexyl)phthalate	770	
218-01-9	Chrysene	670	
117-84-0	Di-n-octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	830	
207-08-9	Benzo(k)fluoranthene	320	J
50-32-8	Benzo(a)pyrene	480	
193-39-5	Indeno(1,2,3-cd)pyrene	340	J
53-70-3	Dibenz(a,h)anthracene	95	J
191-24-2	Benzo(g,h,i)perylene	260	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FSS-SS-37-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008489

Sample wt/vol: 28.7 (g/ml) G Lab File ID: SC3D1440.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 7 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/02/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitrosodi-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	87	J
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	370	U
606-20-2	2,6-Dinitrotoluene	370	U
208-96-8	Acenaphthylene	79	J
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-37-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008489

Sample wt/vol: 28.7 (g/ml) G Lab File ID: SC3D1440.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 7 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/02/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl phenylether	370	U
86-73-7	Fluorene	370	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	370	U
101-55-3	4-Bromophenyl phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	290	J
120-12-7	Anthracene	69	J
86-74-8	Carbazole	110	J
84-74-2	Di-n-butyl phthalate	370	U
206-44-0	Fluoranthene	1100	
129-00-0	Pyrene	1300	
85-68-7	Butylbenzylphthalate	73	J
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	730	
117-81-7	bis(2-Ethylhexyl)phthalate	210	J
218-01-9	Chrysene	840	
117-84-0	Di-n-octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	1100	
207-08-9	Benzo(k)fluoranthene	420	
50-32-8	Benzo(a)pyrene	700	
193-39-5	Indeno(1,2,3-cd)pyrene	400	
53-70-3	Dibenz(a,h)anthracene	370	U
191-24-2	Benzo(g,h,i)perylene	310	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-38-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008490

Sample wt/vol: 30 (g/ml) G Lab File ID: SC3D1441.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 12 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/02/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	380	U
111-44-4	bis(2-Chloroethyl)ether	380	U
95-57-8	2-Chlorophenol	380	U
541-73-1	1,3-Dichlorobenzene	380	U
106-46-7	1,4-Dichlorobenzene	380	U
95-50-1	1,2-Dichlorobenzene	380	U
95-48-7	2-Methylphenol	380	U
108-60-1	2,2'-oxybis(1-Chloropropane)	380	U
106-44-5	4-Methylphenol	380	U
621-64-7	N-Nitrosodi-n-propylamine	380	U
67-72-1	Hexachloroethane	380	U
98-95-3	Nitrobenzene	380	U
78-59-1	Isophorone	380	U
88-75-5	2-Nitrophenol	380	U
105-67-9	2,4-Dimethylphenol	380	U
111-91-1	bis(2-Chloroethoxy)methane	380	U
120-83-2	2,4-Dichlorophenol	380	U
120-82-1	1,2,4-Trichlorobenzene	380	U
91-20-3	Naphthalene	380	U
106-47-8	4-Chloroaniline	380	U
87-68-3	Hexachlorobutadiene	380	U
59-50-7	4-Chloro-3-methylphenol	380	U
91-57-6	2-Methylnaphthalene	380	U
77-47-4	Hexachlorocyclopentadiene	380	U
88-06-2	2,4,6-Trichlorophenol	380	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	380	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	380	U
606-20-2	2,6-Dinitrotoluene	380	U
208-96-8	Acenaphthylene	380	U
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	380	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	380	U
121-14-2	2,4-Dinitrotoluene	380	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-38-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008490

Sample wt/vol: 30 (g/ml) G Lab File ID: SC3D1441.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 12 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/02/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	380	U
7005-72-3	4-Chlorophenyl phenylether	380	U
86-73-7	Fluorene	380	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	380	U
101-55-3	4-Bromophenyl phenylether	380	U
118-74-1	Hexachlorobenzene	380	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	140	J
120-12-7	Anthracene	380	U
86-74-8	Carbazole	380	U
84-74-2	Di-n-butyl phthalate	380	U
206-44-0	Fluoranthene	330	J
129-00-0	Pyrene	380	
85-68-7	Butylbenzylphthalate	70	J
91-94-1	3,3'-Dichlorobenzidine	380	U
56-55-3	Benzo(a)anthracene	150	J
117-81-7	bis(2-Ethylhexyl)phthalate	200	J
218-01-9	Chrysene	210	J
117-84-0	Di-n-octyl phthalate	380	U
205-99-2	Benzo(b)fluoranthene	270	J
207-08-9	Benzo(k)fluoranthene	120	J
50-32-8	Benzo(a)pyrene	160	J
193-39-5	Indeno(1,2,3-cd)pyrene	100	J
53-70-3	Dibenz(a,h)anthracene	380	U
191-24-2	Benzo(g,h,i)perylene	78	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-39-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008491

Sample wt/vol: 30.7 (g/ml) G Lab File ID: SC3D1582.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 12 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	370	U
111-44-4	bis(2-Chloroethyl)ether	370	U
95-57-8	2-Chlorophenol	370	U
541-73-1	1,3-Dichlorobenzene	370	U
106-46-7	1,4-Dichlorobenzene	370	U
95-50-1	1,2-Dichlorobenzene	370	U
95-48-7	2-Methylphenol	370	U
108-60-1	2,2'-oxybis(1-Chloropropane)	370	U
106-44-5	4-Methylphenol	370	U
621-64-7	N-Nitrosodi-n-propylamine	370	U
67-72-1	Hexachloroethane	370	U
98-95-3	Nitrobenzene	370	U
78-59-1	Isophorone	370	U
88-75-5	2-Nitrophenol	370	U
105-67-9	2,4-Dimethylphenol	370	U
111-91-1	bis(2-Chloroethoxy)methane	370	U
120-83-2	2,4-Dichlorophenol	370	U
120-82-1	1,2,4-Trichlorobenzene	370	U
91-20-3	Naphthalene	55	J
106-47-8	4-Chloroaniline	370	U
87-68-3	Hexachlorobutadiene	370	U
59-50-7	4-Chloro-3-methylphenol	370	U
91-57-6	2-Methylnaphthalene	370	U
77-47-4	Hexachlorocyclopentadiene	370	U
88-06-2	2,4,6-Trichlorophenol	370	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	370	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	370	U
606-20-2	2,6-Dinitrotoluene	370	U
208-96-8	Acenaphthylene	290	J
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	370	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	370	U
121-14-2	2,4-Dinitrotoluene	370	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-39-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008491

Sample wt/vol: 30.7 (g/ml) G Lab File ID: SC3D1582.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 12 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	370	U
7005-72-3	4-Chlorophenyl phenylether	370	U
86-73-7	Fluorene	65	J
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	370	U
101-55-3	4-Bromophenyl phenylether	370	U
118-74-1	Hexachlorobenzene	370	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	930	
120-12-7	Anthracene	180	J
86-74-8	Carbazole	110	J
84-74-2	Di-n-butyl phthalate	370	U
206-44-0	Fluoranthene	1600	
129-00-0	Pyrene	1700	
85-68-7	Butylbenzylphthalate	370	U
91-94-1	3,3'-Dichlorobenzidine	370	U
56-55-3	Benzo(a)anthracene	860	
117-81-7	bis(2-Ethylhexyl)phthalate	870	
218-01-9	Chrysene	1100	
117-84-0	Di-n-octyl phthalate	370	U
205-99-2	Benzo(b)fluoranthene	1400	
207-08-9	Benzo(k)fluoranthene	540	
50-32-8	Benzo(a)pyrene	910	
193-39-5	Indeno(1,2,3-cd)pyrene	680	
53-70-3	Dibenz(a,h)anthracene	180	J
191-24-2	Benzo(g,h,i)perylene	500	

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FSS-SS-40-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008492

Sample wt/vol: 28.8 (g/ml) G Lab File ID: SC3D1580.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 10 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitrosodi-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	44	J
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	41	J
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	390	U
606-20-2	2,6-Dinitrotoluene	390	U
208-96-8	Acenaphthylene	390	U
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U

030580

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-40-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008492

Sample wt/vol: 28.8 (g/ml) G Lab File ID: SC3D1580.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 10 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	390	U
101-55-3	4-Bromophenyl phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	290	J
120-12-7	Anthracene	40	J
86-74-8	Carbazole	390	U
84-74-2	Di-n-butyl phthalate	390	U
206-44-0	Fluoranthene	600	
129-00-0	Pyrene	530	
85-68-7	Butylbenzylphthalate	56	J
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	260	J
117-81-7	bis(2-Ethylhexyl)phthalate	830	
218-01-9	Chrysene	380	J
117-84-0	Di-n-octyl phthalate	390	U
205-99-2	Benzo(b)fluoranthene	460	
207-08-9	Benzo(k)fluoranthene	160	J
50-32-8	Benzo(a)pyrene	260	J
193-39-5	Indeno(1,2,3-cd)pyrene	180	J
53-70-3	Dibenz(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	150	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-45-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008493

Sample wt/vol: 28.6 (g/ml) G Lab File ID: SC3D1461.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 10 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitrosodi-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	390	U
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	390	U
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	390	U
606-20-2	2,6-Dinitrotoluene	390	U
208-96-8	Acenaphthylene	390	U
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-45-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008493

Sample wt/vol: 28.6 (g/ml) G Lab File ID: SC3D1461.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 10 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	390	U
101-55-3	4-Bromophenyl phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	690	
120-12-7	Anthracene	96	J
86-74-8	Carbazole	90	J
84-74-2	Di-n-butyl phthalate	390	U
206-44-0	Fluoranthene	1100	
129-00-0	Pyrene	1000	
85-68-7	Butylbenzylphthalate	390	U
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	420	
117-81-7	bis(2-Ethylhexyl)phthalate	120	J
218-01-9	Chrysene	570	
117-84-0	Di-n-octyl phthalate	390	U
205-99-2	Benzo(b)fluoranthene	760	
207-08-9	Benzo(k)fluoranthene	260	J
50-32-8	Benzo(a)pyrene	480	
193-39-5	Indeno(1,2,3-cd)pyrene	370	J
53-70-3	Dibenz(a,h)anthracene	80	J
191-24-2	Benzo(g,h,i)perylene	310	J

030594

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-46-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008494

Sample wt/vol: 31.3 (g/ml) G Lab File ID: SC3D1462.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 10 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	350	U
111-44-4	bis(2-Chloroethyl)ether	350	U
95-57-8	2-Chlorophenol	350	U
541-73-1	1,3-Dichlorobenzene	350	U
106-46-7	1,4-Dichlorobenzene	350	U
95-50-1	1,2-Dichlorobenzene	350	U
95-48-7	2-Methylphenol	350	U
108-60-1	2,2'-oxybis(1-Chloropropane)	350	U
106-44-5	4-Methylphenol	350	U
621-64-7	N-Nitrosodi-n-propylamine	350	U
67-72-1	Hexachloroethane	350	U
98-95-3	Nitrobenzene	350	U
78-59-1	Isophorone	350	U
88-75-5	2-Nitrophenol	350	U
105-67-9	2,4-Dimethylphenol	350	U
111-91-1	bis(2-Chloroethoxy)methane	350	U
120-83-2	2,4-Dichlorophenol	350	U
120-82-1	1,2,4-Trichlorobenzene	350	U
91-20-3	Naphthalene	350	U
106-47-8	4-Chloroaniline	350	U
87-68-3	Hexachlorobutadiene	350	U
59-50-7	4-Chloro-3-methylphenol	350	U
91-57-6	2-Methylnaphthalene	350	U
77-47-4	Hexachlorocyclopentadiene	350	U
88-06-2	2,4,6-Trichlorophenol	350	U
95-95-4	2,4,5-Trichlorophenol	1800	U
91-58-7	2-Chloronaphthalene	350	U
88-74-4	2-Nitroaniline	1800	U
131-11-3	Dimethylphthalate	350	U
606-20-2	2,6-Dinitrotoluene	350	U
208-96-8	Acenaphthylene	48	J
99-09-2	3-Nitroaniline	1800	U
83-32-9	Acenaphthene	350	U
51-28-5	2,4-Dinitrophenol	1800	U
100-02-7	4-Nitrophenol	1800	U
132-64-9	Dibenzofuran	350	U
121-14-2	2,4-Dinitrotoluene	350	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-46-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008494

Sample wt/vol: 31.3 (g/ml) G Lab File ID: SC3D1462.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 10 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	350	U
7005-72-3	4-Chlorophenyl phenylether	350	U
86-73-7	Fluorene	350	U
100-01-6	4-Nitroaniline	1800	U
534-52-1	4,6-Dinitro-2-methylphenol	1800	U
86-30-6	N-Nitrosodiphenylamine(1)	350	U
101-55-3	4-Bromophenyl phenylether	350	U
118-74-1	Hexachlorobenzene	350	U
87-86-5	Pentachlorophenol	1800	U
85-01-8	Phenanthrene	280	J
120-12-7	Anthracene	51	J
86-74-8	Carbazole	350	U
84-74-2	Di-n-butyl phthalate	350	U
206-44-0	Fluoranthene	420	
129-00-0	Pyrene	550	
85-68-7	Butylbenzylphthalate	350	U
91-94-1	3,3'-Dichlorobenzidine	350	U
56-55-3	Benzo(a)anthracene	270	J
117-81-7	bis(2-Ethylhexyl)phthalate	38	J
218-01-9	Chrysene	330	J
117-84-0	Di-n-octyl phthalate	350	U
205-99-2	Benzo(b)fluoranthene	390	
207-08-9	Benzo(k)fluoranthene	170	J
50-32-8	Benzo(a)pyrene	330	J
193-39-5	Indeno(1,2,3-cd)pyrene	210	J
53-70-3	Dibenz(a,h)anthracene	350	U
191-24-2	Benzo(g,h,i)perylene	200	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-47-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008495

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1463.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 24 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	440	U
111-44-4	bis(2-Chloroethyl)ether	440	U
95-57-8	2-Chlorophenol	440	U
541-73-1	1,3-Dichlorobenzene	440	U
106-46-7	1,4-Dichlorobenzene	440	U
95-50-1	1,2-Dichlorobenzene	440	U
95-48-7	2-Methylphenol	440	U
108-60-1	2,2'-oxybis(1-Chloropropane)	440	U
106-44-5	4-Methylphenol	440	U
621-64-7	N-Nitrosodi-n-propylamine	440	U
67-72-1	Hexachloroethane	440	U
98-95-3	Nitrobenzene	440	U
78-59-1	Isophorone	440	U
88-75-5	2-Nitrophenol	440	U
105-67-9	2,4-Dimethylphenol	440	U
111-91-1	bis(2-Chloroethoxy)methane	440	U
120-83-2	2,4-Dichlorophenol	440	U
120-82-1	1,2,4-Trichlorobenzene	440	U
91-20-3	Naphthalene	85	J
106-47-8	4-Chloroaniline	440	U
87-68-3	Hexachlorobutadiene	440	U
59-50-7	4-Chloro-3-methylphenol	440	U
91-57-6	2-Methylnaphthalene	440	U
77-47-4	Hexachlorocyclopentadiene	440	U
88-06-2	2,4,6-Trichlorophenol	440	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	440	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethylphthalate	440	U
606-20-2	2,6-Dinitrotoluene	440	U
208-96-8	Acenaphthylene	53	J
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	440	U
51-28-5	2,4-Dinitrophenol	2200	U
100-02-7	4-Nitrophenol	2200	U
132-64-9	Dibenzofuran	440	U
121-14-2	2,4-Dinitrotoluene	440	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-47-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008495

Sample wt/vol: 29.9 (g/ml) G Lab File ID: SC3D1463.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 24 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	440	U
7005-72-3	4-Chlorophenyl phenylether	440	U
86-73-7	Fluorene	52	J
100-01-6	4-Nitroaniline	2200	U
534-52-1	4,6-Dinitro-2-methylphenol	2200	U
86-30-6	N-Nitrosodiphenylamine(1)	440	U
101-55-3	4-Bromophenyl phenylether	440	U
118-74-1	Hexachlorobenzene	440	U
87-86-5	Pentachlorophenol	2200	U
85-01-8	Phenanthrene	500	
120-12-7	Anthracene	140	J
86-74-8	Carbazole	46	J
84-74-2	Di-n-butyl phthalate	440	U
206-44-0	Fluoranthene	750	
129-00-0	Pyrene	810	
85-68-7	Butylbenzylphthalate	440	U
91-94-1	3,3'-Dichlorobenzidine	440	U
56-55-3	Benzo(a)anthracene	440	
117-81-7	bis(2-Ethylhexyl)phthalate	210	J
218-01-9	Chrysene	530	
117-84-0	Di-n-octyl phthalate	440	U
205-99-2	Benzo(b)fluoranthene	670	
207-08-9	Benzo(k)fluoranthene	250	J
50-32-8	Benzo(a)pyrene	480	
193-39-5	Indeno(1,2,3-cd)pyrene	400	J
53-70-3	Dibenz(a,h)anthracene	440	U
191-24-2	Benzo(g,h,i)perylene	340	J

1B

EPA SAMPLE NO.

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

FLA-SS-48-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008496

Sample wt/vol: 29.5 (g/ml) G Lab File ID: SC3D1464.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 19 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	420	U
111-44-4	bis(2-Chloroethyl)ether	420	U
95-57-8	2-Chlorophenol	420	U
541-73-1	1,3-Dichlorobenzene	420	U
106-46-7	1,4-Dichlorobenzene	420	U
95-50-1	1,2-Dichlorobenzene	420	U
95-48-7	2-Methylphenol	420	U
108-60-1	2,2'-oxybis(1-Chloropropane)	420	U
106-44-5	4-Methylphenol	420	U
621-64-7	N-Nitrosodi-n-propylamine	420	U
67-72-1	Hexachloroethane	420	U
98-95-3	Nitrobenzene	420	U
78-59-1	Isophorone	420	U
88-75-5	2-Nitrophenol	420	U
105-67-9	2,4-Dimethylphenol	420	U
111-91-1	bis(2-Chloroethoxy)methane	420	U
120-83-2	2,4-Dichlorophenol	420	U
120-82-1	1,2,4-Trichlorobenzene	420	U
91-20-3	Naphthalene	160	J
106-47-8	4-Chloroaniline	420	U
87-68-3	Hexachlorobutadiene	420	U
59-50-7	4-Chloro-3-methylphenol	420	U
91-57-6	2-Methylnaphthalene	57	J
77-47-4	Hexachlorocyclopentadiene	420	U
88-06-2	2,4,6-Trichlorophenol	420	U
95-95-4	2,4,5-Trichlorophenol	2100	U
91-58-7	2-Chloronaphthalene	420	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethylphthalate	420	U
606-20-2	2,6-Dinitrotoluene	420	U
208-96-8	Acenaphthylene	47	J
99-09-2	3-Nitroaniline	2100	U
83-32-9	Acenaphthene	130	J
51-28-5	2,4-Dinitrophenol	2100	U
100-02-7	4-Nitrophenol	2100	U
132-64-9	Dibenzofuran	49	J
121-14-2	2,4-Dinitrotoluene	420	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-48-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008496

Sample wt/vol: 29.5 (g/ml) G Lab File ID: SC3D1464.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 19 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	420	U
7005-72-3	4-Chlorophenyl phenylether	420	U
86-73-7	Fluorene	92	J
100-01-6	4-Nitroaniline	2100	U
534-52-1	4,6-Dinitro-2-methylphenol	2100	U
86-30-6	N-Nitrosodiphenylamine(1)	420	U
101-55-3	4-Bromophenyl phenylether	420	U
118-74-1	Hexachlorobenzene	420	U
87-86-5	Pentachlorophenol	2100	U
85-01-8	Phenanthrene	940	
120-12-7	Anthracene	230	J
86-74-8	Carbazole	120	J
84-74-2	Di-n-butyl phthalate	43	J
206-44-0	Fluoranthene	1200	
129-00-0	Pyrene	1400	
85-68-7	Butylbenzylphthalate	420	U
91-94-1	3,3'-Dichlorobenzidine	420	U
56-55-3	Benzo(a)anthracene	770	
117-81-7	bis(2-Ethylhexyl)phthalate	98	J
218-01-9	Chrysene	810	
117-84-0	Di-n-octyl phthalate	420	U
205-99-2	Benzo(b)fluoranthene	1100	
207-08-9	Benzo(k)fluoranthene	430	
50-32-8	Benzo(a)pyrene	870	
193-39-5	Indeno(1,2,3-cd)pyrene	700	
53-70-3	Dibenz(a,h)anthracene	180	J
191-24-2	Benzo(g,h,i)perylene	630	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-48-22

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008497

Sample wt/vol: 29.4 (g/ml) G Lab File ID: SC3D1465.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 16 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	400	U
111-44-4	bis(2-Chloroethyl)ether	400	U
95-57-8	2-Chlorophenol	400	U
541-73-1	1,3-Dichlorobenzene	400	U
106-46-7	1,4-Dichlorobenzene	400	U
95-50-1	1,2-Dichlorobenzene	400	U
95-48-7	2-Methylphenol	400	U
108-60-1	2,2'-oxybis(1-Chloropropane)	400	U
106-44-5	4-Methylphenol	400	U
621-64-7	N-Nitrosodi-n-propylamine	400	U
67-72-1	Hexachloroethane	400	U
98-95-3	Nitrobenzene	400	U
78-59-1	Isophorone	400	U
88-75-5	2-Nitrophenol	400	U
105-67-9	2,4-Dimethylphenol	400	U
111-91-1	bis(2-Chloroethoxy)methane	400	U
120-83-2	2,4-Dichlorophenol	400	U
120-82-1	1,2,4-Trichlorobenzene	400	U
91-20-3	Naphthalene	140	J
106-47-8	4-Chloroaniline	400	U
87-68-3	Hexachlorobutadiene	400	U
59-50-7	4-Chloro-3-methylphenol	400	U
91-57-6	2-Methylnaphthalene	57	J
77-47-4	Hexachlorocyclopentadiene	400	U
88-06-2	2,4,6-Trichlorophenol	400	U
95-95-4	2,4,5-Trichlorophenol	2000	U
91-58-7	2-Chloronaphthalene	400	U
88-74-4	2-Nitroaniline	2000	U
131-11-3	Dimethylphthalate	400	U
606-20-2	2,6-Dinitrotoluene	400	U
208-96-8	Acenaphthylene	400	U
99-09-2	3-Nitroaniline	2000	U
83-32-9	Acenaphthene	81	J
51-28-5	2,4-Dinitrophenol	2000	U
100-02-7	4-Nitrophenol	2000	U
132-64-9	Dibenzofuran	47	J
121-14-2	2,4-Dinitrotoluene	400	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-48-22

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008497

Sample wt/vol: 29.4 (g/ml) G Lab File ID: SC3D1465.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 16 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	400	U
7005-72-3	4-Chlorophenyl phenylether	400	U
86-73-7	Fluorene	85	J
100-01-6	4-Nitroaniline	2000	U
534-52-1	4,6-Dinitro-2-methylphenol	2000	U
86-30-6	N-Nitrosodiphenylamine(1)	400	U
101-55-3	4-Bromophenyl phenylether	400	U
118-74-1	Hexachlorobenzene	400	U
87-86-5	Pentachlorophenol	2000	U
85-01-8	Phenanthrene	1000	
120-12-7	Anthracene	240	J
86-74-8	Carbazole	140	J
84-74-2	Di-n-butyl phthalate	53	J
206-44-0	Fluoranthene	1200	
129-00-0	Pyrene	1500	
85-68-7	Butylbenzylphthalate	400	U
91-94-1	3,3'-Dichlorobenzidine	400	U
56-55-3	Benzo(a)anthracene	790	
117-81-7	bis(2-Ethylhexyl)phthalate	72	J
218-01-9	Chrysene	880	
117-84-0	Di-n-octyl phthalate	400	U
205-99-2	Benzo(b)fluoranthene	1000	
207-08-9	Benzo(k)fluoranthene	390	J
50-32-8	Benzo(a)pyrene	830	
193-39-5	Indeno(1,2,3-cd)pyrene	590	
53-70-3	Dibenz(a,h)anthracene	170	J
191-24-2	Benzo(g,h,i)perylene	530	

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-49-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008498

Sample wt/vol: 30.2 (g/ml) G Lab File ID: SC3D1466.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 23 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitrosodi-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	110	J
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	53	J
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethylphthalate	430	U
606-20-2	2,6-Dinitrotoluene	430	U
208-96-8	Acenaphthylene	52	J
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2200	U
100-02-7	4-Nitrophenol	2200	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-49-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008498

Sample wt/vol: 30.2 (g/ml) G Lab File ID: SC3D1466.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 23 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenyl phenylether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	2200	U
534-52-1	4,6-Dinitro-2-methylphenol	2200	U
86-30-6	N-Nitrosodiphenylamine(1)	430	U
101-55-3	4-Bromophenyl phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2200	U
85-01-8	Phenanthrene	280	J
120-12-7	Anthracene	86	J
86-74-8	Carbazole	430	U
84-74-2	Di-n-butyl phthalate	430	U
206-44-0	Fluoranthene	460	
129-00-0	Pyrene	550	
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	320	J
117-81-7	bis(2-Ethylhexyl)phthalate	110	J
218-01-9	Chrysene	380	J
117-84-0	Di-n-octyl phthalate	430	U
205-99-2	Benzo(b)fluoranthene	540	
207-08-9	Benzo(k)fluoranthene	190	J
50-32-8	Benzo(a)pyrene	390	J
193-39-5	Indeno(1,2,3-cd)pyrene	300	J
53-70-3	Dibenz(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	260	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-50-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008499

Sample wt/vol: 30.1 (g/ml) G Lab File ID: SC3D1467.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 22 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitrosodi-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	150	J
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	88	J
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	2100	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2100	U
131-11-3	Dimethylphthalate	430	U
606-20-2	2,6-Dinitrotoluene	430	U
208-96-8	Acenaphthylene	430	U
99-09-2	3-Nitroaniline	2100	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2100	U
100-02-7	4-Nitrophenol	2100	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-50-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008499

Sample wt/vol: 30.1 (g/ml) G Lab File ID: SC3D1467.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 22 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenyl phenylether	430	U
86-73-7	Fluorene	430	U
100-01-6	4-Nitroaniline	2100	U
534-52-1	4,6-Dinitro-2-methylphenol	2100	U
86-30-6	N-Nitrosodiphenylamine(1)	430	U
101-55-3	4-Bromophenyl phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2100	U
85-01-8	Phenanthrene	260	J
120-12-7	Anthracene	72	J
86-74-8	Carbazole	430	U
84-74-2	Di-n-butyl phthalate	430	U
206-44-0	Fluoranthene	410	J
129-00-0	Pyrene	580	
85-68-7	Butylbenzylphthalate	430	U
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	310	J
117-81-7	bis(2-Ethylhexyl)phthalate	110	J
218-01-9	Chrysene	350	J
117-84-0	Di-n-octyl phthalate	430	U
205-99-2	Benzo(b)fluoranthene	400	J
207-08-9	Benzo(k)fluoranthene	190	J
50-32-8	Benzo(a)pyrene	360	J
193-39-5	Indeno(1,2,3-cd)pyrene	260	J
53-70-3	Dibenz(a,h)anthracene	430	U
191-24-2	Benzo(g,h,i)perylene	310	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-51-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008500

Sample wt/vol: 30.2 (g/ml) G Lab File ID: SC3D1565.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 23 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	430	U
111-44-4	bis(2-Chloroethyl)ether	430	U
95-57-8	2-Chlorophenol	430	U
541-73-1	1,3-Dichlorobenzene	430	U
106-46-7	1,4-Dichlorobenzene	430	U
95-50-1	1,2-Dichlorobenzene	430	U
95-48-7	2-Methylphenol	430	U
108-60-1	2,2'-oxybis(1-Chloropropane)	430	U
106-44-5	4-Methylphenol	430	U
621-64-7	N-Nitrosodi-n-propylamine	430	U
67-72-1	Hexachloroethane	430	U
98-95-3	Nitrobenzene	430	U
78-59-1	Isophorone	430	U
88-75-5	2-Nitrophenol	430	U
105-67-9	2,4-Dimethylphenol	430	U
111-91-1	bis(2-Chloroethoxy)methane	430	U
120-83-2	2,4-Dichlorophenol	430	U
120-82-1	1,2,4-Trichlorobenzene	430	U
91-20-3	Naphthalene	65	J
106-47-8	4-Chloroaniline	430	U
87-68-3	Hexachlorobutadiene	430	U
59-50-7	4-Chloro-3-methylphenol	430	U
91-57-6	2-Methylnaphthalene	83	J
77-47-4	Hexachlorocyclopentadiene	430	U
88-06-2	2,4,6-Trichlorophenol	430	U
95-95-4	2,4,5-Trichlorophenol	2200	U
91-58-7	2-Chloronaphthalene	430	U
88-74-4	2-Nitroaniline	2200	U
131-11-3	Dimethylphthalate	430	U
606-20-2	2,6-Dinitrotoluene	430	U
208-96-8	Acenaphthylene	47	J
99-09-2	3-Nitroaniline	2200	U
83-32-9	Acenaphthene	430	U
51-28-5	2,4-Dinitrophenol	2200	U
100-02-7	4-Nitrophenol	2200	U
132-64-9	Dibenzofuran	430	U
121-14-2	2,4-Dinitrotoluene	430	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-51-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008500

Sample wt/vol: 30.2 (g/ml) G Lab File ID: SC3D1565.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 23 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/11/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	430	U
7005-72-3	4-Chlorophenyl phenylether	430	U
86-73-7	Fluorene	55	J
100-01-6	4-Nitroaniline	2200	U
534-52-1	4,6-Dinitro-2-methylphenol	2200	U
86-30-6	N-Nitrosodiphenylamine(1)	430	U
101-55-3	4-Bromophenyl phenylether	430	U
118-74-1	Hexachlorobenzene	430	U
87-86-5	Pentachlorophenol	2200	U
85-01-8	Phenanthrene	700	
120-12-7	Anthracene	140	J
86-74-8	Carbazole	98	J
84-74-2	Di-n-butyl phthalate	430	U
206-44-0	Fluoranthene	1100	
129-00-0	Pyrene	1100	
85-68-7	Butylbenzylphthalate	73	J
91-94-1	3,3'-Dichlorobenzidine	430	U
56-55-3	Benzo(a)anthracene	540	
117-81-7	bis(2-Ethylhexyl)phthalate	1800	
218-01-9	Chrysene	660	
117-84-0	Di-n-octyl phthalate	430	U
205-99-2	Benzo(b)fluoranthene	830	
207-08-9	Benzo(k)fluoranthene	270	J
50-32-8	Benzo(a)pyrene	550	
193-39-5	Indeno(1,2,3-cd)pyrene	420	J
53-70-3	Dibenz(a,h)anthracene	110	J
191-24-2	Benzo(g,h,i)perylene	430	J

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-52-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008501

Sample wt/vol: 31.5 (g/ml) G Lab File ID: SC3D1443.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 18 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/02/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
108-95-2	Phenol	390	U
111-44-4	bis(2-Chloroethyl)ether	390	U
95-57-8	2-Chlorophenol	390	U
541-73-1	1,3-Dichlorobenzene	390	U
106-46-7	1,4-Dichlorobenzene	390	U
95-50-1	1,2-Dichlorobenzene	390	U
95-48-7	2-Methylphenol	390	U
108-60-1	2,2'-oxybis(1-Chloropropane)	390	U
106-44-5	4-Methylphenol	390	U
621-64-7	N-Nitrosodi-n-propylamine	390	U
67-72-1	Hexachloroethane	390	U
98-95-3	Nitrobenzene	390	U
78-59-1	Isophorone	390	U
88-75-5	2-Nitrophenol	390	U
105-67-9	2,4-Dimethylphenol	390	U
111-91-1	bis(2-Chloroethoxy)methane	390	U
120-83-2	2,4-Dichlorophenol	390	U
120-82-1	1,2,4-Trichlorobenzene	390	U
91-20-3	Naphthalene	44	J
106-47-8	4-Chloroaniline	390	U
87-68-3	Hexachlorobutadiene	390	U
59-50-7	4-Chloro-3-methylphenol	390	U
91-57-6	2-Methylnaphthalene	42	J
77-47-4	Hexachlorocyclopentadiene	390	U
88-06-2	2,4,6-Trichlorophenol	390	U
95-95-4	2,4,5-Trichlorophenol	1900	U
91-58-7	2-Chloronaphthalene	390	U
88-74-4	2-Nitroaniline	1900	U
131-11-3	Dimethylphthalate	390	U
606-20-2	2,6-Dinitrotoluene	390	U
208-96-8	Acenaphthylene	390	U
99-09-2	3-Nitroaniline	1900	U
83-32-9	Acenaphthene	390	U
51-28-5	2,4-Dinitrophenol	1900	U
100-02-7	4-Nitrophenol	1900	U
132-64-9	Dibenzofuran	390	U
121-14-2	2,4-Dinitrotoluene	390	U

030698

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FLA-SS-52-01

Lab Name: STL BALTIMORE Contract:

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

Matrix: (soil/water) SOIL Lab Sample ID: 0008501

Sample wt/vol: 31.5 (g/ml) G Lab File ID: SC3D1443.D

Level: (low/med) LOW Date Received: 07/24/00

% Moisture: 18 decanted:(Y/N) N Date Extracted: 07/26/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/02/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
84-66-2	Diethylphthalate	390	U
7005-72-3	4-Chlorophenyl phenylether	390	U
86-73-7	Fluorene	390	U
100-01-6	4-Nitroaniline	1900	U
534-52-1	4,6-Dinitro-2-methylphenol	1900	U
86-30-6	N-Nitrosodiphenylamine(1)	390	U
101-55-3	4-Bromophenyl phenylether	390	U
118-74-1	Hexachlorobenzene	390	U
87-86-5	Pentachlorophenol	1900	U
85-01-8	Phenanthrene	330	J
120-12-7	Anthracene	68	J
86-74-8	Carbazole	42	J
84-74-2	Di-n-butyl phthalate	390	U
206-44-0	Fluoranthene	450	
129-00-0	Pyrene	730	
85-68-7	Butylbenzylphthalate	61	J
91-94-1	3,3'-Dichlorobenzidine	390	U
56-55-3	Benzo(a)anthracene	260	J
117-81-7	bis(2-Ethylhexyl)phthalate	450	
218-01-9	Chrysene	360	J
117-84-0	Di-n-octyl phthalate	390	U
205-99-2	Benzo(b)fluoranthene	460	
207-08-9	Benzo(k)fluoranthene	160	J
50-32-8	Benzo(a)pyrene	290	J
193-39-5	Indeno(1,2,3-cd)pyrene	240	J
53-70-3	Dibenz(a,h)anthracene	390	U
191-24-2	Benzo(g,h,i)perylene	240	J

030699

1B

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-35-44

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008487

Sample wt/vol: 1035 (g/ml) ML Lab File ID: SB2D0937.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
108-95-2	Phenol	9.7	U
111-44-4	bis(2-Chloroethyl)ether	9.7	U
95-57-8	2-Chlorophenol	9.7	U
541-73-1	1,3-Dichlorobenzene	9.7	U
106-46-7	1,4-Dichlorobenzene	9.7	U
95-50-1	1,2-Dichlorobenzene	9.7	U
95-48-7	2-Methylphenol	9.7	U
108-60-1	2,2'-oxybis(1-Chloropropane)	9.7	U
106-44-5	4-Methylphenol	9.7	U
621-64-7	N-Nitrosodi-n-propylamine	9.7	U
67-72-1	Hexachloroethane	9.7	U
98-95-3	Nitrobenzene	9.7	U
78-59-1	Isophorone	9.7	U
88-75-5	2-Nitrophenol	9.7	U
105-67-9	2,4-Dimethylphenol	9.7	U
111-91-1	bis(2-Chloroethoxy)methane	9.7	U
120-83-2	2,4-Dichlorophenol	9.7	U
120-82-1	1,2,4-Trichlorobenzene	9.7	U
91-20-3	Naphthalene	9.7	U
106-47-8	4-Chloroaniline	19	U
87-68-3	Hexachlorobutadiene	9.7	U
59-50-7	4-Chloro-3-methylphenol	9.7	U
91-57-6	2-Methylnaphthalene	9.7	U
77-47-4	Hexachlorocyclopentadiene	9.7	U
88-06-2	2,4,6-Trichlorophenol	9.7	U
95-95-4	2,4,5-Trichlorophenol	48	U
91-58-7	2-Chloronaphthalene	9.7	U
88-74-4	2-Nitroaniline	48	U
131-11-3	Dimethylphthalate	9.7	U
606-20-2	2,6-Dinitrotoluene	9.7	U
208-96-8	Acenaphthylene	9.7	U
99-09-2	3-Nitroaniline	48	U
83-32-9	Acenaphthene	9.7	U
51-28-5	2,4-Dinitrophenol	48	U
100-02-7	4-Nitrophenol	48	U
132-64-9	Dibenzofuran	9.7	U
121-14-2	2,4-Dinitrotoluene	9.7	U

1C

SEMIVOLATILE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

FSS-SS-35-44

Lab Name: STL-BALTIMORE Contract:

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

Matrix: (soil/water) WATER Lab Sample ID: 0008487

Sample wt/vol: 1035 (g/ml) ML Lab File ID: SB2D0937.D

Level: (low/med) LOW Date Received: 07/25/00

% Moisture: decanted:(Y/N) N Date Extracted: 07/27/00

Concentrated Extract Volume: 1000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH:

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
84-66-2	Diethylphthalate	9.7	U
7005-72-3	4-Chlorophenyl phenylether	9.7	U
86-73-7	Fluorene	9.7	U
100-01-6	4-Nitroaniline	48	U
534-52-1	4,6-Dinitro-2-methylphenol	48	U
86-30-6	N-Nitrosodiphenylamine(1)	9.7	U
101-55-3	4-Bromophenyl phenylether	9.7	U
118-74-1	Hexachlorobenzene	9.7	U
87-86-5	Pentachlorophenol	48	U
85-01-8	Phenanthrene	9.7	U
120-12-7	Anthracene	9.7	U
86-74-8	Carbazole	9.7	U
84-74-2	Di-n-butyl phthalate	9.7	U
206-44-0	Fluoranthene	9.7	U
129-00-0	Pyrene	9.7	U
85-68-7	Butylbenzylphthalate	9.7	U
91-94-1	3,3'-Dichlorobenzidine	19	U
56-55-3	Benzo(a)anthracene	9.7	U
117-81-7	bis(2-Ethylhexyl)phthalate	9.7	U
218-01-9	Chrysene	9.7	U
117-84-0	Di-n-octyl phthalate	9.7	U
205-99-2	Benzo(b)fluoranthene	9.7	U
207-08-9	Benzo(k)fluoranthene	9.7	U
50-32-8	Benzo(a)pyrene	9.7	U
193-39-5	Indeno(1,2,3-cd)pyrene	9.7	U
53-70-3	Dibenz(a,h)anthracene	9.7	U
191-24-2	Benzo(g,h,i)perylene	9.7	U

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

624-SS-53-01

Lab Name: STL-Baltimore Contract: Ft. Totten

Lab Code: Case No.: 000955 SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0008502

Sample wt/vol: 29.5 (g/ml) G Lab File ID: 678FABSU.D

% Moisture: 38 decanted:(Y/N) N Date Received: 07/25/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/28/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/08/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.7	U
58-89-9	gamma-BHC	5.2	P
76-44-8	Heptachlor	2.7	U
309-00-2	Aldrin	2.7	U
319-85-7	beta-BHC	2.7	U
319-86-8	delta-BHC	2.7	U
1024-57-3	Heptachlor Epoxide	31	
959-98-8	Endosulfan I	2.7	U
5103-74-2	gamma-Chlordane	8.7	P
5103-71-9	alpha-Chlordane	2.7	U
72-55-9	4,4'-DDE	44	P
60-57-1	Dieldrin	5.5	U
72-20-8	Endrin	5.5	U
33213-65-9	Endosulfan II	5.5	U
72-54-8	4,4'-DDD	71	P
50-29-3	4,4'-DDT	470	EP
7421-36-3	Endrin Aldehyde	8.2	P
1031-07-8	Endosulfan Sulfate	5.5	U
72-43-5	Methoxychlor	27	U
53494-70-5	Endrin Ketone	32	P
12674-11-2	Aroclor-1016	55	U
11104-28-2	Aroclor-1221	110	U
11141-16-5	Aroclor-1232	55	U
53469-21-9	Aroclor-1242	55	U
12672-29-6	Aroclor-1248	55	U
11097-69-1	Aroclor-1254	55	U
11096-82-5	Aroclor-1260	55	U
8001-35-2	Toxaphene	270	U

GDM
8-17-00

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

624-SS-53-01DL

Lab Name: STL-Baltimore Contract: Ft. Totten

Lab Code: Case No.: 000955 SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0008502x20

Sample wt/vol: 29.5 (g/ml) G Lab File ID: 845FABSU.D

% Moisture: 38 decanted:(Y/N) N Date Received: 07/25/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/28/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/16/00

Injection Volume: 1.0 (uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	55	U
58-89-9	gamma-BHC	55	U
76-44-8	Heptachlor	55	U
309-00-2	Aldrin	55	U
319-85-7	beta-BHC	55	U
319-86-8	delta-BHC	55	U
1024-57-3	Heptachlor Epoxide	55	U
959-98-8	Endosulfan I	55	U
5103-74-2	gamma-Chlordane	55	U
5103-71-9	alpha-Chlordane	55	U
72-55-9	4,4'-DDE	110	U
60-57-1	Dieldrin	110	U
72-20-8	Endrin	110	U
33213-65-9	Endosulfan II	110	U
72-54-8	4,4'-DDD	110	U
50-29-3	4,4'-DDT	490	
7421-36-3	Endrin Aldehyde	110	U
1031-07-8	Endosulfan Sulfate	110	U
72-43-5	Methoxychlor	550	U
53494-70-5	Endrin Ketone	110	U
12674-11-2	Aroclor-1016	1100	U
11104-28-2	Aroclor-1221	2200	U
11141-16-5	Aroclor-1232	1100	U
53469-21-9	Aroclor-1242	1100	U
12672-29-6	Aroclor-1248	1100	U
11097-69-1	Aroclor-1254	1100	U
11096-82-5	Aroclor-1260	1100	U
8001-35-2	Toxaphene	5500	U

GDM
8-17-00

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

624-SS-54-01

Lab Name: STL-Baltimore Contract: Ft. Totten

Lab Code: Case No.: 000955 SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0008503

Sample wt/vol: 30 (g/ml) G Lab File ID: 677FABSU.D

% Moisture: 22 decanted:(Y/N) N Date Received: 07/25/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/28/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/08/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.1	U
58-89-9	gamma-BHC	3.2	
76-44-8	Heptachlor	2.1	U
309-00-2	Aldrin	2.1	U
319-85-7	beta-BHC	2.1	U
319-86-8	delta-BHC	2.1	U
1024-57-3	Heptachlor Epoxide	16	
959-98-8	Endosulfan I	2.1	U
5103-74-2	gamma-Chlordane	2.1	U
5103-71-9	alpha-Chlordane	2.1	U
72-55-9	4,4'-DDE	22	P
60-57-1	Dieldrin	4.3	U
72-20-8	Endrin	4.3	U
33213-65-9	Endosulfan II	4.3	U
72-54-8	4,4'-DDD	20	P
50-29-3	4,4'-DDT	240	EP
7421-36-3	Endrin Aldehyde	4.3	U
1031-07-8	Endosulfan Sulfate	4.3	U
72-43-5	Methoxychlor	21	U
53494-70-5	Endrin Ketone	13	P
12674-11-2	Aroclor-1016	43	U
11104-28-2	Aroclor-1221	85	U
11141-16-5	Aroclor-1232	43	U
53469-21-9	Aroclor-1242	43	U
12672-29-6	Aroclor-1248	43	U
11097-69-1	Aroclor-1254	43	U
11096-82-5	Aroclor-1260	43	U
8001-35-2	Toxaphene	210	U

GDM
8-17-00

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

624-SS-54-01DL

Lab Name: STL-Baltimore Contract: Ft. Totten

Lab Code: Case No.: 000955 SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0008503x20

Sample wt/vol: 30 (g/ml) G Lab File ID: 846FABSU.D

% Moisture: 22 decanted:(Y/N) N Date Received: 07/25/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/28/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/16/00

Injection Volume: 1.0 (uL) Dilution Factor: 20.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	43	U
58-89-9	gamma-BHC	43	U
76-44-8	Heptachlor	43	U
309-00-2	Aldrin	43	U
319-85-7	beta-BHC	43	U
319-86-8	delta-BHC	43	U
1024-57-3	Heptachlor Epoxide	43	U
959-98-8	Endosulfan I	43	U
5103-74-2	gamma-Chlordane	43	U
5103-71-9	alpha-Chlordane	43	U
72-55-9	4,4'-DDE	85	U
60-57-1	Dieldrin	85	U
72-20-8	Endrin	85	U
33213-65-9	Endosulfan II	85	U
72-54-8	4,4'-DDD	85	U
50-29-3	4,4'-DDT	210	
7421-36-3	Endrin Aldehyde	85	U
1031-07-8	Endosulfan Sulfate	85	U
72-43-5	Methoxychlor	430	U
53494-70-5	Endrin Ketone	85	U
12674-11-2	Aroclor-1016	850	U
11104-28-2	Aroclor-1221	1700	U
11141-16-5	Aroclor-1232	850	U
53469-21-9	Aroclor-1242	850	U
12672-29-6	Aroclor-1248	850	U
11097-69-1	Aroclor-1254	850	U
11096-82-5	Aroclor-1260	850	U
8001-35-2	Toxaphene	4300	U

(DM 8-17-00

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

625-SS-55-01

Lab Name: STL-Baltimore Contract: Ft. Totten

Lab Code: Case No.: 000955 SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0008505

Sample wt/vol: 30.8 (g/ml) G Lab File ID: 619FABSU.D

% Moisture: 27 decanted:(Y/N) N Date Received: 07/25/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/28/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/05/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.2	U
58-89-9	gamma-BHC	2.2	U
76-44-8	Heptachlor	2.2	U
309-00-2	Aldrin	5.0	P
319-85-7	beta-BHC	2.2	U
319-86-8	delta-BHC	3.3	P
1024-57-3	Heptachlor Epoxide	18	P
959-98-8	Endosulfan I	2.2	U
5103-74-2	gamma-Chlordane	2.2	U
5103-71-9	alpha-Chlordane	2.2	U
72-55-9	4,4'-DDE	130	EP
60-57-1	Dieldrin	4.4	U
72-20-8	Endrin	4.4	U
33213-65-9	Endosulfan II	4.4	U
72-54-8	4,4'-DDD	15	P
50-29-3	4,4'-DDT	290	EP
7421-36-3	Endrin Aldehyde	4.4	U
1031-07-8	Endosulfan Sulfate	11	P
72-43-5	Methoxychlor	22	U
53494-70-5	Endrin Ketone	4.4	U
12674-11-2	Aroclor-1016	44	U
11104-28-2	Aroclor-1221	89	U
11141-16-5	Aroclor-1232	44	U
53469-21-9	Aroclor-1242	44	U
12672-29-6	Aroclor-1248	44	U
11097-69-1	Aroclor-1254	44	U
11096-82-5	Aroclor-1260	44	U
8001-35-2	Toxaphene	220	U

GM
8-17-00

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

625-SS-56-01

Lab Name: STL-Baltimore Contract: Ft. Totten

Lab Code: Case No.: 000955 SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0008506

Sample wt/vol: 29 (g/ml) G Lab File ID: 620FABSU.D

% Moisture: 12 decanted:(Y/N) N Date Received: 07/25/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/28/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/05/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	2.0	U
58-89-9	gamma-BHC	2.0	U
76-44-8	Heptachlor	2.0	U
309-00-2	Aldrin	9.5	P
319-85-7	beta-BHC	2.0	U
319-86-8	delta-BHC	2.0	U
1024-57-3	Heptachlor Epoxide	81	E
959-98-8	Endosulfan I	2.0	U
5103-74-2	gamma-Chlordane	2.0	U
5103-71-9	alpha-Chlordane	2.0	U
72-55-9	4,4'-DDE	180	EP
60-57-1	Dieldrin	3.9	U
72-20-8	Endrin	3.9	U
33213-65-9	Endosulfan II	3.9	U
72-54-8	4,4'-DDD	35	P
50-29-3	4,4'-DDT	220	EP
7421-36-3	Endrin Aldehyde	3.9	U
1031-07-8	Endosulfan Sulfate	33	P
72-43-5	Methoxychlor	20	U
53494-70-5	Endrin Ketone	21	
12674-11-2	Aroclor-1016	39	U
11104-28-2	Aroclor-1221	78	U
11141-16-5	Aroclor-1232	39	U
53469-21-9	Aroclor-1242	39	U
12672-29-6	Aroclor-1248	39	U
11097-69-1	Aroclor-1254	39	U
11096-82-5	Aroclor-1260	39	U
8001-35-2	Toxaphene	200	U

GDM
8-17-00

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

609-SS-57-01

Lab Name: STL-Baltimore Contract: Ft. Totten

Lab Code: Case No.: 000955 SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0008507

Sample wt/vol: 29.6 (g/ml) G Lab File ID: 621FABSU.D

% Moisture: 9 decanted:(Y/N) N Date Received: 07/25/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/28/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/05/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
319-84-6	alpha-BHC	1.9	U
58-89-9	gamma-BHC	1.9	U
76-44-8	Heptachlor	1.9	U
309-00-2	Aldrin	1.9	U
319-85-7	beta-BHC	1.9	U
319-86-8	delta-BHC	1.9	U
1024-57-3	Heptachlor Epoxide	2.1	
959-98-8	Endosulfan I	1.9	U
5103-74-2	gamma-Chlordane	1.9	U
5103-71-9	alpha-Chlordane	1.9	U
72-55-9	4,4'-DDE	21	P
60-57-1	Dieldrin	3.7	U
72-20-8	Endrin	3.7	U
33213-65-9	Endosulfan II	3.7	U
72-54-8	4,4'-DDD	3.7	U
50-29-3	4,4'-DDT	16	
7421-36-3	Endrin Aldehyde	3.7	U
1031-07-8	Endosulfan Sulfate	3.7	U
72-43-5	Methoxychlor	19	U
53494-70-5	Endrin Ketone	3.7	U
12674-11-2	Aroclor-1016	37	U
11104-28-2	Aroclor-1221	74	U
11141-16-5	Aroclor-1232	37	U
53469-21-9	Aroclor-1242	37	U
12672-29-6	Aroclor-1248	37	U
11097-69-1	Aroclor-1254	37	U
11096-82-5	Aroclor-1260	37	U
8001-35-2	Toxaphene	190	U

GDM
3-17-00

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

609-SS-58-01

Lab Name: STL-Baltimore Contract: Ft. Totten

Lab Code: Case No.: 000955 SAS No.: SDG No.:

Matrix: (soil/water) SOIL Lab Sample ID: 0008509

Sample wt/vol: 30.8 (g/ml) G Lab File ID: 622FABSU.D

% Moisture: 22 decanted:(Y/N) N Date Received: 07/25/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/28/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/05/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) Y

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/KG	Q
~~319-84-6~~	~~alpha-BHC~~	~~2.1~~	~~U~~
58-89-9	gamma-BHC	2.1	U
76-44-8	Heptachlor	2.1	U
309-00-2	Aldrin	2.1	U
319-85-7	beta-BHC	2.1	U
319-86-8	delta-BHC	2.1	U
1024-57-3	Heptachlor Epoxide	4.5	P
959-98-8	Endosulfan I	2.1	U
5103-74-2	gamma-Chlordane	2.1	U
5103-71-9	alpha-Chlordane	2.1	U
72-55-9	4,4'-DDE	20	P
60-57-1	Dieldrin	20	
72-20-8	Endrin	4.2	U
33213-65-9	Endosulfan II	4.2	U
72-54-8	4,4'-DDD	4.2	U
50-29-3	4,4'-DDT	48	P
7421-36-3	Endrin Aldehyde	4.2	U
1031-07-8	Endosulfan Sulfate	4.2	U
72-43-5	Methoxychlor	21	U
~~53494-70-5~~	~~Endrin Ketone~~	~~4.2~~	~~U~~
12674-11-2	Aroclor-1016	42	U
11104-28-2	Aroclor-1221	83	U
11141-16-5	Aroclor-1232	42	U
53469-21-9	Aroclor-1242	42	U
12672-29-6	Aroclor-1248	42	U
11097-69-1	Aroclor-1254	42	U
11096-82-5	Aroclor-1260	42	U
~~8001-35-2~~	Toxaphene	210	U

GDM
9-17-00

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

624-SS-54-44

Lab Name: STL-Baltimore Contract: Ft. Totten

Lab Code: Case No.: 000955 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008504

Sample wt/vol: 1045 (g/ml) ML Lab File ID: 563FABSU.D

% Moisture: decanted:(Y/N) N Date Received: 07/25/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/28/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
58-89-9	gamma-BHC	0.048	U
76-44-8	Heptachlor	0.048	U
309-00-2	Aldrin	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
1024-57-3	Heptachlor Epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
5103-74-2	gamma-Chlordane	0.048	U
5103-71-9	alpha-Chlordane	0.048	U
72-55-9	4,4'-DDE	0.096	U
60-57-1	Dieldrin	0.096	U
72-20-8	Endrin	0.096	U
33213-65-9	Endosulfan II	0.096	U
72-54-8	4,4'-DDD	0.096	U
50-29-3	4,4'-DDT	0.096	U
7421-36-3	Endrin Aldehyde	0.096	U
1031-07-8	Endosulfan Sulfate	0.096	U
72-43-5	Methoxychlor	0.48	U
53494-70-5	Endrin Ketone	0.096	U
12674-11-2	Aroclor-1016	0.96	U
11104-28-2	Aroclor-1221	1.9	U
11141-16-5	Aroclor-1232	0.96	U
53469-21-9	Aroclor-1242	0.96	U
12672-29-6	Aroclor-1248	0.96	U
11097-69-1	Aroclor-1254	0.96	U
11096-82-5	Aroclor-1260	0.96	U
8001-35-2	Toxaphene	4.8	U

GDM
8-14-00

050009

1D

PESTICIDE ORGANICS ANALYSIS DATA SHEET

EPA SAMPLE NO.

609-SS-57-44

Lab Name: STL-Baltimore Contract: Ft. Totten

Lab Code: Case No.: 000955 SAS No.: SDG No.:

Matrix: (soil/water) WATER Lab Sample ID: 0008508

Sample wt/vol: 1045 (g/ml) ML Lab File ID: 564FABSU.D

% Moisture: decanted:(Y/N) N Date Received: 07/25/00

Extraction: (SepF/Cont/Sonc) Date Extracted: 07/28/00

Concentrated Extract Volume: 10000 (uL) Date Analyzed: 08/03/00

Injection Volume: 1.0 (uL) Dilution Factor: 1.0

GPC Cleanup: (Y/N) N pH: Sulfur Cleanup: (Y/N) N

CAS NO.	COMPOUND	CONCENTRATION UNITS: (ug/L or ug/Kg) UG/L	Q
319-84-6	alpha-BHC	0.048	U
58-89-9	gamma-BHC	0.048	U
76-44-8	Heptachlor	0.048	U
309-00-2	Aldrin	0.048	U
319-85-7	beta-BHC	0.048	U
319-86-8	delta-BHC	0.048	U
1024-57-3	Heptachlor Epoxide	0.048	U
959-98-8	Endosulfan I	0.048	U
5103-74-2	gamma-Chlordane	0.048	U
5103-71-9	alpha-Chlordane	0.048	U
72-55-9	4,4'-DDE	0.096	U
60-57-1	Dieldrin	0.096	U
72-20-8	Endrin	0.096	U
33213-65-9	Endosulfan II	0.096	U
72-54-8	4,4'-DDD	0.096	U
50-29-3	4,4'-DDT	0.096	U
7421-36-3	Endrin Aldehyde	0.096	U
1031-07-8	Endosulfan Sulfate	0.096	U
72-43-5	Methoxychlor	0.48	U
53494-70-5	Endrin Ketone	0.096	U
12674-11-2	Aroclor-1016	0.96	U
11104-28-2	Aroclor-1221	1.9	U
11141-16-5	Aroclor-1232	0.96	U
53469-21-9	Aroclor-1242	0.96	U
12672-29-6	Aroclor-1248	0.96	U
11097-69-1	Aroclor-1254	0.96	U
11096-82-5	Aroclor-1260	0.96	U
8001-35-2	Toxaphene	4.8	U

GDM
8-14-00

050012

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T08448	FSSSS0101
T08448D	FSSSS0101D
T08448S	FSSSS0101S
T08449	FSSSS0201
T08450	FSSSS0301
T08451	FSSSS0401
T08452	FSSSS0501
T08453	FSSSS0601
T08454	FSSSS0701
T08455	FSSSS0801
T08456	FSSSS0901
T08457	FSSSS1001
T08458	FSSSS1101
T08459	FSSSS1201
T08460	FSSSS1222
T08461	FSSSS1301
T08462	FSSSS1401
T08463	FSSSS1501
T08464	FSSSS1601
T08465	FSSSS1701

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirnon Name: Judy S. Kirnon

Date: 24 August 2000 Title: LAB TECHNICIAN

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client:
Project:

Lab Sample No.	Client ID.
T08466	FSSSS1801
T08467	FSSSS1822

Comments:

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirnon Name: Judy S. Kirnon

Date: 24 August 2000 Title: Lab Technician

36.0005

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08448

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL Client ID: FSSSS0101

Percent Solids: 85.5 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7650		E	P
7440-36-0	Antimony	0.39	B	N	P
7440-38-2	Arsenic	2.9			P
7440-39-3	Barium	121			P
7440-41-7	Beryllium	0.29	B		P
7440-43-9	Cadmium	0.21	B		P
7440-70-2	Calcium	1250		E	P
7440-47-3	Chromium	19.5			P
7440-48-4	Cobalt	6.0			P
7440-50-8	Copper	14.5		E	P
7439-89-6	Iron	11800			P
7439-92-1	Lead	206			P
7439-95-4	Magnesium	1920		E	P
7439-96-5	Manganese	352		F	P
7439-97-6	Mercury	0.06	U		CV
7440-02-0	Nickel	15.0			P
7440-09-7	Potassium	739			P
7782-49-2	Selenium	0.63			P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	118			P
7440-28-0	Thallium	0.14	U		F
7440-62-2	Vanadium	24.2			P
7440-66-6	Zinc	116			P

JF 8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

060004

~~060003~~

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08449

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS0201

Percent Solids: 91.0

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7750		E	P
7440-36-0	Antimony	0.42	B	N	P
7440-38-2	Arsenic	3.4			P
7440-39-3	Barium	80.9			P
7440-41-7	Beryllium	0.29	B		P
7440-43-9	Cadmium	0.16	B		P
7440-70-2	Calcium	1050		E	P
7440-47-3	Chromium	19.9			P
7440-48-4	Cobalt	5.1	B		P
7440-50-8	Copper	21.7		E	P
7439-89-6	Iron	12400			P
7439-92-1	Lead	137			P
7439-95-4	Magnesium	2000		E	P
7439-96-5	Manganese	321		E	P
7439-97-6	Mercury	0.08	B		CV
7440-02-0	Nickel	17.5			P
7440-09-7	Potassium	1060			P
7782-49-2	Selenium	0.47	B		P
7440-22-4	Silver	0.33	U		P
7440-23-5	Sodium	197			P
7440-28-0	Thallium	0.12	U		F
7440-62-2	Vanadium	23.3			P
7440-66-6	Zinc	91.3			P

JB 8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

060005

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08450

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS0301

Percent Solids: 85.7

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8400		E	P
7440-36-0	Antimony	0.34	B	N	P
7440-38-2	Arsenic	4.9			P
7440-39-3	Barium	106			P
7440-41-7	Beryllium	0.30	B		P
7440-43-9	Cadmium	0.41	B		P
7440-70-2	Calcium	1450		E	P
7440-47-3	Chromium	21.5			P
7440-48-4	Cobalt	6.0			P
7440-50-8	Copper	50.9		E	P
7439-89-6	Iron	13300			P
7439-92-1	Lead	235			P
7439-95-4	Magnesium	2080		E	P
7439-96-5	Manganese	335		E	P
7439-97-6	Mercury	0.39			CV
7440-02-0	Nickel	17.5			P
7440-09-7	Potassium	1020			P
7782-49-2	Selenium	0.60			P
7440-22-4	Silver	0.35	U		P
7440-23-5	Sodium	200			P
7440-28-0	Thallium	0.13	U		F
7440-62-2	Vanadium	27.5			P
7440-66-6	Zinc	169			P

8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08451

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS0401

Percent Solids: 88.9

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9990		E	P
7440-36-0	Antimony	0.36	B	N	P
7440-38-2	Arsenic	4.0			P
7440-39-3	Barium	65.9			P
7440-41-7	Beryllium	0.40	B		P
7440-43-9	Cadmium	0.14	B		P
7440-70-2	Calcium	1460		E	P
7440-47-3	Chromium	22.1			P
7440-48-4	Cobalt	6.7			P
7440-50-8	Copper	17.9		E	P
7439-89-6	Iron	15200			P
7439-92-1	Lead	85.8			P
7439-95-4	Magnesium	2370		E	P
7439-96-5	Manganese	419		E	P
7439-97-6	Mercury	0.08	B		CV
7440-02-0	Nickel	18.2			P
7440-09-7	Potassium	1040			P
7782-49-2	Selenium	0.59			P
7440-22-4	Silver	0.34	U		P
7440-23-5	Sodium	147			P
7440-28-0	Thallium	0.13	U		F
7440-62-2	Vanadium	28.3			P
7440-66-6	Zinc	70.2			P

Per 8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08452

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS0501

Percent Solids: 83.6

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8790		E	P
7440-36-0	Antimony	0.41	B	N	P
7440-38-2	Arsenic	7.2			P
7440-39-3	Barium	95.7			P
7440-41-7	Beryllium	0.39	B		P
7440-43-9	Cadmium	0.35	B		P
7440-70-2	Calcium	2060		E	P
7440-47-3	Chromium	21.6			P
7440-48-4	Cobalt	6.3			P
7440-50-8	Copper	24.9		E	P
7439-89-6	Iron	14800			P
7439-92-1	Lead	187			P
7439-95-4	Magnesium	2320		E	P
7439-96-5	Manganese	408		E	P
7439-97-6	Mercury	0.35			CV
7440-02-0	Nickel	15.1			P
7440-09-7	Potassium	1140			P
7782-49-2	Selenium	0.64			P
7440-22-4	Silver	0.33	U		P
7440-23-5	Sodium	155			P
7440-28-0	Thallium	0.14	U		F
7440-62-2	Vanadium	27.4			P
7440-66-6	Zinc	142			P

8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08453

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS0601

Percent Solids: 85.1

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7210		E	P
7440-36-0	Antimony	0.62	B	N	P
7440-38-2	Arsenic	4.5			P
7440-39-3	Barium	87.7			P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium	0.24	B		P
7440-70-2	Calcium	2760		E	P
7440-47-3	Chromium	18.3			P
7440-48-4	Cobalt	5.5	B		P
7440-50-8	Copper	25.9		E	P
7439-89-6	Iron	16300			P
7439-92-1	Lead	172			P
7439-95-4	Magnesium	2230		E	P
7439-96-5	Manganese	332		E	P
7439-97-6	Mercury	0.64			CV
7440-02-0	Nickel	15.9			P
7440-09-7	Potassium	1050			P
7782-49-2	Selenium	0.55	B		P
7440-22-4	Silver	0.18	U		P
7440-23-5	Sodium	161			P
7440-28-0	Thallium	0.14	U		F
7440-62-2	Vanadium	25.9			P
7440-66-6	Zinc	135			P

$ 8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08454

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS0701

Percent Solids: 93.7

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5020		E	P
7440-36-0	Antimony	0.36	B	N	P
7440-38-2	Arsenic	3.8			P
7440-39-3	Barium	57.8			P
7440-41-7	Beryllium	0.20	B		P
7440-43-9	Cadmium	0.21	B		P
7440-70-2	Calcium	1300		E	P
7440-47-3	Chromium	14.9			P
7440-48-4	Cobalt	4.2	B		P
7440-50-8	Copper	22.8		E	P
7439-89-6	Iron	15300			P
7439-92-1	Lead	141			P
7439-95-4	Magnesium	1490		E	P
7439-96-5	Manganese	265		E	P
7439-97-6	Mercury	0.30			CV
7440-02-0	Nickel	13.3			P
7440-09-7	Potassium	831			P
7782-49-2	Selenium	0.48			P
7440-22-4	Silver	0.15	U		P
7440-23-5	Sodium	97.2			P
7440-28-0	Thallium	0.12	U		F
7440-62-2	Vanadium	23.9			P
7440-66-6	Zinc	101			P

8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08455

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS0801

Percent Solids: 93.2

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5470		E	P
7440-36-0	Antimony	0.25	B	N	P
7440-38-2	Arsenic	3.8			P
7440-39-3	Barium	43.8			P
7440-41-7	Beryllium	0.20	B		P
7440-43-9	Cadmium	0.18	B		P
7440-70-2	Calcium	1280		E	P
7440-47-3	Chromium	15.4			P
7440-48-4	Cobalt	4.5	B		P
7440-50-8	Copper	19.5		E	P
7439-89-6	Iron	13600			P
7439-92-1	Lead	117			P
7439-95-4	Magnesium	1730		E	P
7439-96-5	Manganese	229		E	P
7439-97-6	Mercury	0.21			CV
7440-02-0	Nickel	13.0			P
7440-09-7	Potassium	984			P
7782-49-2	Selenium	0.39	B		P
7440-22-4	Silver	0.15	U		P
7440-23-5	Sodium	97.1			P
7440-28-0	Thallium	0.12	U		F
7440-62-2	Vanadium	26.5			P
7440-66-6	Zinc	94.1			P

5/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

060011

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08456

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL Client ID: FSSSS0901

Percent Solids: 85.5 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4900		E	P
7440-36-0	Antimony	0.31	B	N	P
7440-38-2	Arsenic	3.4			P
7440-39-3	Barium	45.1			P
7440-41-7	Beryllium	0.14	B		P
7440-43-9	Cadmium	0.28	B		P
7440-70-2	Calcium	2310		E	P
7440-47-3	Chromium	12.9			P
7440-48-4	Cobalt	3.3	B		P
7440-50-8	Copper	19.0		E	P
7439-89-6	Iron	10700			P
7439-92-1	Lead	93.8			P
7439-95-4	Magnesium	1460		E	P
7439-96-5	Manganese	207		E	P
7439-97-6	Mercury	0.24			CV
7440-02-0	Nickel	11.4			P
7440-09-7	Potassium	851			P
7782-49-2	Selenium	0.69			P
7440-22-4	Silver	0.18	U		P
7440-23-5	Sodium	112	B		P
7440-28-0	Thallium	0.14	U		F
7440-62-2	Vanadium	19.2			P
7440-66-6	Zinc	121			P

8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08457

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL Client ID: FSSSS1001

Percent Solids: 79.9 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6180		E	P
7440-36-0	Antimony	0.77		N	P
7440-38-2	Arsenic	4.2			P
7440-39-3	Barium	85.8			P
7440-41-7	Beryllium	0.21	B		P
7440-43-9	Cadmium	0.47	B		P
7440-70-2	Calcium	3070		E	P
7440-47-3	Chromium	15.0			P
7440-48-4	Cobalt	4.2	B		P
7440-50-8	Copper	28.6		E	P
7439-89-6	Iron	11300			P
7439-92-1	Lead	229			P
7439-95-4	Magnesium	1630		E	P
7439-96-5	Manganese	306		E	P
7439-97-6	Mercury	0.48			CV
7440-02-0	Nickel	12.9			P
7440-09-7	Potassium	1140			P
7782-49-2	Selenium	0.50	B		P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	164			P
7440-28-0	Thallium	0.15	U		F
7440-62-2	Vanadium	20.7			P
7440-66-6	Zinc	155			P

sb 8/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

060013

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08458

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS1101

Percent Solids: 91.1

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6180		E	P
7440-36-0	Antimony	0.23	B	N	P
7440-38-2	Arsenic	3.8			P
7440-39-3	Barium	42.9			P
7440-41-7	Beryllium	0.24	B		P
7440-43-9	Cadmium	0.14	B		P
7440-70-2	Calcium	1190		E	P
7440-47-3	Chromium	14.1			P
7440-48-4	Cobalt	4.5	B		P
7440-50-8	Copper	16.4		E	P
7439-89-6	Iron	12100			P
7439-92-1	Lead	95.4			P
7439-95-4	Magnesium	1600		E	P
7439-96-5	Manganese	317		E	P
7439-97-6	Mercury	0.18			CV
7440-02-0	Nickel	11.6			P
7440-09-7	Potassium	907			P
7782-49-2	Selenium	0.58			P
7440-22-4	Silver	0.17	U		P
7440-23-5	Sodium	108			P
7440-28-0	Thallium	0.13	U		F
7440-62-2	Vanadium	24.3			P
7440-66-6	Zinc	59.4			P

8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08459

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS1201

Percent Solids: 85.8

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5160		E	P
7440-36-0	Antimony	0.34	B	N	P
7440-38-2	Arsenic	4.2			P
7440-39-3	Barium	57.6			P
7440-41-7	Beryllium	0.16	B		P
7440-43-9	Cadmium	0.59			P
7440-70-2	Calcium	5160		E	P
7440-47-3	Chromium	12.7			P
7440-48-4	Cobalt	3.8	B		P
7440-50-8	Copper	28.9		E	P
7439-89-6	Iron	11800			P
7439-92-1	Lead	152			P
7439-95-4	Magnesium	2530		E	P
7439-96-5	Manganese	246		E	P
7439-97-6	Mercury	0.16			CV
7440-02-0	Nickel	13.2			P
7440-09-7	Potassium	945			P
7782-49-2	Selenium	0.73			P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	174			P
7440-28-0	Thallium	0.13	U		F
7440-62-2	Vanadium	22.7			P
7440-66-6	Zinc	129			P

8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08460

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS1222

Percent Solids: 85.0

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4880		E	P
7440-36-0	Antimony	0.46	B	N	P
7440-38-2	Arsenic	4.2			P
7440-39-3	Barium	60.3			P
7440-41-7	Beryllium	0.17	B		P
7440-43-9	Cadmium	0.64			P
7440-70-2	Calcium	4760		E	P
7440-47-3	Chromium	13.4			P
7440-48-4	Cobalt	4.1	B		P
7440-50-8	Copper	31.5		E	P
7439-89-6	Iron	11000			P
7439-92-1	Lead	164			P
7439-95-4	Magnesium	2560		E	P
7439-96-5	Manganese	249		E	P
7439-97-6	Mercury	0.13			CV
7440-02-0	Nickel	12.9			P
7440-09-7	Potassium	933			P
7782-49-2	Selenium	0.55			P
7440-22-4	Silver	0.17	U		P
7440-23-5	Sodium	129			P
7440-28-0	Thallium	0.13	U		F
7440-62-2	Vanadium	23.2			P
7440-66-6	Zinc	133			P

JE 8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08461

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS1301

Percent Solids: 87.1

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6290		E	P
7440-36-0	Antimony	0.49	B	N	P
7440-38-2	Arsenic	19.2			P
7440-39-3	Barium	69.0			P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium	0.64			P
7440-70-2	Calcium	4790		E	P
7440-47-3	Chromium	17.0			P
7440-48-4	Cobalt	5.4			P
7440-50-8	Copper	36.8		E	P
7439-89-6	Iron	13900			P
7439-92-1	Lead	169			P
7439-95-4	Magnesium	3100		E	P
7439-96-5	Manganese	297		E	P
7439-97-6	Mercury	0.12			CV
7440-02-0	Nickel	16.9			P
7440-09-7	Potassium	1360			P
7782-49-2	Selenium	0.60			P
7440-22-4	Silver	0.17	U		P
7440-23-5	Sodium	153			P
7440-28-0	Thallium	0.13	U		F
7440-62-2	Vanadium	30.0			P
7440-66-6	Zinc	144			P

8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

060017

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08462

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS1401

Percent Solids: 84.3

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6390		E	P
7440-36-0	Antimony	0.41	B	N	P
7440-38-2	Arsenic	5.4			P
7440-39-3	Barium	87.9			P
7440-41-7	Beryllium	0.31	B		P
7440-43-9	Cadmium	0.85			P
7440-70-2	Calcium	4710		E	P
7440-47-3	Chromium	15.7			P
7440-48-4	Cobalt	5.2			P
7440-50-8	Copper	32.2		E	P
7439-89-6	Iron	14000			P
7439-92-1	Lead	198			P
7439-95-4	Magnesium	2760		E	P
7439-96-5	Manganese	298		E	P
7439-97-6	Mercury	0.11			CV
7440-02-0	Nickel	15.7			P
7440-09-7	Potassium	1450			P
7782-49-2	Selenium	0.63			P
7440-22-4	Silver	0.33	U		P
7440-23-5	Sodium	175			P
7440-28-0	Thallium	0.14	U		F
7440-62-2	Vanadium	29.1			P
7440-66-6	Zinc	164			P

8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

060018

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08463

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS1501

Percent Solids: 88.2

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5340		E	P
7440-36-0	Antimony	0.23	B	N	P
7440-38-2	Arsenic	4.3			P
7440-39-3	Barium	62.3			P
7440-41-7	Beryllium	0.19	B		P
7440-43-9	Cadmium	0.75			P
7440-70-2	Calcium	5050		E	P
7440-47-3	Chromium	13.5			P
7440-48-4	Cobalt	4.3	B		P
7440-50-8	Copper	32.4		E	P
7439-89-6	Iron	13000			P
7439-92-1	Lead	189			P
7439-95-4	Magnesium	2450		E	P
7439-96-5	Manganese	253		E	P
7439-97-6	Mercury	0.10	B		CV
7440-02-0	Nickel	14.3			P
7440-09-7	Potassium	1000			P
7782-49-2	Selenium	0.71			P
7440-22-4	Silver	0.15	U		P
7440-23-5	Sodium	156			P
7440-28-0	Thallium	0.13	U		F
7440-62-2	Vanadium	26.4			P
7440-66-6	Zinc	131			P

7/27/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08464

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL

Client ID: FSSSS1601

Percent Solids: 86.6

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8100		E	P
7440-36-0	Antimony	0.39	B	N	P
7440-38-2	Arsenic	5.0			P
7440-39-3	Barium	76.9			P
7440-41-7	Beryllium	0.30	B		P
7440-43-9	Cadmium	0.30	B		P
7440-70-2	Calcium	2630		E	P
7440-47-3	Chromium	18.6			P
7440-48-4	Cobalt	5.7			P
7440-50-8	Copper	25.7		E	P
7439-89-6	Iron	16900			P
7439-92-1	Lead	167			P
7439-95-4	Magnesium	2220		E	P
7439-96-5	Manganese	365		E	P
7439-97-6	Mercury	0.21			CV
7440-02-0	Nickel	14.7			P
7440-09-7	Potassium	1220			P
7782-49-2	Selenium	0.82			P
7440-22-4	Silver	0.36	U		P
7440-23-5	Sodium	141			P
7440-28-0	Thallium	0.14	U		F
7440-62-2	Vanadium	29.7			P
7440-66-6	Zinc	150			P

fe 8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

060020

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08465

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL Client ID: FSSSS1701

Percent Solids: 85.1 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7420		E	P
7440-36-0	Antimony	0.37	B	N	P
7440-38-2	Arsenic	9.6			P
7440-39-3	Barium	73.9			P
7440-41-7	Beryllium	0.32	B		P
7440-43-9	Cadmium	0.22	B		P
7440-70-2	Calcium	983		E	P
7440-47-3	Chromium	17.4			P
7440-48-4	Cobalt	4.9	B		P
7440-50-8	Copper	22.9		E	P
7439-89-6	Iron	14000			P
7439-92-1	Lead	129			P
7439-95-4	Magnesium	1710		E	P
7439-96-5	Manganese	364		~~E~~	P 8/24/00
7439-97-6	Mercury	0.37			CV
7440-02-0	Nickel	11.6			P
7440-09-7	Potassium	936			P
7782-49-2	Selenium	0.64			P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	122			P
7440-28-0	Thallium	0.14	U		F
7440-62-2	Vanadium	25.4			P
7440-66-6	Zinc	81.1			P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08466

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL Client ID: FSSSS1801

Percent Solids: 80.0 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7080		E	P
7440-36-0	Antimony	0.57	B	N	P
7440-38-2	Arsenic	2.7			P
7440-39-3	Barium	138			P
7440-41-7	Beryllium	0.27	B		P
7440-43-9	Cadmium	0.32	B		P
7440-70-2	Calcium	2020		E	P
7440-47-3	Chromium	25.3			P
7440-48-4	Cobalt	4.6	B		P
7440-50-8	Copper	43.2		E	P
7439-89-6	Iron	13400			P
7439-92-1	Lead	333			P
7439-95-4	Magnesium	1980		E	P
7439-96-5	Manganese	153		E	P
7439-97-6	Mercury	0.77			CV
7440-02-0	Nickel	15.8			P
7440-09-7	Potassium	816			P
7782-49-2	Selenium	0.65			P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	144			P
7440-28-0	Thallium	0.14	U		F
7440-62-2	Vanadium	23.8			P
7440-66-6	Zinc	111			P

8/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

060022

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08467

Laboratory: STL BALTIMORE

SDG No.: T08448

Matrix: SOIL Client ID: FSSSS1822

Percent Solids: 80.4 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6920		E	P
7440-36-0	Antimony	0.47	B	N	P
7440-38-2	Arsenic	2.6			P
7440-39-3	Barium	125			P
7440-41-7	Beryllium	0.25	B		P
7440-43-9	Cadmium	0.31	B		P
7440-70-2	Calcium	2220		E	P
7440-47-3	Chromium	28.1			P
7440-48-4	Cobalt	4.8	B		P
7440-50-8	Copper	38.0		E	P
7439-89-6	Iron	13200			P
7439-92-1	Lead	292			P
7439-95-4	Magnesium	2060		E	P
7439-96-5	Manganese	352		E	P
7439-97-6	Mercury	0.66			CV
7440-02-0	Nickel	17.4			P
7440-09-7	Potassium	925			P
7782-49-2	Selenium	0.55			P
7440-22-4	Silver	0.17	U		P
7440-23-5	Sodium	140			P
7440-28-0	Thallium	0.13	U		F
7440-62-2	Vanadium	23.6			P
7440-66-6	Zinc	103			P

5/24/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T08468	FSSSS1901
T08468D	FSSSS1901D
T08468S	FSSSS1901S
T08469	FSSSS2001
T08470	FSSSS2101
T08471	FSSSS2201
T08472	FSSSS2301
T08473	FSSSS2401
T08474	FSSSS2422
T08475	FSSSS2501
T08476	FSSSS2601
T08477	FSSSS2701
T08478	FSSSS2801
T08479	FSSSS2901
T08480	FSSSS3001
T08481	FSSSS3101
T08482	FSSSS3201
T08483	FSSSS3301
T08484	FSSSS3401
T08485	FSSSS3501

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Wendy C VanMiddlesworth Name: Wendy C VanMiddlesworth

Date: 9/1/00 Title: Chemist III

0700002

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T08486	FSSSS3522

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Wendy C Van Middlesworth Name: Wendy C Van Middlesworth

Date: 9/1/00 Title: Chemist III

070003

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08468

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL Client ID: FSSSS1901

Percent Solids: 83.7 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8840			P
7440-36-0	Antimony	0.67	B	N	P
7440-38-2	Arsenic	3.6			P
7440-39-3	Barium	132			P
7440-41-7	Beryllium	0.36	B		P
7440-43-9	Cadmium	0.23	B		P
7440-70-2	Calcium	1990			P
7440-47-3	Chromium	22.8			P
7440-48-4	Cobalt	6.1			P
7440-50-8	Copper	50.9			P
7439-89-6	Iron	15600			P
7439-92-1	Lead	344			P
7439-95-4	Magnesium	2550		E	P
7439-96-5	Manganese	199		N	P
7439-97-6	Mercury	0.85			CV
7440-02-0	Nickel	16.7			P
7440-09-7	Potassium	799			P
7782-49-2	Selenium	0.47	B		P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	224			P
7440-28-0	Thallium	0.18	U		F
7440-62-2	Vanadium	33.8			P
7440-66-6	Zinc	219		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070004

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08469

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS2001

Percent Solids: 86.7

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7740			P
7440-36-0	Antimony	1.0		N	P
7440-38-2	Arsenic	4.5			P
7440-39-3	Barium	124			P
7440-41-7	Beryllium	0.32	B		P
7440-43-9	Cadmium	0.27	B		P
7440-70-2	Calcium	2160			P
7440-47-3	Chromium	19.0			P
7440-48-4	Cobalt	6.6			P
7440-50-8	Copper	46.2			P
7439-89-6	Iron	16400			P
7439-92-1	Lead	400			P
7439-95-4	Magnesium	2300		E	P
7439-96-5	Manganese	348		N	P
7439-97-6	Mercury	0.83			CV
7440-02-0	Nickel	16.2			P
7440-09-7	Potassium	722			P
7782-49-2	Selenium	0.52	B		P
7440-22-4	Silver	0.18	U		P
7440-23-5	Sodium	190			P
7440-28-0	Thallium	0.17	U	W	F
7440-62-2	Vanadium	28.6			P
7440-66-6	Zinc	163		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070005

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08470

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS2101

Percent Solids: 87.7

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6850			P
7440-36-0	Antimony	0.88		N	P
7440-38-2	Arsenic	4.6			P
7440-39-3	Barium	136			P
7440-41-7	Beryllium	0.31	B		P
7440-43-9	Cadmium	0.27	B		P
7440-70-2	Calcium	1950			P
7440-47-3	Chromium	22.9			P
7440-48-4	Cobalt	6.0			P
7440-50-8	Copper	46.0			P
7439-89-6	Iron	15100			P
7439-92-1	Lead	400			P
7439-95-4	Magnesium	2100		E	P
7439-96-5	Manganese	220		N	P
7439-97-6	Mercury	0.93			CV
7440-02-0	Nickel	16.4			P
7440-09-7	Potassium	769			P
7782-49-2	Selenium	0.46	B		P
7440-22-4	Silver	0.18	U		P
7440-23-5	Sodium	193			P
7440-28-0	Thallium	0.17	U		F
7440-62-2	Vanadium	30.5			P
7440-66-6	Zinc	133		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070006

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08471

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS2201

Percent Solids: 85.6

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6420			P
7440-36-0	Antimony	0.59	B	N	P
7440-38-2	Arsenic	4.3			P
7440-39-3	Barium	92.9			P
7440-41-7	Beryllium	0.25	B		P
7440-43-9	Cadmium	0.57	B		P
7440-70-2	Calcium	4420			P
7440-47-3	Chromium	17.9			P
7440-48-4	Cobalt	5.2	B		P
7440-50-8	Copper	33.7			P
7439-89-6	Iron	13100			P
7439-92-1	Lead	148			P
7439-95-4	Magnesium	2260		E	P
7439-96-5	Manganese	304		N	P
7439-97-6	Mercury	0.48			CV
7440-02-0	Nickel	19.0			P
7440-09-7	Potassium	1040			P
7782-49-2	Selenium	0.48	B		P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	206			P
7440-28-0	Thallium	0.17	U	W	F
7440-62-2	Vanadium	31.2			P
7440-66-6	Zinc	123		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070007

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08472

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS2301

Percent Solids: 98.0

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4800			P
7440-36-0	Antimony	1.7		N	P
7440-38-2	Arsenic	5.6			P
7440-39-3	Barium	86.9			P
7440-41-7	Beryllium	0.19	B		P
7440-43-9	Cadmium	0.44	B		P
7440-70-2	Calcium	1790			P
7440-47-3	Chromium	12.7			P
7440-48-4	Cobalt	4.7	B		P
7440-50-8	Copper	80.3			P
7439-89-6	Iron	19100			P
7439-92-1	Lead	471			P
7439-95-4	Magnesium	1530		E	P
7439-96-5	Manganese	229		N	P
7439-97-6	Mercury	2.7			CV
7440-02-0	Nickel	12.9			P
7440-09-7	Potassium	757			P
7782-49-2	Selenium	0.48	B		P
7440-22-4	Silver	0.16	U		P
7440-23-5	Sodium	119			P
7440-28-0	Thallium	0.15	U		F
7440-62-2	Vanadium	21.9			P
7440-66-6	Zinc	207		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08473

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS2401

Percent Solids: 73.3

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5700			P
7440-36-0	Antimony	0.55	B	N	P
7440-38-2	Arsenic	3.9			P
7440-39-3	Barium	75.2			P
7440-41-7	Beryllium	0.20	B		P
7440-43-9	Cadmium	0.43	B		P
7440-70-2	Calcium	7660			P
7440-47-3	Chromium	13.1			P
7440-48-4	Cobalt	3.7	B		P
7440-50-8	Copper	29.0			P
7439-89-6	Iron	13100			P
7439-92-1	Lead	156			P
7439-95-4	Magnesium	3560		E	P
7439-96-5	Manganese	296		N	P
7439-97-6	Mercury	0.35			CV
7440-02-0	Nickel	13.8			P
7440-09-7	Potassium	854			P
7782-49-2	Selenium	0.40	B		P
7440-22-4	Silver	0.22	U		P
7440-23-5	Sodium	161			P
7440-28-0	Thallium	0.20	U		F
7440-62-2	Vanadium	18.5			P
7440-66-6	Zinc	111		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070009

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08474

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS2422

Percent Solids: 72.6

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5890			P
7440-36-0	Antimony	0.63	B	N	P
7440-38-2	Arsenic	3.8			P
7440-39-3	Barium	82.3			P
7440-41-7	Beryllium	0.22	B		P
7440-43-9	Cadmium	0.42	B		P
7440-70-2	Calcium	8420			P
7440-47-3	Chromium	13.4			P
7440-48-4	Cobalt	4.3	B		P
7440-50-8	Copper	29.0			P
7439-89-6	Iron	12600			P
7439-92-1	Lead	163			P
7439-95-4	Magnesium	3920		E	P
7439-96-5	Manganese	295		N	P
7439-97-6	Mercury	0.40			CV
7440-02-0	Nickel	13.8			P
7440-09-7	Potassium	889			P
7782-49-2	Selenium	0.38	B		P
7440-22-4	Silver	0.22	U		P
7440-23-5	Sodium	152			P
7440-28-0	Thallium	0.21	U	W	F
7440-62-2	Vanadium	19.0			P
7440-66-6	Zinc	116		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070010

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08475

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS2501

Percent Solids: 76.4

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7050			P
7440-36-0	Antimony	0.74	B	N	P
7440-38-2	Arsenic	5.4			P
7440-39-3	Barium	92.2			P
7440-41-7	Beryllium	0.25	B		P
7440-43-9	Cadmium	0.55	B		P
7440-70-2	Calcium	9870			P
7440-47-3	Chromium	15.1			P
7440-48-4	Cobalt	5.6	B		P
7440-50-8	Copper	45.4			P
7439-89-6	Iron	17200			P
7439-92-1	Lead	191			P
7439-95-4	Magnesium	4800		E	P
7439-96-5	Manganese	327		N	P
7439-97-6	Mercury	0.89			CV
7440-02-0	Nickel	16.2			P
7440-09-7	Potassium	1230			P
7782-49-2	Selenium	0.23	B		P
7440-22-4	Silver	0.21	U		P
7440-23-5	Sodium	243			P
7440-28-0	Thallium	0.20	U	W	F
7440-62-2	Vanadium	23.7			P
7440-66-6	Zinc	166		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070011

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08476

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS2601

Percent Solids: 82.0

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6640			P
7440-36-0	Antimony	0.25	U	N	P
7440-38-2	Arsenic	6.3			P
7440-39-3	Barium	105			P
7440-41-7	Beryllium	0.26	B		P
7440-43-9	Cadmium	0.52	B		P
7440-70-2	Calcium	7990			P
7440-47-3	Chromium	15.6			P
7440-48-4	Cobalt	5.5	B		P
7440-50-8	Copper	53.3			P
7439-89-6	Iron	15600			P
7439-92-1	Lead	373			P
7439-95-4	Magnesium	4890		E	P
7439-96-5	Manganese	308		N	P
7439-97-6	Mercury	0.49			CV
7440-02-0	Nickel	16.1			P
7440-09-7	Potassium	901			P
7782-49-2	Selenium	0.44	B		P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	204			P
7440-28-0	Thallium	0.18	U	W	F
7440-62-2	Vanadium	21.6			P
7440-66-6	Zinc	208		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070012

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08477

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS2701

Percent Solids: 83.2

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5860			P
7440-36-0	Antimony	0.34	B	N	P
7440-38-2	Arsenic	4.0			P
7440-39-3	Barium	70.2			P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	0.35	B		P
7440-70-2	Calcium	6380			P
7440-47-3	Chromium	12.6			P
7440-48-4	Cobalt	4.9	B		P
7440-50-8	Copper	29.6			P
7439-89-6	Iron	13700			P
7439-92-1	Lead	152			P
7439-95-4	Magnesium	3680		E	P
7439-96-5	Manganese	332		N	P
7439-97-6	Mercury	0.33			CV
7440-02-0	Nickel	12.5			P
7440-09-7	Potassium	740			P
7782-49-2	Selenium	0.48	B		P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	160			P
7440-28-0	Thallium	0.18	U	W	F
7440-62-2	Vanadium	17.7			P
7440-66-6	Zinc	99.1		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070013

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08478

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS2801

Percent Solids: 79.0

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5290			P
7440-36-0	Antimony	1.0		N	P
7440-38-2	Arsenic	6.0			P
7440-39-3	Barium	96.7			P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	0.88			P
7440-70-2	Calcium	5280			P
7440-47-3	Chromium	15.0			P
7440-48-4	Cobalt	4.7	B		P
7440-50-8	Copper	50.4			P
7439-89-6	Iron	12700			P
7439-92-1	Lead	469			P
7439-95-4	Magnesium	1960		E	P
7439-96-5	Manganese	295		N	P
7439-97-6	Mercury	1.8			CV
7440-02-0	Nickel	14.4			P
7440-09-7	Potassium	830			P
7782-49-2	Selenium	0.88			P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	153			P
7440-28-0	Thallium	0.19	U		F
7440-62-2	Vanadium	29.2			P
7440-66-6	Zinc	203		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070014

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08479

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS2901

Percent Solids: 62.5

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6620			P
7440-36-0	Antimony	1.2		N	P
7440-38-2	Arsenic	6.9			P
7440-39-3	Barium	107			P
7440-41-7	Beryllium	0.30	B		P
7440-43-9	Cadmium	0.90			P
7440-70-2	Calcium	9470			P
7440-47-3	Chromium	17.1			P
7440-48-4	Cobalt	3.9	B		P
7440-50-8	Copper	44.8			P
7439-89-6	Iron	12700			P
7439-92-1	Lead	251			P
7439-95-4	Magnesium	2170		E	P
7439-96-5	Manganese	445		N	P
7439-97-6	Mercury	0.62			CV
7440-02-0	Nickel	16.8			P
7440-09-7	Potassium	953			P
7782-49-2	Selenium	0.98			P
7440-22-4	Silver	0.26	U		P
7440-23-5	Sodium	207			P
7440-28-0	Thallium	0.24	U		F
7440-62-2	Vanadium	28.7			P
7440-66-6	Zinc	178		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070015

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08480

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS3001

Percent Solids: 92.0

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7800			P
7440-36-0	Antimony	0.53	B	N	P
7440-38-2	Arsenic	11.0			P
7440-39-3	Barium	49.6			P
7440-41-7	Beryllium	0.28	B		P
7440-43-9	Cadmium	0.35	B		P
7440-70-2	Calcium	1840			P
7440-47-3	Chromium	17.9			P
7440-48-4	Cobalt	4.1	B		P
7440-50-8	Copper	31.4			P
7439-89-6	Iron	13800			P
7439-92-1	Lead	139			P
7439-95-4	Magnesium	1770		E	P
7439-96-5	Manganese	211		N	P
7439-97-6	Mercury	0.56			CV
7440-02-0	Nickel	13.7			P
7440-09-7	Potassium	546			P
7782-49-2	Selenium	0.60			P
7440-22-4	Silver	0.17	U		P
7440-23-5	Sodium	155			P
7440-28-0	Thallium	0.16	U		F
7440-62-2	Vanadium	35.4			P
7440-66-6	Zinc	94.8		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070016

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08481

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS3101

Percent Solids: 93.5

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7480			P
7440-36-0	Antimony	0.49	B	N	P
7440-38-2	Arsenic	8.5			P
7440-39-3	Barium	54.3			P
7440-41-7	Beryllium	0.31	B		P
7440-43-9	Cadmium	0.32	B		P
7440-70-2	Calcium	2550			P
7440-47-3	Chromium	19.0			P
7440-48-4	Cobalt	5.4			P
7440-50-8	Copper	44.5			P
7439-89-6	Iron	15200			P
7439-92-1	Lead	122			P
7439-95-4	Magnesium	1990		E	P
7439-96-5	Manganese	225		N	P
7439-97-6	Mercury	0.33			CV
7440-02-0	Nickel	16.3			P
7440-09-7	Potassium	658			P
7782-49-2	Selenium	0.46	B		P
7440-22-4	Silver	0.17	U		P
7440-23-5	Sodium	153			P
7440-28-0	Thallium	0.16	U	W	F
7440-62-2	Vanadium	36.9			P
7440-66-6	Zinc	91.7		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070017

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08482

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS3201

Percent Solids: 88.5

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6710			P
7440-36-0	Antimony	0.49	B	N	P
7440-38-2	Arsenic	9.4			P
7440-39-3	Barium	48.1			P
7440-41-7	Beryllium	0.25	B		P
7440-43-9	Cadmium	0.30	B		P
7440-70-2	Calcium	2430			P
7440-47-3	Chromium	18.3			P
7440-48-4	Cobalt	4.0	B		P
7440-50-8	Copper	27.0			P
7439-89-6	Iron	12600			P
7439-92-1	Lead	120			P
7439-95-4	Magnesium	1820		E	P
7439-96-5	Manganese	244		N	P
7439-97-6	Mercury	0.38			CV
7440-02-0	Nickel	14.9			P
7440-09-7	Potassium	721			P
7782-49-2	Selenium	0.45	B		P
7440-22-4	Silver	0.18	U		P
7440-23-5	Sodium	134			P
7440-28-0	Thallium	0.17	U	W	F
7440-62-2	Vanadium	27.8			P
7440-66-6	Zinc	87.6		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070018

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08483

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS3301

Percent Solids: 90.8

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6540			P
7440-36-0	Antimony	0.49	B	N	P
7440-38-2	Arsenic	6.2			P
7440-39-3	Barium	48.8			P
7440-41-7	Beryllium	0.24	B		P
7440-43-9	Cadmium	0.19	B		P
7440-70-2	Calcium	1940			P
7440-47-3	Chromium	17.0			P
7440-48-4	Cobalt	4.6	B		P
7440-50-8	Copper	21.7			P
7439-89-6	Iron	12800			P
7439-92-1	Lead	89.6			P
7439-95-4	Magnesium	1860		E	P
7439-96-5	Manganese	251		N	P
7439-97-6	Mercury	0.36			CV
7440-02-0	Nickel	14.3			P
7440-09-7	Potassium	821			P
7782-49-2	Selenium	0.37	B		P
7440-22-4	Silver	0.18	U		P
7440-23-5	Sodium	138			P
7440-28-0	Thallium	0.16	U		F
7440-62-2	Vanadium	22.9			P
7440-66-6	Zinc	79.0		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070019

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08484

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS3401

Percent Solids: 93.4

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	6070			P
7440-36-0	Antimony	0.35	B	N	P
7440-38-2	Arsenic	5.5			P
7440-39-3	Barium	52.7			P
7440-41-7	Beryllium	0.20	B		P
7440-43-9	Cadmium	0.29	B		P
7440-70-2	Calcium	1730			P
7440-47-3	Chromium	18.0			P
7440-48-4	Cobalt	5.0	B		P
7440-50-8	Copper	41.1			P
7439-89-6	Iron	13100			P
7439-92-1	Lead	118			P
7439-95-4	Magnesium	2020		E	P
7439-96-5	Manganese	255		N	P
7439-97-6	Mercury	0.26			CV
7440-02-0	Nickel	15.6			P
7440-09-7	Potassium	1050			P
7782-49-2	Selenium	0.18	B		P
7440-22-4	Silver	0.17	U		P
7440-23-5	Sodium	132			P
7440-28-0	Thallium	0.16	U		F
7440-62-2	Vanadium	18.5			P
7440-66-6	Zinc	131		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070020

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08485

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL

Client ID: FSSSS3501

Percent Solids: 91.2

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9770			P
7440-36-0	Antimony	0.27	B	N	P
7440-38-2	Arsenic	12.3			P
7440-39-3	Barium	38.3			P
7440-41-7	Beryllium	0.34	B		P
7440-43-9	Cadmium	0.02	U		P
7440-70-2	Calcium	329			P
7440-47-3	Chromium	18.6			P
7440-48-4	Cobalt	3.1	B		P
7440-50-8	Copper	83.8			P
7439-89-6	Iron	15200			P
7439-92-1	Lead	122			P
7439-95-4	Magnesium	1780		E	P
7439-96-5	Manganese	151		N	P
7439-97-6	Mercury	2.0			CV
7440-02-0	Nickel	11.0			P
7440-09-7	Potassium	368			P
7782-49-2	Selenium	1.2			P
7440-22-4	Silver	0.17	U		P
7440-23-5	Sodium	114			P
7440-28-0	Thallium	0.16	U	W	F
7440-62-2	Vanadium	33.3			P
7440-66-6	Zinc	46.7		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

070021

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08486

Laboratory: STL BALTIMORE

SDG No.: T08468

Matrix: SOIL Client ID: FSSSS3522

Percent Solids: 90.5 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9850			P
7440-36-0	Antimony	0.28	B	N	P
7440-38-2	Arsenic	12.0			P
7440-39-3	Barium	39.8			P
7440-41-7	Beryllium	0.32	B		P
7440-43-9	Cadmium	0.42	B		P
7440-70-2	Calcium	367			P
7440-47-3	Chromium	18.8			P
7440-48-4	Cobalt	3.2	B		P
7440-50-8	Copper	78.4			P
7439-89-6	Iron	14600			P
7439-92-1	Lead	134			P
7439-95-4	Magnesium	1770		E	P
7439-96-5	Manganese	155		N	P
7439-97-6	Mercury	2.0			CV
7440-02-0	Nickel	11.2			P
7440-09-7	Potassium	363			P
7782-49-2	Selenium	0.98			P
7440-22-4	Silver	0.18	U		P
7440-23-5	Sodium	125			P
7440-28-0	Thallium	0.16	U		F
7440-62-2	Vanadium	33.8			P
7440-66-6	Zinc	49.4		N	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by

0700022

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T08487	FSSSS3544
T08487D	FSSSS3544D
T08487S	FSSSS3544S

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Wendy C VanMiddlesworth Name: Wendy C VanMiddlesworth

Date: 8/17/00 Title: Chemist III

080002

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08487

Laboratory: STL BALTIMORE

SDG No.: T08487

Matrix: WATER Client ID: FSSSS3544

Percent Solids: 0.0 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): UG/L

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	37.9	U		P
7440-36-0	Antimony	1.0	U		P
7440-38-2	Arsenic	1.7	U		P
7440-39-3	Barium	12.3	U		P
7440-41-7	Beryllium	0.40	U		P
7440-43-9	Cadmium	0.20	U		P
7440-70-2	Calcium	128	B		P
7440-47-3	Chromium	0.70	U		P
7440-48-4	Cobalt	7.5	U		P
7440-50-8	Copper	954		N*	P
7439-89-6	Iron	30.0	B		P
7439-92-1	Lead	35.8		*	P
7439-95-4	Magnesium	95.6	U		P
7439-96-5	Manganese	2.4	U		P
7439-97-6	Mercury	0.10	U		CV
7440-02-0	Nickel	13.1	U		P
7440-09-7	Potassium	174	U		P
7782-49-2	Selenium	1.8	U		P
7440-22-4	Silver	2.2	U		P
7440-23-5	Sodium	649	B		P
7440-28-0	Thallium	1.7	U		F
7440-62-2	Vanadium	5.6	U		P
7440-66-6	Zinc	950		N*	P

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

COVER PAGE - METALS ANALYSES DATA PACKAGE

Laboratory STL BALTIMORE

Client: USACE
Project: FORT TOTTEN

Lab Sample No.	Client ID.
T08488	FSSSS3601
T08488D	FSSSS3601D
T08488S	FSSSS3601S
T08489	FSSSS3701
T08490	FSSSS3801
T08491	FSSSS3901
T08492	FSSSS4001
T08493	FSSSS4501
T08494	FLASS4601
T08495	FLASS4701
T08496	FLASS4801
T08497	FLASS4822
T08498	FLASS4901
T08499	FLASS5001
T08500	FLASS5101
T08501	FLASS5201

Comments:

FORT TOTTEN

I certify that this data package is in compliance with the terms and conditions of the contract, both technically and for completeness, for other than the conditions detailed above. Release of the data contained in this hardcopy data package and in the computer-readable data submitted on floppy diskette has been authorized by the Laboratory Manager or the Manager's designee, as verified by the following signature.

Signature: Judy S. Kirwan Name: Judy S. Kirwan

Date: 1 September 2000 Title: LAB TECHNICIAN

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08488

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL

Client ID: FSSSS3601

Percent Solids: 90.4

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	11000			P
7440-36-0	Antimony	0.29	B	N	P
7440-38-2	Arsenic	11.7			P
7440-39-3	Barium	51.5			P
7440-41-7	Beryllium	0.53	B		P
7440-43-9	Cadmium	0.17	B		P
7440-70-2	Calcium	466			P
7440-47-3	Chromium	21.1			P
7440-48-4	Cobalt	4.3	B		P
7440-50-8	Copper	36.9		E	P
7439-89-6	Iron	15900			P
7439-92-1	Lead	206		N	P
7439-95-4	Magnesium	1920			P
7439-96-5	Manganese	191		N	P
7439-97-6	Mercury	0.99			CV
7440-02-0	Nickel	13.9			P
7440-09-7	Potassium	450			P
7782-49-2	Selenium	1.0			P
7440-22-4	Silver	0.18	U		P
7440-23-5	Sodium	121			P
7440-28-0	Thallium	0.17	U		F
7440-62-2	Vanadium	38.9			P
7440-66-6	Zinc	68.2			P

4/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08489

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL Client ID: FSSSS3701

Percent Solids: 92.6 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	7870			P
7440-36-0	Antimony	0.38	B	N	P
7440-38-2	Arsenic	6.9			P
7440-39-3	Barium	36.1			P
7440-41-7	Beryllium	0.37	B		P
7440-43-9	Cadmium	0.04	B		P
7440-70-2	Calcium	290			P
7440-47-3	Chromium	16.8			P
7440-48-4	Cobalt	3.9	B		P
7440-50-8	Copper	36.5		E	P
7439-89-6	Iron	12500			P
7439-92-1	Lead	143		N	P
7439-95-4	Magnesium	1650			P
7439-96-5	Manganese	165		N	P
7439-97-6	Mercury	2.3			CV
7440-02-0	Nickel	11.3			P
7440-09-7	Potassium	340			P
7782-49-2	Selenium	1.0			P
7440-22-4	Silver	0.17	U		P
7440-23-5	Sodium	104	B		P
7440-28-0	Thallium	0.16	U		F
7440-62-2	Vanadium	32.8			P
7440-66-6	Zinc	48.9			P

fc 9/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08490

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL

Client ID: FSSSS3801

Percent Solids: 87.7

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9370			P
7440-36-0	Antimony	0.30	B	N	P
7440-38-2	Arsenic	6.1			P
7440-39-3	Barium	46.5			P
7440-41-7	Beryllium	0.42	B		P
7440-43-9	Cadmium	0.08	B		P
7440-70-2	Calcium	477			P
7440-47-3	Chromium	17.1			P
7440-48-4	Cobalt	4.3	B		P
7440-50-8	Copper	36.2		E	P
7439-89-6	Iron	13400			P
7439-92-1	Lead	162		N	P
7439-95-4	Magnesium	1890			P
7439-96-5	Manganese	222		N	P
7439-97-6	Mercury	5.0			CV
7440-02-0	Nickel	13.3			P
7440-09-7	Potassium	457			P
7782-49-2	Selenium	0.89			P
7440-22-4	Silver	0.18	U		P
7440-23-5	Sodium	126			P
7440-28-0	Thallium	0.17	U		F
7440-62-2	Vanadium	24.9			P
7440-66-6	Zinc	67.6			P

9/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08491

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL

Client ID: FSSSS3901

Percent Solids: 87.8

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9980			P
7440-36-0	Antimony	0.24	B	N	P
7440-38-2	Arsenic	5.2			P
7440-39-3	Barium	48.6			P
7440-41-7	Beryllium	0.52	B		P
7440-43-9	Cadmium	0.06	B		P
7440-70-2	Calcium	921			P
7440-47-3	Chromium	19.6			P
7440-48-4	Cobalt	6.4			P
7440-50-8	Copper	22.6		E	P
7439-89-6	Iron	15800			P
7439-92-1	Lead	68.7		N	P
7439-95-4	Magnesium	2340			P
7439-96-5	Manganese	313		N	P
7439-97-6	Mercury	0.22			CV
7440-02-0	Nickel	17.9			P
7440-09-7	Potassium	734			P
7782-49-2	Selenium	0.66			P
7440-22-4	Silver	0.18	U		P
7440-23-5	Sodium	125			P
7440-28-0	Thallium	0.17	U		F
7440-62-2	Vanadium	28.0			P
7440-66-6	Zinc	75.8			P

9/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08492

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL Client ID: FSSSS4001

Percent Solids: 90.3 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	9900			P
7440-36-0	Antimony	0.45	B	N	P
7440-38-2	Arsenic	7.2			P
7440-39-3	Barium	44.4			P
7440-41-7	Beryllium	0.47	B		P
7440-43-9	Cadmium	0.02	B		P
7440-70-2	Calcium	486			P
7440-47-3	Chromium	22.2			P
7440-48-4	Cobalt	6.5			P
7440-50-8	Copper	36.3		E	P
7439-89-6	Iron	16300			P
7439-92-1	Lead	123		N	P
7439-95-4	Magnesium	2320			P
7439-96-5	Manganese	256		N	P
7439-97-6	Mercury	0.89			CV
7440-02-0	Nickel	17.4			P
7440-09-7	Potassium	736			P
7782-49-2	Selenium	1.3			P
7440-22-4	Silver	0.18	U		P
7440-23-5	Sodium	121			P
7440-28-0	Thallium	0.17	U		F
7440-62-2	Vanadium	47.1			P
7440-66-6	Zinc	57.2			P

9/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

990067

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08493

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL

Client ID: FSSSS4501

Percent Solids: 90.5

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8810			P
7440-36-0	Antimony	0.36	B	N	P
7440-38-2	Arsenic	5.7			P
7440-39-3	Barium	43.2			P
7440-41-7	Beryllium	0.43	B		P
7440-43-9	Cadmium	0.11	B		P
7440-70-2	Calcium	601			P
7440-47-3	Chromium	20.2			P
7440-48-4	Cobalt	5.2	B		P
7440-50-8	Copper	28.8		E	P
7439-89-6	Iron	14100			P
7439-92-1	Lead	81.6		N	P
7439-95-4	Magnesium	2070			P
7439-96-5	Manganese	247		N	P
7439-97-6	Mercury	0.12			CV
7440-02-0	Nickel	18.2			P
7440-09-7	Potassium	806			P
7782-49-2	Selenium	0.73			P
7440-22-4	Silver	0.18	U		P
7440-23-5	Sodium	119			P
7440-28-0	Thallium	0.17	U		F
7440-62-2	Vanadium	47.7			P
7440-66-6	Zinc	58.2			P

9/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08494

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL

Client ID: FLASS4601

Percent Solids: 89.6

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	8380			P
7440-36-0	Antimony	0.48	B	N	P
7440-38-2	Arsenic	4.4			P
7440-39-3	Barium	69.4			P
7440-41-7	Beryllium	0.40	B		P
7440-43-9	Cadmium	0.16	B		P
7440-70-2	Calcium	1800			P
7440-47-3	Chromium	17.8			P
7440-48-4	Cobalt	6.2			P
7440-50-8	Copper	49.9		E	P
7439-89-6	Iron	14000			P
7439-92-1	Lead	168		N	P
7439-95-4	Magnesium	2440			P
7439-96-5	Manganese	212		N	P
7439-97-6	Mercury	0.99			CV
7440-02-0	Nickel	15.0			P
7440-09-7	Potassium	1180			P
7782-49-2	Selenium	0.39	B		P
7440-22-4	Silver	0.18	U		P
7440-23-5	Sodium	148			P
7440-28-0	Thallium	0.17	U		F
7440-62-2	Vanadium	21.5			P
7440-66-6	Zinc	101			P

9/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08495

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL

Client ID: FLASS4701

Percent Solids: 76.5

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5210			P
7440-36-0	Antimony	3.7		N	P
7440-38-2	Arsenic	5.7			P
7440-39-3	Barium	133			P
7440-41-7	Beryllium	0.30	B		P
7440-43-9	Cadmium	1.6			P
7440-70-2	Calcium	22500			P
7440-47-3	Chromium	17.0			P
7440-48-4	Cobalt	5.3	B		P
7440-50-8	Copper	157		E	P
7439-89-6	Iron	18200			P
7439-92-1	Lead	649		N	P
7439-95-4	Magnesium	4750			P
7439-96-5	Manganese	454		N	P
7439-97-6	Mercury	0.52			CV
7440-02-0	Nickel	21.5			P
7440-09-7	Potassium	1580			P
7782-49-2	Selenium	0.41	B		P
7440-22-4	Silver	0.21	U		P
7440-23-5	Sodium	201			P
7440-28-0	Thallium	0.20	U		F
7440-62-2	Vanadium	19.9			P
7440-66-6	Zinc	355			P

9/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

990619

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08496

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL

Client ID: FLASS4801

Percent Solids: 81.2

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5130			P
7440-36-0	Antimony	1.3		N	P
7440-38-2	Arsenic	9.5			P
7440-39-3	Barium	232			P
7440-41-7	Beryllium	0.42	B		P
7440-43-9	Cadmium	1.5			P
7440-70-2	Calcium	4530			P
7440-47-3	Chromium	26.7			P
7440-48-4	Cobalt	7.5			P
7440-50-8	Copper	156		E	P
7439-89-6	Iron	23500			P
7439-92-1	Lead	595		N	P
7439-95-4	Magnesium	2460			P
7439-96-5	Manganese	300		N	P
7439-97-6	Mercury	0.92			CV
7440-02-0	Nickel	22.2			P
7440-09-7	Potassium	885			P
7782-49-2	Selenium	0.62			P
7440-22-4	Silver	0.57	B		P
7440-23-5	Sodium	188			P
7440-28-0	Thallium	0.18	U		F
7440-62-2	Vanadium	22.1			P
7440-66-6	Zinc	458			P

@ 9/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

090011

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08497

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL

Client ID: FLASS4822

Percent Solids: 84.4

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4490			P
7440-36-0	Antimony	0.98		N	P
7440-38-2	Arsenic	7.4			P
7440-39-3	Barium	186			P
7440-41-7	Beryllium	0.33	B		P
7440-43-9	Cadmium	1.3			P
7440-70-2	Calcium	22700			P
7440-47-3	Chromium	22.8			P
7440-48-4	Cobalt	5.2	B		P
7440-50-8	Copper	122		E	P
7439-89-6	Iron	20100			P
7439-92-1	Lead	483		N	P
7439-95-4	Magnesium	13100			P
7439-96-5	Manganese	216		N	P
7439-97-6	Mercury	0.82			CV
7440-02-0	Nickel	17.3			P
7440-09-7	Potassium	795			P
7782-49-2	Selenium	0.56	B		P
7440-22-4	Silver	0.30	B		P
7440-23-5	Sodium	168			P
7440-28-0	Thallium	0.18	U		F
7440-62-2	Vanadium	18.4			P
7440-66-6	Zinc	379			P

9/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

990612

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER: T08498

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL

Client ID: FLASS4901

Percent Solids: 77.4

Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	5410			P
7440-36-0	Antimony	0.96		N	P
7440-38-2	Arsenic	7.8			P
7440-39-3	Barium	185			P
7440-41-7	Beryllium	0.54	B		P
7440-43-9	Cadmium	0.70			P
7440-70-2	Calcium	15300			P
7440-47-3	Chromium	17.9			P
7440-48-4	Cobalt	4.8	B		P
7440-50-8	Copper	72.9		E	P
7439-89-6	Iron	31800			P
7439-92-1	Lead	448		N	P
7439-95-4	Magnesium	3590			P
7439-96-5	Manganese	223		N	P
7439-97-6	Mercury	0.63			CV
7440-02-0	Nickel	19.0			P
7440-09-7	Potassium	1070			P
7782-49-2	Selenium	0.52	B		P
7440-22-4	Silver	0.21	U		P
7440-23-5	Sodium	137			P
7440-28-0	Thallium	0.19	U		F
7440-62-2	Vanadium	28.3			P
7440-66-6	Zinc	295			P

9/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08499

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL Client ID: FLASS5001

Percent Solids: 78.0 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4780			P
7440-36-0	Antimony	0.96		N	P
7440-38-2	Arsenic	6.5			P
7440-39-3	Barium	241			P
7440-41-7	Beryllium	0.33	B		P
7440-43-9	Cadmium	0.93			P
7440-70-2	Calcium	5390			P
7440-47-3	Chromium	20.8			P
7440-48-4	Cobalt	5.5	B		P
7440-50-8	Copper	87.9		E	P
7439-89-6	Iron	20500			P
7439-92-1	Lead	550		N	P
7439-95-4	Magnesium	1970			P
7439-96-5	Manganese	231		N	P
7439-97-6	Mercury	0.74			CV
7440-02-0	Nickel	20.3			P
7440-09-7	Potassium	892			P
7782-49-2	Selenium	0.80			P
7440-22-4	Silver	0.20	U		P
7440-23-5	Sodium	165			P
7440-28-0	Thallium	0.19	U		F
7440-62-2	Vanadium	20.0			P
7440-66-6	Zinc	369			P

9/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

09[illegible]11

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08500

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL Client ID: FLASS5101

Percent Solids: 76.7 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4520			P
7440-36-0	Antimony	0.71	B	N	P
7440-38-2	Arsenic	6.2			P
7440-39-3	Barium	77.7			P
7440-41-7	Beryllium	0.23	B		P
7440-43-9	Cadmium	1.0			P
7440-70-2	Calcium	10800			P
7440-47-3	Chromium	14.6			P
7440-48-4	Cobalt	3.7	B		P
7440-50-8	Copper	38.3		E	P
7439-89-6	Iron	10600			P
7439-92-1	Lead	236		N	P
7439-95-4	Magnesium	3390			P
7439-96-5	Manganese	271		N	P
7439-97-6	Mercury	0.69			CV
7440-02-0	Nickel	16.0			P
7440-09-7	Potassium	716			P
7782-49-2	Selenium	1.1			P
7440-22-4	Silver	0.21	U		P
7440-23-5	Sodium	143			P
7440-28-0	Thallium	0.19	U		F
7440-62-2	Vanadium	24.6			P
7440-66-6	Zinc	230			P

9/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

09001

EPA SW846

FORM 1
METALS ANALYSIS DATA SHEET

LAB SAMPLE NUMBER T08501

Laboratory: STL BALTIMORE

SDG No.: T08488

Matrix: SOIL Client ID: FLASS5201

Percent Solids: 82.2 Date Received: 07/25/00

Results for: TOTAL metals

Concentration Units (ug/L or mg/kg dry weight): MG/KG

CAS No.	Analyte	Concentration	C	Q	M
7429-90-5	Aluminum	4800			P
7440-36-0	Antimony	0.35	B	N	P
7440-38-2	Arsenic	2.8			P
7440-39-3	Barium	99.6			P
7440-41-7	Beryllium	0.19	B		P
7440-43-9	Cadmium	0.65			P
7440-70-2	Calcium	7500			P
7440-47-3	Chromium	11.7			P
7440-48-4	Cobalt	4.2	B		P
7440-50-8	Copper	34.0		E	P
7439-89-6	Iron	10800			P
7439-92-1	Lead	252		N	P
7439-95-4	Magnesium	4050			P
7439-96-5	Manganese	240		N	P
7439-97-6	Mercury	0.25			CV
7440-02-0	Nickel	12.8			P
7440-09-7	Potassium	1170			P
7782-49-2	Selenium	0.63			P
7440-22-4	Silver	0.19	U		P
7440-23-5	Sodium	120	B		P
7440-28-0	Thallium	0.18	U		F
7440-62-2	Vanadium	18.5			P
7440-66-6	Zinc	340			P

9/1/00

M = "P" ICP SW6010
M = "F" Graphite Furnace AA As by SW7060, Pb by SW7421, Se by SW7740, Tl by SW7841, Sb by 7041
M = "CV" Cold Vapor AA - waters by SW7470, soils by SW7471

090016

Appendix I

Statistical Analysis of Little Bay Data

Ft. Totten, Little Bay Sediment 0-12" Append. IA

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Hg (mg/kg)	191	100.0%	0	.0%	191	100.0%

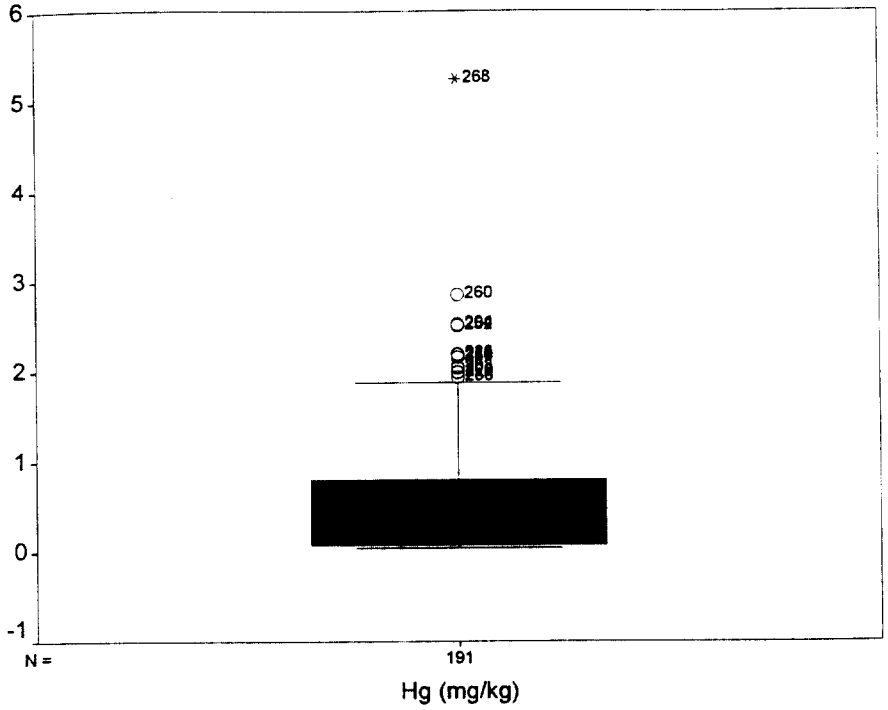
Descriptives

			Statistic	Std. Error
Hg (mg/kg)	Mean		.5447089	5.266E-02
	95% Confidence Interval for Mean	Lower Bound	.4408264	
		Upper Bound	.6485914	
	5% Trimmed Mean		.4574985	
	Median		.2020000	
	Variance		.530	
	Std. Deviation		.7278397	
	Minimum		.03790	
	Maximum		5.25000	
	Range		5.21210	
	Interquartile Range		.7376000	
	Skewness		2.403	.176
	Kurtosis		9.001	.350

Hg (mg/kg)

g (mg/kg) Stem-and-Leaf Plot

```
Frequency     Stem &  Leaf

   58.00        0 .  44555555555555555555667899&
   37.00        1 .  00012223344455 89&
   22.00        2 .  000134469&
    6.00        3 .  &&&
   10.00        4 .  257&
    3.00        5 .  &
    3.00        6 .  &
    4.00        7 .  &&
    1.00        8 .  &
    4.00        9 .  &&
    3.00       10 .  &
    4.00       11 .  &&
    6.00       12 .  0&&
    4.00       13 .  &&
    6.00       14 .  22&
    1.00       15 .  &
    3.00       16 .  &
    1.00       17 .  &
    2.00       18 .  &
   13.00 Extremes    (>=1.93)

Stem width:     .10000
Each leaf:       2 case(s)


& denotes fractional leaves.
```


6
5
4
3
2
1
0
-1
*268
○260
N =
191
Hg (mg/kg)

Ft. Totten, Biota Statistics, Little Bay, Append IB

Warnings

Hg (mg/kg) is constant in split file matrix=Juvenile Striped Bass. It will be included in any boxplots produced but other output will be omitted.

Case Processing Summary

matrix		Cases					
		Valid		Missing		Total	
		N	Percent	N	Percent	N	Percent
Blue Crab	Hg (mg/kg)	7	100.0%	0	.0%	7	100.0%
Flounder - fillet	Hg (mg/kg)	7	100.0%	0	.0%	7	100.0%
Flounder - whole	Hg (mg/kg)	12	100.0%	0	.0%	12	100.0%
Juvenile Striped Bass	Hg (mg/kg)	7	100.0%	0	.0%	7	100.0%
Mummichogs	Hg (mg/kg)	13	100.0%	0	.0%	13	100.0%
Mussel	Hg (mg/kg)	5	100.0%	0	.0%	5	100.0%
Oyster	Hg (mg/kg)	9	100.0%	0	.0%	9	100.0%

Descriptives[a]

matrix				Statistic	Std. Error
Blue Crab	Hg (mg/kg)	Mean		5.143E-02	6.429E-03
		95% Confidence Interval for Mean	Lower Bound	3.570E-02	
			Upper Bound	6.716E-02	
		5% Trimmed Mean		4.964E-02	
		Median		4.500E-02	
		Variance		2.893E-04	
		Std. Deviation		1.701E-02	
		Minimum		.04500	
		Maximum		.09000	
		Range		.04500	
		Interquartile Range		.0000000	
		Skewness		2.646	.794
		Kurtosis		7.000	1.587
Flounder - fillet	Hg (mg/kg)	Mean		.1121429	3.532E-02
		95% Confidence Interval for Mean	Lower Bound	2.572E-02	
			Upper Bound	.1985659	
		5% Trimmed Mean		.1082143	
		Median		7.000E-02	
		Variance		8.732E-03	
		Std. Deviation		9.345E-02	
		Minimum		.02500	
		Maximum		.27000	
		Range		.24500	
		Interquartile Range		.1600000	
		Skewness		1.182	.794
		Kurtosis		-.302	1.587
Flounder - whole	Hg (mg/kg)	Mean		8.375E-02	1.805E-02
		95% Confidence Interval for Mean	Lower Bound	4.402E-02	
			Upper Bound	.1234779	

Descriptives[a]

matrix				Statistic	Std. Error
Flounder - whole	Hg (mg/kg)	5% Trimmed Mean		8.056E-02	
		Median		6.500E-02	
		Variance		3.910E-03	
		Std. Deviation		6.253E-02	
		Minimum		.02500	
		Maximum		.20000	
		Range		.17500	
		Interquartile Range		9.125E-02	
		Skewness		1.134	.637
		Kurtosis		.179	1.232
Mummichogs	Hg (mg/kg)	Mean		4.923E-02	4.231E-03
		95% Confidence Interval for Mean	Lower Bound	4.001E-02	
			Upper Bound	5.845E-02	
		5% Trimmed Mean		4.665E-02	
		Median		4.500E-02	
		Variance		2.327E-04	
		Std. Deviation		1.525E-02	
		Minimum		.04500	
		Maximum		.10000	
		Range		.05500	
		Interquartile Range		.0000000	
		Skewness		3.606	.616
		Kurtosis		13.000	1.191
Mussel	Hg (mg/kg)	Mean		4.700E-02	2.550E-03
		95% Confidence Interval for Mean	Lower Bound	3.992E-02	
			Upper Bound	5.408E-02	
		5% Trimmed Mean		4.694E-02	
		Median		4.500E-02	
		Variance		3.250E-05	
		Std. Deviation		5.701E-03	
		Minimum		.04000	
		Maximum		.05500	
		Range		.01500	
		Interquartile Range		1.000E-02	
		Skewness		.405	.913
		Kurtosis		-.178	2.000
Oyster	Hg (mg/kg)	Mean		5.056E-02	6.316E-03
		95% Confidence Interval for Mean	Lower Bound	3.599E-02	
			Upper Bound	6.512E-02	
		5% Trimmed Mean		4.840E-02	
		Median		4.500E-02	
		Variance		3.590E-04	
		Std. Deviation		1.895E-02	
		Minimum		.04000	
		Maximum		.10000	
		Range		.06000	
		Interquartile Range		1.000E-02	
		Skewness		2.760	.717
		Kurtosis		7.932	1.400

a. Hg (mg/kg) is constant in one or more split files. It has been omitted.

Hg (mg/kg)

Stem-and-Leaf Plots

Hg (mg/kg) Stem-and-Leaf Plot for
MEDIA= Blue Crab

Frequency	Stem &	Leaf
.00	4 .	
6.00	4 .	555555
1.00 Extremes		(>=.090)

Stem width: .01000
Each leaf: 1 case(s)

Hg (mg/kg) Stem-and-Leaf Plot for
MEDIA= Flounder - fillet

Frequency	Stem &	Leaf
5.00	0 .	26678
.00	1 .	
2.00	2 .	27

Stem width: .10000
Each leaf: 1 case(s)

Hg (mg/kg) Stem-and-Leaf Plot for
MEDIA= Flounder - whole

Frequency	Stem &	Leaf
3.00	0 .	222
5.00	0 .	55677
2.00	1 .	03
.00	1 .	
2.00	2 .	00

Stem width: .10000
Each leaf: 1 case(s)

Hg (mg/kg) Stem-and-Leaf Plot for
MEDIA= Mummichogs

Frequency	Stem &	Leaf
12.00	4 .	555555555555
1.00 Extremes		(>=.100)

Stem width: .01000
Each leaf: 1 case(s)

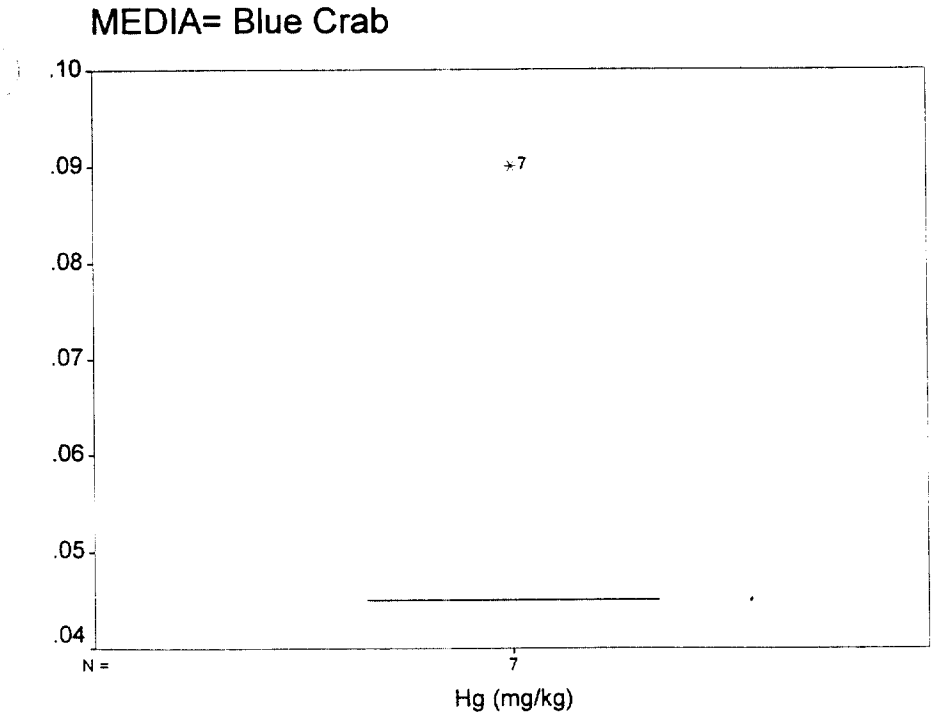
Hg (mg/kg) Stem-and-Leaf Plot for
MEDIA= Mussel

Frequency	Stem &	Leaf

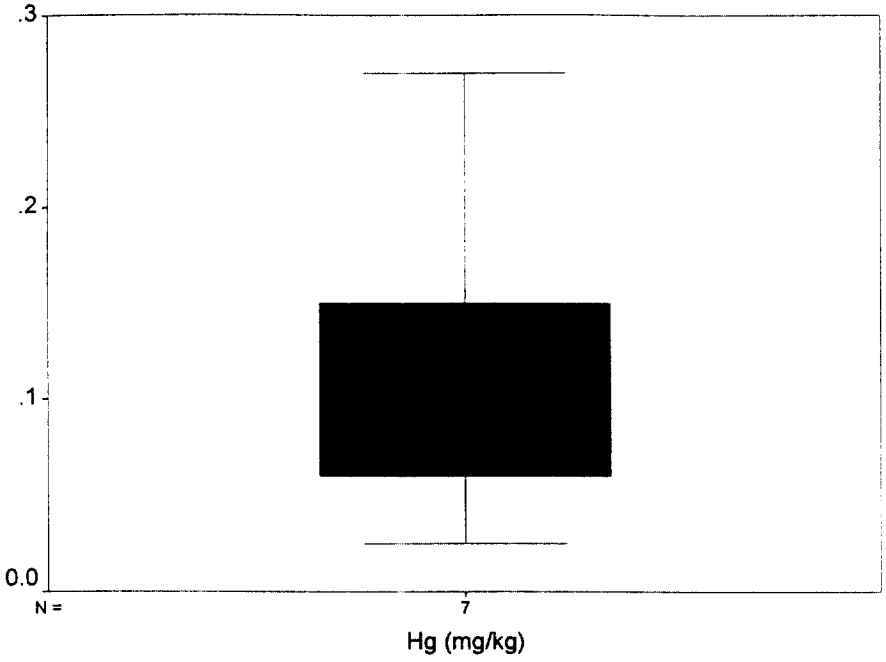
```
     1.00          4 .  0
     2.00          4 .  55
     1.00          5 .  0
     1.00          5 .  5

 Stem width:     .01000
 Each leaf:       1 case(s)
```

```
Hg (mg/kg) Stem-and-Leaf Plot for
MEDIA= Oyster

 Frequency     Stem &  Leaf

     3.00          4 .  000
     3.00          4 .  555
     2.00          5 .  00
     1.00 Extremes     (>=.100)

 Stem width:     .01000
 Each leaf:       1 case(s)
```

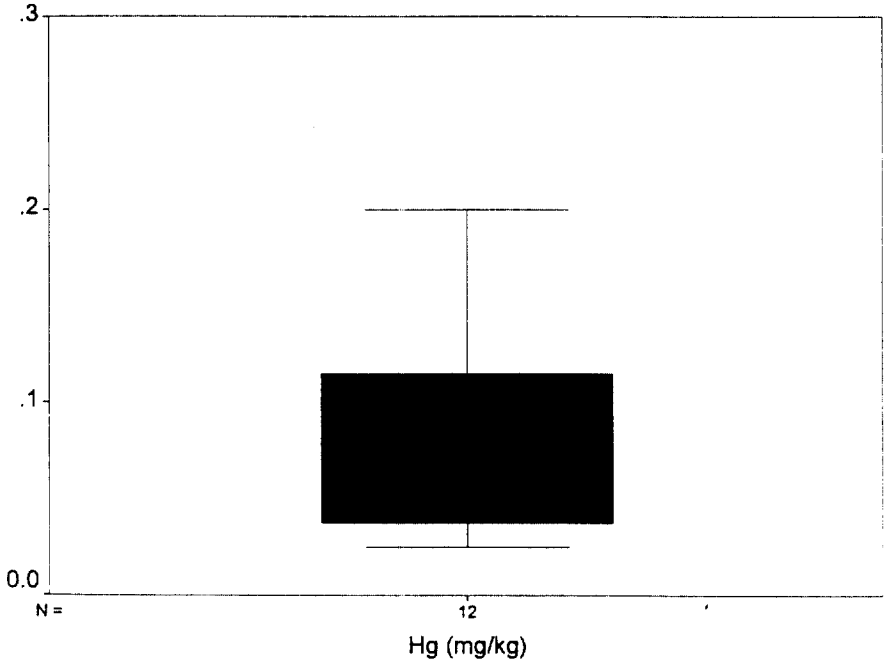
Boxplots



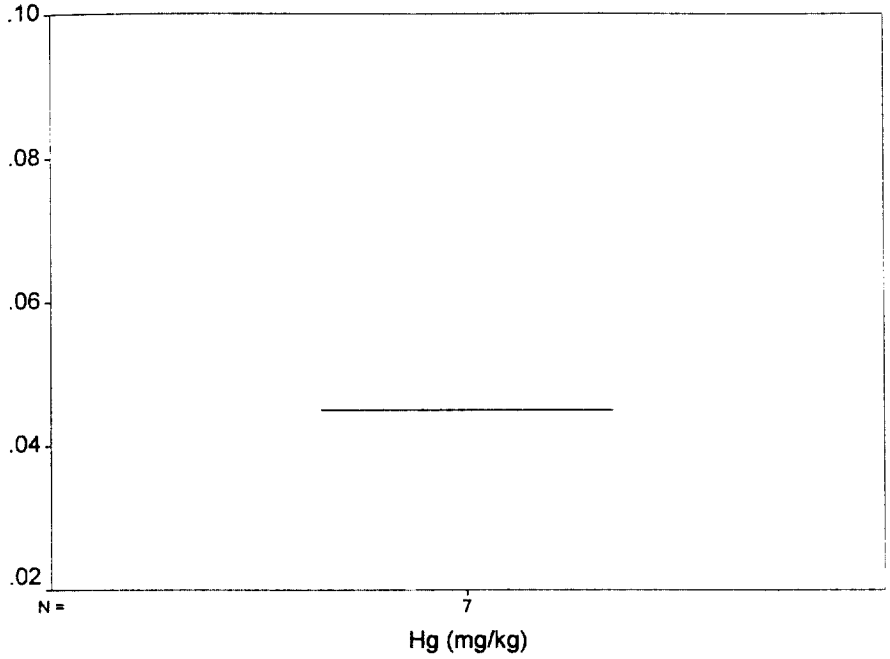
MEDIA= Flounder - fillet



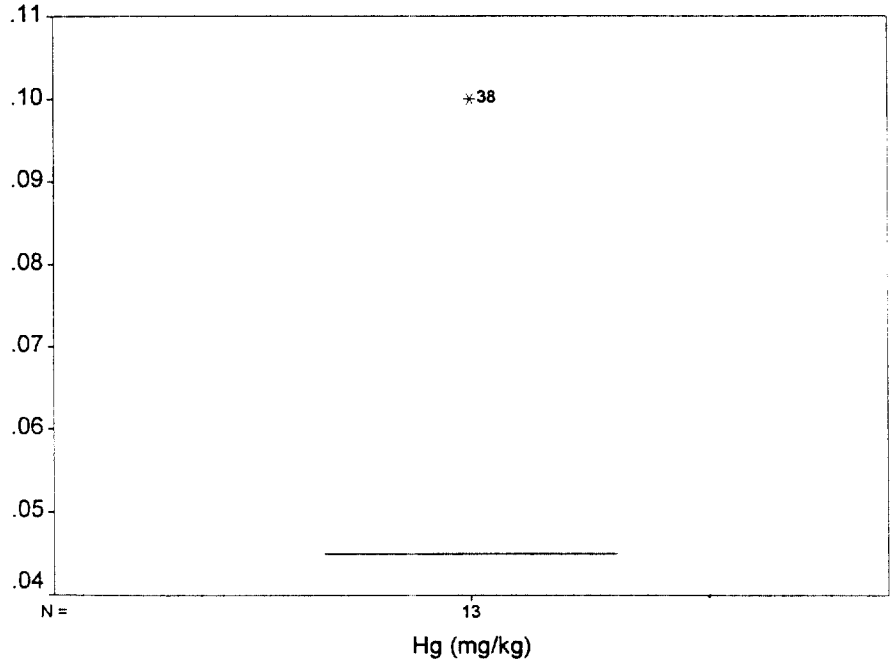
MEDIA= Flounder - whole



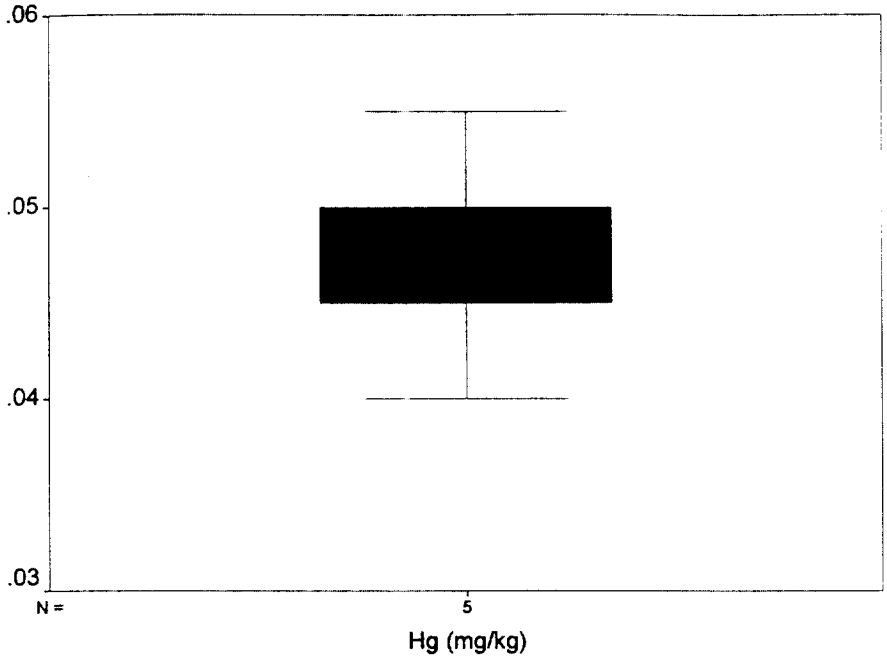
MEDIA= Juvenile Striped Bass



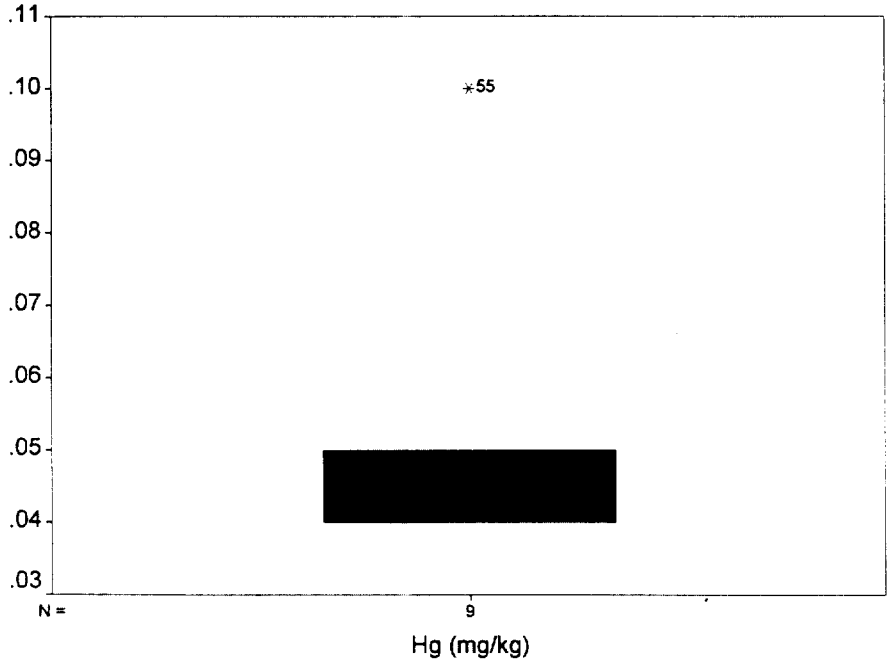
MEDIA= Mummichogs



MEDIA= Mussel



MEDIA= Oyster



Ft. Totten, Little Bay Shoreline Sediment 0-12", Append. IC

Case Processing Summary

	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Hg (mg/kg)	79	100.0%	0	.0%	79	100.0%

Descriptives

			Statistic	Std. Error
Hg (mg/kg)	Mean		.4071342	8.100E-02
	95% Confidence Interval for Mean	Lower Bound	.2458728	
		Upper Bound	.5683956	
	5% Trimmed Mean		.2805682	
	Median		.2030000	
	Variance		.518	
	Std. Deviation		.7199561	
	Minimum		.04120	
	Maximum		5.25000	
	Range		5.20880	
	Interquartile Range		.3180000	
	Skewness		4.802	.271
	Kurtosis		27.819	.535

Tests of Normality

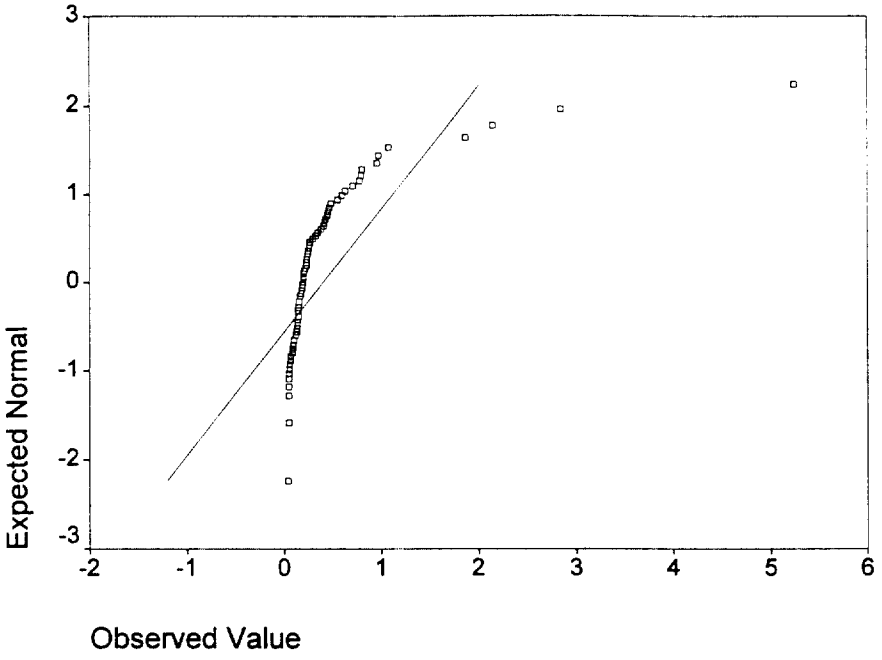
	Kolmogorov-Smirnov[a]		
	Statistic	df	Sig.
Hg (mg/kg)	.306	79	.000

a. Lilliefors Significance Correction

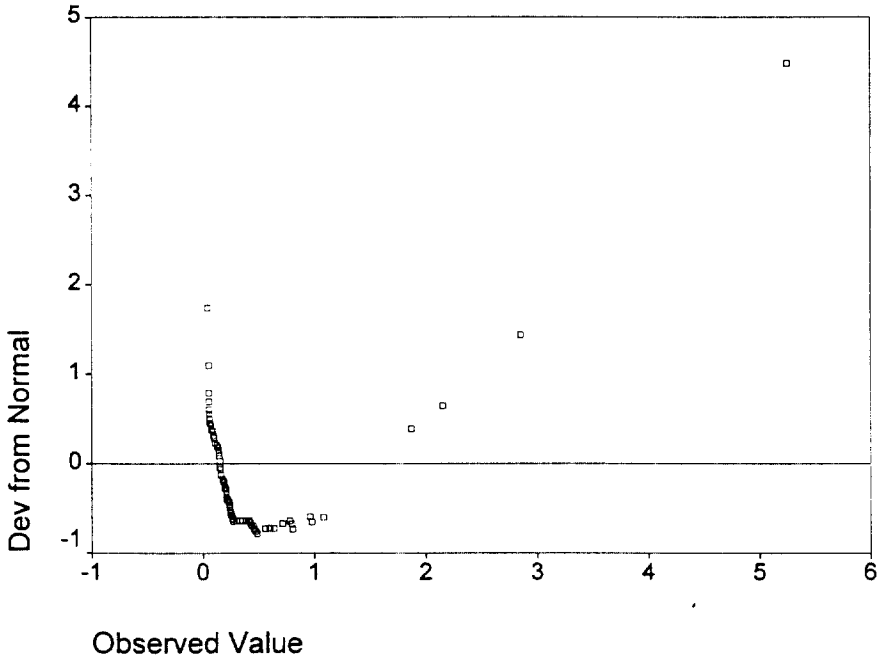
Hg (mg/kg)

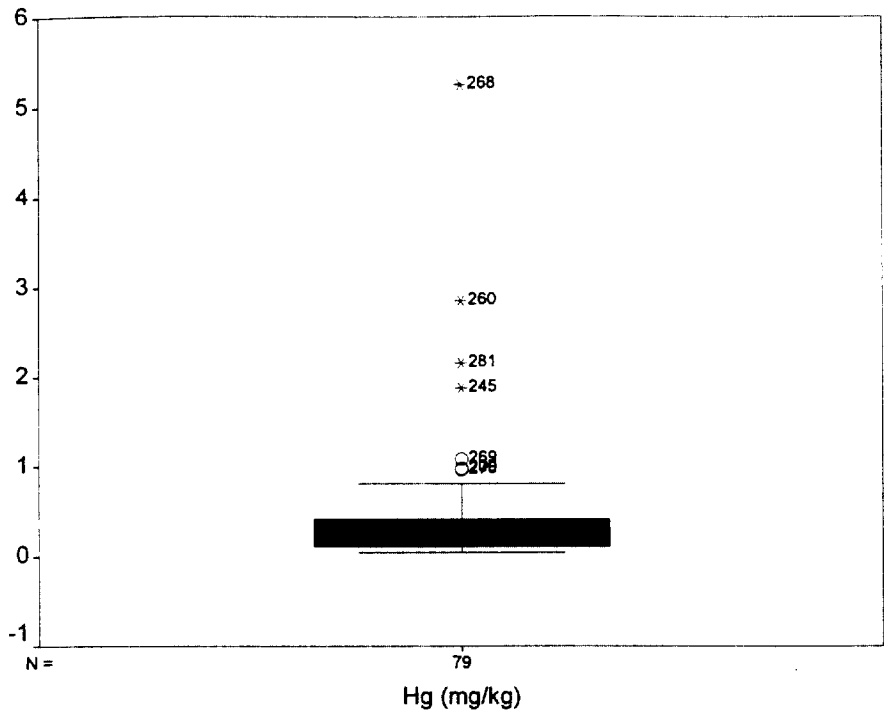
```
Hg (mg/kg) Stem-and-Leaf Plot

 Frequency     Stem &  Leaf

    19.00        0 .  4555555555555577899
    20.00        1 .  00233444445555578899
    16.00        2 .  0000123344456669
     3.00        3 .  258
     7.00        4 .  1225578
     2.00        5 .  59
     1.00        6 .  3
     3.00        7 .  179
     1.00        8 .  0
     7.00 Extremes    (>=.96)

 Stem width:     .10000
 Each leaf:       1 case(s)
```

Normal Q-Q Plot of Hg (mg/kg)



Detrended Normal Q-Q Plot of Hg (mg/kg)




6
5
4
3
2
1
0
-1
268
260
281
245
N =
79
Hg (mg/kg)

Ft. Totten, Little Bay Unfiltered Surface Water, Append ID

Case Processing Summary

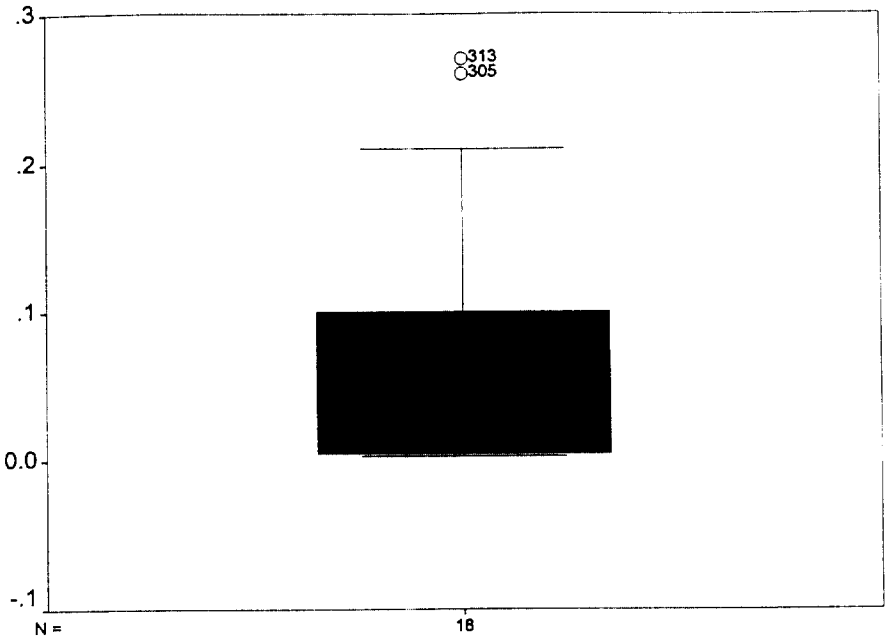
	Cases					
	Valid		Missing		Total	
	N	Percent	N	Percent	N	Percent
Hg (ug/L)	18	100.0%	0	.0%	18	100.0%

Descriptives (ug/L)

			Statistic	Std. Error
Hg (ug/L)	Mean		7.532E-02	2.024E-02
	95% Confidence Interval for Mean	Lower Bound	3.262E-02	
		Upper Bound	.1180148	
	5% Trimmed Mean		6.855E-02	
	Median		5.000E-02	
	Variance		7.372E-03	
	Std. Deviation		8.586E-02	
	Minimum		.00248	
	Maximum		.27000	
	Range		.26752	
	Interquartile Range		.1008625	
	Skewness		1.478	.536
	Kurtosis		1.131	1.038

Hg (ug/L)

```
g Stem-and-Leaf Plot

Frequency     Stem &  Leaf

     6.00        0 .  000002
     7.00        0 .  5555555
     2.00        1 .  02
      .00        1 .
     1.00        2 .  1
     2.00 Extremes    (>=.26)

Stem width:     .10000
Each leaf:       1 case(s)
```



Hg (ug/L)

Appendix J

Sediment Toxicity Results

SUMMARY REPORT

Study Title

Toxicity Evaluation of Sediment
with *Leptocheirus plumlosus*

Author

Arthur E. Putt

October 4, 2000

Submitted To

U.S. Army Corps of Engineers
Baltimore District, HTRW Branch
10 South Howard Street, Room 10700-XX
Balitmore, MD 21201

Performing Laboratory

Springborn Laboratories, Inc.
790 Main Street
Wareham, Massachusetts 02571-1075

Laboratory Project ID

Springborn Study No. 13741.6100
Project Name: Ft. Totten

SIGNATURES AND APPROVAL

SUBMITTED BY:

Springborn Laboratories, Inc.
790 Main Street
Wareham, Massachusetts 02571-1075

Arthur E. Putt
Study Director

10/4/00
Date

Ronald C. Biever
Director,
Environmental Toxicology

4 Oct 2000
Date

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Table 2. **Summary of the survival and growth of *Leptocheirus plumlosus* after 28 days of exposure.** 10

EXECUTIVE SUMMARY

The following is a summary of testing performed with the marine amphipod (*Leptocheirus plumlosus*) to evaluate sediment for U.S. Army Corps of Engineers, Baltimore District, HTRW Branch, project name Fort Totten. Six sediment test samples from Fort Totten, New York, were identified as, collected and shipped by U.S. Army Corps of Engineers and received at Springborn as outlined below:

Sample Identification	Date Sample was Collected/Shipped	Date Received at Springborn
TOX-PO-130-01	July 6, 2000	July 11, 2000
TOX-PO-133-01	July 6, 2000	July 11, 2000
TOX-PO-137-01	July 7, 2000	July 11, 2000
TOX-PO-139-01	July 7, 2000	July 11, 2000
TOX-PO-142-01	July 7, 2000	July 11, 2000
TOX-PO-144-01	July 7, 2000	July 11, 2000

Springborn collected sediment from the Narrow River, Narragansett, Rhode Island for use as the laboratory control sediment in this study. The tests were initiated on July 14, 2000, 8 days from the date of collection of the first sample.

The procedures used during the conduct of this study followed Springborn Laboratories Test Method SED-Lp-152, "28-Day Static-Renewal Toxicity Test with Esturarine Amphipods (*Leptocheirus plumlosus*) to Meet U.S. EPA Guidelines". The methods described in this test method meet the testing requirements of EPA Guidelines: "The *Leptocheirus plumlosus* Chronic Sediment Toxicity Test Method for the Round-Robin Study" (Revised April 22, 1997) and "Methods for Assessing the Toxicity of Sediment-Associated Contaminants with Estuarine and Marine Amphipods" (US EPA, 1994). The test method followed during the conduct of this test is attached in Appendix I.

A summary of the water quality characteristics of overlying water during the 28-day exposure is presented in Table 1. Water quality remained acceptable throughout the 28-day exposure period. Throughout the exposure period, dissolved oxygen concentrations were generally greater than or

equal to the required 4.0 mg/L in all samples with one exceptions: in replicate B in sample TOX-PO-144-01 was 1.1 mg/L on Day 27. This reduction in concentration was short term due to an interruption of aeration was corrected. This decrease dissolved oxygen concentration in replicate B of sample TOX-PO-144-01 had no impact on the results as survival in this replicates was consistent with the other four replicates in the group. Ammonia concentrations, measured on Days 0 and 28 of the exposure, were ≤ 1.09 mg/L in all samples and were safely below toxicity levels. Water temperature, measured daily in the exposure vessels, ranged from 23 to 25°C, except for test days 20 and 21 were the temperature was measured at 21°C.

A summary of the *Leptocheirus plumlosus* survival, growth and reproduction during the 28-day exposure periods is presented in Table 2. The mean percent survival for organisms exposed to the laboratory control was 87%. The mean percent survival for organisms exposed to the reference control site (TOX-PO-144-01) was 87%. The mean percent survival of amphipods in the laboratory control and the reference control site (TOX-PO-144-01) met the minimum survival criteria for this type of study (i.e., ≥ 80% survival). The performance (survival, reproduction and growth) of the each of the test sites was statistically compared to the performance of the laboratory control organisms and the reference control site (TOX-PO-144-01).

The mean percent survival in all of the samples ranged from 86 to 97% and were comparable to the survival of the laboratory control organisms and the reference control organisms. The mean dry weight of the laboratory control and reference control organisms, were 1.61 and 1.54 mg per amphipod, respectively. The mean dry weight in all of the samples ranged from 1.46 to 1.69 mg per amphipod, respectively and were comparable to the mean dry weight of the laboratory control and reference control organisms. The mean number of offspring per female released by the laboratory control and reference control organisms, were 10.4 and 6.7 offspring per female, respectively. The mean number of offspring per female released in all of the samples ranged from 7.5 to 11.7 offspring per female and were comparable to the mean number of offspring per female released in the laboratory control organisms and the reference control organisms.

CONCLUSIONS

Results of the samples tested established that the laboratory control and reference control organism survival, growth and reproduction were well within the range of acceptance criteria. The survival, growth and reproduction effects observed among the amphipods are thus reliable. Based on the results of statistical analysis, all of the samples tested were similar to the laboratory control and reference control performance suggesting that these sediment samples had no adverse effects on the amphipod *Leptocheirus plumlosus*.

SUMMARY OF TEST CONDITIONS
28-Day Sediment Toxicity Test with *Leptocheirus plumlosus*

DATE SAMPLES RECEIVED:	July 11, 2000
TEST DATES:	July 14 to August 11, 2000
TEST TYPE:	Whole-sediment toxicity test
TEMPERATURE:	21 to 25°C
LIGHT INTENSITY:	50 to 70 footcandles
PHOTOPERIOD:	16 hours light, 8 hours dark
TEST CHAMBER SIZE:	1000 mL
SEDIMENT VOLUME:	Approximately 120 mL
OVERLYING WATER VOLUME:	750 mL
RENEWAL OF TEST SOLUTIONS:	400 mL overlying water renewed three times per week
AGE/SIZE OF TEST ORGANISMS:	Neonates; those captured between a 0.50 mm and 0.25 mm screen
NUMBER OF ORGANISMS PER TEST CHAMBER:	20
NUMBER OF REPLICATE TEST CHAMBERS PER TREATMENT:	5
NUMBER ORGANISMS/SAMPLE:	100
FEEDING:	3.0 mL of flaked fish food suspension per test chamber daily for days 0-7, three times per week for days 8-13, 6.0 mL three times per week for days 14-27
AERATION:	Gentle oil-free aeration (2 to 3 bubble/minute)
TEST CONCENTRATION:	100% (no dilutions)
TEST DURATION:	28 days
ENDPOINTS:	Survival, growth (dry weight) and number of offspring per female
TEST ACCEPTABILITY:	Minimum mean control survival of 80%

Table 1. Water quality summary for the *Leptocheirus plumlosus* 28-day exposure.

Sample Identification	Dissolved Oxygen (mg/L)	Temperature (°C)	Salinity (‰)
	Day 0 - Day 28	Day 0 - Day 28	Day 0 - Day 28
Lab Control	6.1 - 7.4	21 - 25	20
TOX-PO-130-01	6.1 - 7.2	21 - 25	20
TOX-PO-133-01	5.9 - 7.3	21 - 25	20
TOX-PO-137-01	5.9 - 7.3	21 - 25	20
TOX-PO-139-01	6.1 - 7.4	21 - 25	20
TOX-PO-142-01	5.7 - 7.3	21 - 25	20
TOX-PO-144-01	5.8[a] - 7.4	21 - 25	20

Sample Identification	pH	Ammonia as N (mg/L)	
	Day 0 - Day 28	Day 0	Day 28
Lab Control	7.2 - 7.9	0.41	<0.10
TOX-PO-130-01	7.3 - 8.4	0.80	<0.10
TOX-PO-133-01	7.2 - 8.3	0.87	<0.10
TOX-PO-137-01	7.1 - 8.3	0.98	<0.10
TOX-PO-139-01	7.2 - 8.1	1.00	<0.10
TOX-PO-142-01	7.2 - 8.1	1.09	<0.10
TOX-PO-144-01	6.8 - 8.3	0.76	<0.10

[a] On test day 27, dissolved oxygen in replicate B of sample TOX-PO-144-01 measured 1.1 mg/L due to a temporary interruption of aeration.

Table 2. Summary of the survival and growth of *Leptocheirus plumlosus* after 28 days of exposure.

Sample Identification	Average Percent Survival	Average Number of Offspring/female	Average Dry Wt. per Amphipod (mg)
Lab Control	87(6)	1.61(0.28)	10.4(2.6)
TOX-PO-130-01	90(5)	1.64(0.19)	7.5(2.2)
TOX-PO-133-01	93(3)	1.62(0.08)	8.1(2.4)
TOX-PO-137-01	97(3)	1.65(0.04)	8.6(3.4)
TOX-PO-139-01	86(8)	1.46(0.24)	8.0(1.9)
TOX-PO-142-01	94(8)	1.69(0.16)	11.7(2.6)
TOX-PO-144-01	87(13)	1.54(0.16)	6.7(1.4)

REFERENCES

U.S. EPA. 1997. The Leptocheirus plumulosus Chronic Sediment Toxicity Test Method for the Round-Robin Study. Revised April 22, 1997.

U.S. EPA. 1994. Methods for Measuring the Toxicity of Sediment-Associated Contaminants with Estuarine and Marine Amphipods. Office of Research and Development. Washington, DC EPA/600/R-94/025.

APPENDIX I

Test Method (SED - Lp - 152) - 28-Day Static-Renewal Toxicity Test with Estuarine Amphipods (*Leptocheirus plumlosus*)to Meet U.S. EPA Guidelines

1.0 OBJECTIVE

The objective of this study is to determine the chronic toxicity of sediment to estuarine amphipods (*Leptocheirus plumulosus*) during a 28-day exposure. Amphipods are exposed to the sediment sample to assess survival, growth, number of young per surviving female and percent gravid females on test day 28 (test termination). The methods (Springborn Laboratories test method #: SED-Lp-152) described in this test method generally meet the standard procedures described in 'The Leptocheirus plumulosus Chronic Sediment Toxicity Test Method for the Round-Robin Study' (Revised April 22, 1997) and 'Methods for Assessing the Toxicity of Sediment-Associated Contaminants with Estuarine and Marine Amphipods' (U.S. EPA, 1994).

2.0 MATERIALS AND METHODS

2.1. TEST ORGANISMS

2.1.1. Species - The estuarine amphipod, *Leptocheirus plumulosus*, is used to conduct the 28-day toxicity test. The neonate amphipods used to initiate the 28-day test are the same size and age and are those amphipods that pass through a 0.5 mm sieve and retained on a 0.25 mm sieve.

2.1.2. Source - The neonate amphipods are obtained from a reliable commercial supplier. The neonate amphipods will be held under the same conditions as testing (i.e., salinity 20 ± 2 ‰, temperature 25 ± 2 °C).

2.1.3. Feeding - While being maintained in the culture prior to the test, neonate amphipods are fed a flaked fish food suspension (100 mg/mL) *ad libitum* each day. During the test, each exposure vessels is fed a flaked fish food suspension (10 mg/mL) three times per week (following renewal of overlying water). On test day 0 through 13, 2.0 mL of the flaked fish food suspension (10 mg/mL) is added to each exposure vessel. On days 14 through 27, 4.0 mL of the flaked fish food suspension (10 mg/mL) is added to each exposure vessel.

2.1.4. Handling - Wide-bore pipets and 0.25 mm mesh sieves are used to transfer the neonate amphipods to the test vessels, taking care to minimize possible stress due to handling. Amphipods that are damaged or dropped during transfer are not used.

2.1.5. Reference Test - A 96-hour reference test, water-only exposure, using cadmium is conducted on a sub-population of organisms (from the same population used to initiate the test) within 30 days of the study. The health of the test population is assessed using the LC50 from the reference test..

2.2. PHYSICAL SYSTEM

2.2.1. Sediment Samples - Sediment samples (both test and reference sites) should be shipped overnight to Springborn Laboratories. Upon receipt at Springborn, sample containers are inspected for leakage or damage and the sample identity is recorded.

If storage is required, the samples are refrigerated at approximately 4 °C. Prior to use, all sediment samples are pressed through a 0.25 mm sieve to remove debris, large clumps of sediment, large predators, indigenous amphipods and to facilitate removal of offspring at termination of the test. The test is initiated within 14 days of sediment collection.

2.2.2. **Test Chambers** - The test chambers used in the static acute bioassay are 1000 mL glass jars which are chemically clean. Each jar contains 2 cm of sediment (approximately 120 mL) and 750 mL of overlying water. Test vessels will be covered with plastic during the test minimize evaporation of the overlying water. Each test vessel is labeled with the appropriate test concentration and replicate. Test vessels are cleaned by an appropriate method to remove residue of test material previously used (i.e., acid to remove metals and bases; detergents and organic solvents to remove organic compounds) and rinsed several times using dilution water.

2.2.3. **Overlying Water** - Natural, filtered seawater from the Cape Cod Canal is used as dilution water for the test. The water is filtered through a 20-μm and 5-μm polypropylene core filter and heated to the required test temperature. Salinity and pH of each new batch of seawater is measured and recorded to ensure that these parameters are within acceptable ranges. Natural values for seawater, generally, are a pH range of 7.5 - 8.2 and salinity 29 - 35 $^{o}/_{oo}$. Prior to use in the cultures or test system, the seawater used in diluted, with deionized water, to a salinity of 20 ‰. Periodic analysis of representative samples of seawater are conducted to ensure the absence of potential toxicants, including pesticides, PCBs and selected toxic metals, at concentrations which may be harmful to the amphipods.

2.2.4. **Control Sediment** - The laboratory control sediment, will be collected from a site, known to be free of contamination and supports a local population of amphipods. Sediment will be consistent with estuarine sediment and contain a high content of silt and clay (i.e., > 90% fines).

2.3. TEST PROCEDURES

2.3.1. **Test Concentration** - Each sediment sample is tested in five replicates, as 100% whole sediment (no dilutions). Sediment from one or more uncontaminated reference sites are usually included in the test to evaluate the survival, growth (dry weight) and sexual maturation potential of the test organisms in a non-contaminated sediment. The laboratory control sediment, also tested in five replicates. Twenty amphipods per replicate (100 per sediment sample or reference control) are used to initiate the test.

2.3.2. **Test Initiation** - The day before test initiation (day -1) test sediment, reference control sediment and laboratory control sediment are added to the test vessels. The overlying water is added gently to prevent resuspension of the sediment layer in the water column. This allows the sediment and water to equilibrate prior to addition of the test organisms.

Neonate amphipods are removed from the cultures vessels and twenty amphipods are impartially selected and pipeted into each replicate test or control vessel. This procedure is repeated until all vessels contain twenty amphipods. Test vessels are inspected within 2 hours after amphipods are introduced to ensure organisms are not trapped in the surface tension. Organisms trapped in the surface tension are removed

and replaced with new amphipods.

2.3.3. **Renewal of Overlying Water** - During the 28-day study, the overlying water is renewed by siphoning 400 mL of the overlying water and replacing it with fresh overlying water three times per week. The siphoning and replacement of overlying water is done carefully so as to not disturb the sediment layer. The 400 mL of fresh overlying water contains the food ration for that test day (i.e., either 3.0 mL or 6.0 mL of a 10 mg/mL flaked fish food suspension, see Section 2.1.3).

2.3.4. **Photoperiod** - The test vessels are illuminated at a light intensity of 20 to 100 footcandles using a combination of fluorescent bulbs. A 16-hour light, 8-hour dark photoperiod is maintained with an automatic timer. Sudden transitions from light to dark and vice versa are avoided.

2.3.5. **Measurement of Water Quality Variables** - At test initiation and test termination, temperature, pH, dissolved oxygen (DO) concentration and salinity in the overlying water are measured in each replicate test vessel. Temperature, DO, pH and salinity are measured two additional times per week (at each renewal interval) in one replicate test vessel of each treatment and control. These additional measurements are alternated between replicates at each interval. Ammonia concentrations are measured at test initiation and at test termination in a composite sample overlying water from each replciate vessel of each treatment and control. Temperature is monitored continuously in the waterbath using a minimum-maximum thermometer. Temperature extremes are recorded daily.

2.3.6. **Dissolved Oxygen** - To prevent total dissolved oxygen from dropping below 4.0 mg/L, aeration (with oil-free air) is maintained throughout the exposure at a rate of 1 to 3 bubbles per second with a 1 mL glass pipette.

2.3.7. **Temperature** - Water temperature of the test solutions is maintained at 25 ± 2°C by conducting the study in a temperature controlled waterbath.

2.3.8. **Biological Data** - Survival of the adult amphipods is determined in each test vessel at test termination by sieving the sediment, through a 0.75 mm and 0.25 mm sieve, to remove all surviving adult amphipods (retained on the 0.75 mm sieve) and young produced (retained on the 0.25 mm sieve). Adult amphipods are transferred to a shallow dish with 70% alcohol for 30 seconds to kill them and are then sexed. Identification of male and female amphipods is made under a dissecting scope at 80X magnification. Males are identified by a notched palm on the distal segment of the gnathopod or by the presence of penile papillae ventrally on the abdomen. Females are identified by the presence of eggs in the ovaries or brood pouch and the presence of oostigites (brood plates). In addition, females lack the notch on the palm of the last segment of the gnathopod. All surviving adult amphipods for each replicate vessel are then to a tared weigh boat and dried overnight at 70°C. Following drying, the samples are cooled to room temperature and weighed on an analytical balance to the nearest 0.01 mg.

Young amphipods are removed from the 0.25 mm sieve and transferred to a labeled sample jar. Sufficient alcohol is added to the sample jar to preserve the offspring and 3.0 milliliters of concentrated Rose Bengal solution (1 mg/mL) is then preserved in 70% ethanol solution until young can be counted. Reproduction is reported as number of

young per surviving female in each replicate vessel.

2.3.9 **Acceptability Criteria** - The percent survival of adult amphipods in the control must be > 80 % after 28 days of exposure.

3.0 CALCULATIONS

Mean survival, growth, number of young per surviving female and percent gravid females of the amphipods for each sediment sample is compared to the mean survival, growth, number of young per surviving female and percent gravid females of the reference sediment sample for determination of significant adverse effects.

The mean survival, growth, young per surviving female and percent gravid females of each sediment sample will be tested for normality and homogeneity of variance using Shapiro-Wilks Test and Bartlett's Test. If the data set passes these two tests, then a parametric method (e.g., Dunnett's Test) will be used to evaluate the results of the mean survival of each test sample for significant adverse effects. If the data set fails the test for normality and homogeneity of variance, then a non-parametric method (e.g., Steel's Many-One Rank Test will be used to determine significant adverse effects. If necessary, mean values (i.e., percent survival and percent gravid females) will be transformed (e.g., arcsine square root).

4.0 REPORTING

The raw data and summary report are reviewed by the Study Director. The test results will be presented in an outline format on a per sample basis.

5.0 REFERENCES

U.S. EPA. 1997. The Leptocheirus plumulosus Chronic Sediment Toxicity Test Method for the Round-Robin Study. Revised April 22, 1997.

U.S. EPA. 1994. Methods for Measuring the Toxicity of Sediment-Associated Contaminants with Estuarine and Marine Amphipods. Office of Research and Development. Washington, DC EPA/600/R-94/025.

Appendix K

Risk Assessment Calculations
Fill Area

TABLE K-1 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURES TO TOTAL SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Incidental Ingestion of Total Soil**

Ingestion Rate = CR	100	mg/day			
Exposure Frequency = EF	350	day/yr			
Exposure Duration = ED	24	yr	for cancer	30 yr	for noncancer
Body Weight = BW	70	kg			
Averaging Time (Noncancer) = AT	10,950	days			
Averaging Time (Cancer) = AT	25,550	days			
Conversion Factor = CF	1.00E-06	kg/mg			

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	6.26E+03	8.58E-03	2.94E-03	1.00E+00	NA	8.58E-03	--
ANTIMONY	1.84E+00	2.52E-06	8.64E-07	4.00E-04	NA	6.30E-03	--
ARSENIC	5.88E+00	8.05E-06	2.76E-06	3.00E-04	1.50E+00	2.68E-02	4.14E-06
BARIUM	1.88E+02	2.58E-04	8.83E-05	7.00E-02	NA	3.68E-03	--
BERYLLIUM	3.70E-01	5.07E-07	1.74E-07	2.00E-03	NA	2.53E-04	--
CADMIUM	8.05E-01	1.10E-06	3.78E-07	5.00E-04	NA	2.21E-03	--
CHROMIUM	2.20E+01	3.01E-05	1.03E-05	3.00E-03	NA	1.00E-02	--
COBALT	6.39E+00	8.75E-06	3.00E-06	6.00E-02	NA	1.46E-04	--
COPPER	9.73E+01	1.33E-04	4.57E-05	3.70E-02	NA	3.60E-03	--
MANGANESE	2.83E+02	3.88E-04	1.33E-04	2.40E-02	NA	1.62E-02	--
MERCURY	7.91E-01	1.08E-06	3.72E-07	1.00E-04	NA	1.08E-02	--
NICKEL	2.11E+01	2.89E-05	9.91E-06	2.00E-02	NA	1.45E-03	--
SELENIUM	4.76E-01	6.52E-07	2.24E-07	5.00E-03	NA	1.30E-04	--
SILVER	2.50E-01	3.42E-07	1.17E-07	5.00E-03	NA	6.85E-05	--
THALLIUM	1.31E-01	1.79E-07	6.15E-08	6.60E-05	NA	2.72E-03	--
VANADIUM	2.42E+01	3.32E-05	1.14E-05	7.00E-03	NA	4.74E-03	--
ZINC	3.82E+02	5.23E-04	1.79E-04	3.00E-01	NA	1.74E-03	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.69E-01	2.32E-07	7.94E-08	6.00E-02	NA	3.86E-06	--
ACENAPHTHYLENE	5.30E-02	7.26E-08	2.49E-08	2.00E-02	NA	3.63E-06	--
ANTHRACENE	2.37E-01	3.25E-07	1.11E-07	3.00E-01	NA	1.08E-06	--
BENZ(A)ANTHRACENE	4.97E-01	6.81E-07	2.33E-07	NA	7.30E-01	--	1.70E-07
BENZO[A]PYRENE	4.96E-01	6.79E-07	2.33E-07	NA	7.30E+00	--	1.70E-06
BENZO(B)FLUORANTHENE	6.63E-01	9.08E-07	3.11E-07	NA	7.30E-01	--	2.27E-07
BENZO(G,H,I)PERYLENE	3.43E-01	4.70E-07	1.61E-07	3.00E-02	NA	1.57E-05	--
BENZO(K)FLUORANTHENE	2.50E-01	3.42E-07	1.17E-07	NA	7.30E-02	--	8.57E-09
CHRYSENE	5.69E-01	7.79E-07	2.67E-07	NA	7.30E-03	--	1.95E-09
DIBENZ[A, H]ANTHRACENE	1.57E-01	2.15E-07	7.37E-08	NA	7.30E+00	--	5.38E-07
FLUORANTHENE	8.32E-01	1.14E-06	3.91E-07	4.00E-02	NA	2.85E-05	--
FLUORENE	1.94E-01	2.66E-07	9.11E-08	4.00E-02	NA	6.64E-06	--
INDENO(1,2,3-CD)PYRENE	3.50E-01	4.79E-07	1.64E-07	NA	7.30E-01	--	1.20E-07
2-METHYLNAPHTHALENE	1.05E-01	1.44E-07	4.93E-08	2.00E-02	NA	7.19E-06	--
NAPHTHALENE	1.23E-01	1.68E-07	5.78E-08	2.00E-02	NA	8.42E-06	--
PHENANTHRENE	1.10E+00	1.51E-06	5.17E-07	2.00E-02	NA	7.53E-05	--
PYRENE	1.04E+00	1.42E-06	4.88E-07	3.00E-02	NA	4.75E-05	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	5.01E-01	6.86E-07	2.35E-07	2.00E-02	1.40E-02	3.43E-05	3.29E-09
BUTYLBENZYLPHTHALATE	7.30E-02	1.00E-07	3.43E-08	2.00E-01	NA	5.00E-07	--
CARBAZOLE	1.20E-01	1.64E-07	5.64E-08	NA	2.00E-02	--	1.13E-09
DIBENZOFURAN	1.65E-01	2.26E-07	7.75E-08	4.00E-03	NA	5.65E-05	--
DIBUTYLPHTHALATE	4.30E-02	5.89E-08	2.02E-08	1.00E-01	NA	5.89E-07	--
Volatiles							
2-BUTANONE	1.00E-02	1.37E-08	4.70E-09	6.00E-01	NA	2.28E-08	--
ACETONE	7.00E-01	9.59E-07	3.29E-07	1.00E-01	NA	9.59E-06	--
BENZENE	4.30E-03	5.89E-09	2.02E-09	3.00E-03	5.50E-02	1.96E-06	1.11E-10
CARBON DISULFIDE	1.00E-02	1.37E-08	4.70E-09	1.00E-01	NA	1.37E-07	--
TOLUENE	2.20E-03	3.01E-09	1.03E-09	2.00E-01	NA	1.51E-08	--
TRICHLOROETHENE	3.30E-03	4.52E-09	1.55E-09	6.00E-03	1.10E-02	7.53E-07	1.70E-11
VINYL CHLORIDE	1.00E-02	1.37E-08	4.70E-09	3.00E-03	1.50E+00	4.57E-06	7.05E-09
Cumulative Risk						**9.98E-02**	**6.92E-06**

TABLE K-2 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURE TO DERMAL CONTACT WITH TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Dermal Contact with Total Soil**

Surface Area for Contact = SA	5,700	cm2/event
Adherence Factor = AF	0.07	mg/cm2
Absorption Factor = ABS	chemical-specific	
Exposure Frequency = EF	350	event/yr
Exposure Duration = ED	24	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	8,760	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	6.26E+03	--	--	1.00E+00	NA	--	--
ANTIMONY	1.84E+00	--	--	6.00E-05	NA	--	--
ARSENIC	5.88E+00	9.64E-07	3.31E-07	3.00E-04	1.50E+00	3.21E-03	4.96E-07
BARIUM	1.88E+02	--	--	4.90E-03	NA	--	--
BERYLLIUM	3.70E-01	--	--	1.40E-05	NA	--	--
CADMIUM	8.05E-01	4.40E-09	1.51E-09	1.25E-05	NA	3.52E-04	--
CHROMIUM	2.20E+01	--	--	7.50E-05	NA	--	--
COBALT	6.39E+00	--	--	6.00E-02	NA	--	--
COPPER	9.73E+01	--	--	3.70E-02	NA	--	--
MANGANESE	2.83E+02	--	--	9.60E-04	NA	--	--
MERCURY	7.91E-01	--	--	1.00E-04	NA	--	--
NICKEL	2.11E+01	--	--	8.00E-04	NA	--	--
SELENIUM	4.76E-01	--	--	5.00E-03	NA	--	--
SILVER	2.50E-01	--	--	2.00E-04	NA	--	--
THALLIUM	1.31E-01	--	--	6.60E-05	NA	--	--
VANADIUM	2.42E+01	--	--	1.82E-04	NA	--	--
ZINC	3.82E+02	--	--	3.00E-01	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.69E-01	1.20E-07	4.12E-08	NA	NA	--	--
ACENAPHTHYLENE	5.30E-02	3.77E-08	1.29E-08	NA	NA	--	--
ANTHRACENE	2.37E-01	1.68E-07	5.77E-08	NA	NA	--	--
BENZ(A)ANTHRACENE	4.97E-01	3.53E-07	1.21E-07	NA	NA	--	--
BENZO[A]PYRENE	4.96E-01	3.52E-07	1.21E-07	NA	NA	--	--
BENZO(B)FLUORANTHENE	6.63E-01	4.71E-07	1.62E-07	NA	NA	--	--
BENZO(G,H,I)PERYLENE	3.43E-01	2.44E-07	8.36E-08	NA	NA	--	--
BENZO(K)FLUORANTHENE	2.50E-01	1.78E-07	6.09E-08	NA	NA	--	--
CHRYSENE	5.69E-01	4.04E-07	1.39E-07	NA	NA	--	--
DIBENZ[A, H]ANTHRACENE	1.57E-01	1.12E-07	3.82E-08	NA	NA	--	--
FLUORANTHENE	8.32E-01	5.91E-07	2.03E-07	NA	NA	--	--
FLUORENE	1.94E-01	1.38E-07	4.73E-08	NA	NA	--	--
INDENO(1,2,3-CD)PYRENE	3.50E-01	2.49E-07	8.53E-08	NA	NA	--	--
2-METHYLNAPHTHALENE	1.05E-01	7.46E-08	2.56E-08	NA	NA	--	--
NAPHTHALENE	1.23E-01	8.74E-08	3.00E-08	NA	NA	--	--
PHENANTHRENE	1.10E+00	7.82E-07	2.68E-07	NA	NA	--	--
PYRENE	1.04E+00	7.39E-07	2.53E-07	NA	NA	--	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	5.01E-01	2.74E-07	9.39E-08	2.00E-02	1.40E-02	1.37E-05	1.31E-09
BUTYLBENZYLPHTHALATE	7.30E-02	3.99E-08	1.37E-08	2.00E-01	NA	2.00E-07	--
CARBAZOLE	1.20E-01	6.56E-08	2.25E-08	NA	2.00E-02	--	4.50E-10
DIBENZOFURAN	1.65E-01	9.02E-08	3.09E-08	4.00E-03	NA	2.25E-05	--
DIBUTYLPHTHALATE	4.30E-02	2.35E-08	8.06E-09	1.00E-01	NA	2.35E-07	--
Volatiles							
2-BUTANONE	1.00E-02	--	--	6.00E-01	NA	--	--
ACETONE	7.00E-01	--	--	1.00E-01	NA	--	--
BENZENE	4.30E-03	--	--	3.00E-03	5.50E-02	--	--
CARBON DISULFIDE	1.00E-02	--	--	1.00E-01	NA	--	--
TOLUENE	2.20E-03	--	--	2.00E-01	NA	--	--
TRICHLOROETHENE	3.30E-03	--	--	6.00E-03	1.10E-02	--	--
VINYL CHLORIDE	1.00E-02	--	--	3.00E-03	1.50E+00	--	--
Cumulative Risk						**3.60E-03**	**4.98E-07**

TABLE K-3 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO INHALATION OF PARTICULATES FROM TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Inhalation of Particles from Total Soil**

Inhalation Rate = IR	0.833	m3/hr
Exposure Time = ET	24	hr/day
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	30	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	10,950	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	4.74E-06	1.30E-06	4.45E-07	1.40E-03	NA	9.28E-04	--
ANTIMONY	1.39E-09	3.82E-10	1.31E-10	NA	NA	--	--
ARSENIC	4.45E-09	1.22E-09	4.18E-10	NA	1.50E+01	--	6.27E-09
BARIUM	1.42E-07	3.90E-08	1.34E-08	1.40E-04	NA	2.79E-04	--
BERYLLIUM	2.80E-10	7.68E-11	2.63E-11	5.70E-06	8.40E+00	1.35E-05	2.21E-10
CADMIUM	6.10E-10	1.67E-10	5.73E-11	NA	6.30E+00	--	3.61E-10
CHROMIUM	1.67E-08	4.56E-09	1.56E-09	NA	2.90E+02	--	4.54E-07
COBALT	4.84E-09	1.33E-09	4.55E-10	NA	NA	--	--
COPPER	7.37E-08	2.02E-08	6.92E-09	NA	NA	--	--
MANGANESE	2.14E-07	5.87E-08	2.01E-08	1.40E-05	NA	4.19E-03	--
MERCURY	5.99E-10	1.64E-10	5.63E-11	NA	NA	--	--
NICKEL	1.60E-08	4.38E-09	1.50E-09	NA	NA	--	--
SELENIUM	3.61E-10	9.88E-11	3.39E-11	NA	NA	--	--
SILVER	1.89E-10	5.19E-11	1.78E-11	NA	NA	--	--
THALLIUM	9.92E-11	2.72E-11	9.32E-12	NA	NA	--	--
VANADIUM	1.83E-08	5.02E-09	1.72E-09	NA	NA	--	--
ZINC	2.89E-07	7.93E-08	2.72E-08	NA	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.28E-10	3.51E-11	1.20E-11	6.00E-02	NA	5.84E-10	--
ACENAPHTHYLENE	4.02E-11	1.10E-11	3.77E-12	8.60E-04	NA	1.28E-08	--
ANTHRACENE	1.80E-10	4.92E-11	1.69E-11	3.00E-01	NA	1.64E-10	--
BENZ(A)ANTHRACENE	3.77E-10	1.03E-10	3.54E-11	NA	3.10E-01	--	1.10E-11
BENZO[A]PYRENE	3.76E-10	1.03E-10	3.53E-11	NA	3.10E+00	--	1.09E-10
BENZO(B)FLUORANTHENE	5.02E-10	1.38E-10	4.72E-11	NA	3.10E-01	--	1.46E-11
BENZO(G,H,I)PERYLENE	2.60E-10	7.12E-11	2.44E-11	3.00E-02	NA	2.37E-09	--
BENZO(K)FLUORANTHENE	1.89E-10	5.19E-11	1.78E-11	NA	3.10E-02	--	5.51E-13
CHRYSENE	4.31E-10	1.18E-10	4.05E-11	NA	3.10E-03	--	1.25E-13
DIBENZ[A, H]ANTHRACENE	1.19E-10	3.26E-11	1.12E-11	NA	3.10E+00	--	3.46E-11
FLUORANTHENE	6.30E-10	1.73E-10	5.92E-11	4.00E-02	NA	4.32E-09	--
FLUORENE	1.47E-10	4.02E-11	1.38E-11	4.00E-02	NA	1.01E-09	--
INDENO(1,2,3-CD)PYRENE	2.65E-10	7.26E-11	2.49E-11	NA	3.10E-01	--	7.72E-12
2-METHYLNAPHTHALENE	7.95E-11	2.18E-11	7.47E-12	NA	NA	--	--
NAPHTHALENE	9.32E-11	2.55E-11	8.75E-12	8.60E-04	NA	2.97E-08	--
PHENANTHRENE	8.33E-10	2.28E-10	7.82E-11	8.60E-04	NA	2.65E-07	--
PYRENE	7.88E-10	2.16E-10	7.40E-11	3.00E-02	NA	7.19E-09	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	3.80E-10	1.04E-10	3.56E-11	2.20E-02	NA	4.72E-09	--
BUTYLBENZYLPHTHALATE	5.53E-11	1.51E-11	5.19E-12	2.00E-01	NA	7.57E-11	--
CARBAZOLE	9.09E-11	2.49E-11	8.54E-12	NA	2.00E-02	--	1.71E-13
DIBENZOFURAN	1.25E-10	3.42E-11	1.17E-11	4.00E-03	NA	8.56E-09	--
DIBUTYLPHTHALATE	3.26E-11	8.92E-12	3.06E-12	1.00E-01	NA	8.92E-11	--
Volatiles							
2-BUTANONE	7.58E-12	2.07E-12	7.11E-13	2.90E-01	NA	7.15E-12	--
ACETONE	5.30E-10	1.45E-10	4.98E-11	1.00E-01	NA	1.45E-09	--
BENZENE	3.26E-12	8.92E-13	3.06E-13	1.70E-03	2.70E-02	5.25E-10	8.26E-15
CARBON DISULFIDE	7.58E-12	2.07E-12	7.11E-13	2.00E-01	NA	1.04E-11	--
TOLUENE	1.67E-12	4.56E-13	1.56E-13	1.10E-01	NA	4.15E-12	--
TRICHLOROETHENE	2.50E-12	6.85E-13	2.35E-13	6.00E-03	6.00E-03	1.14E-10	1.41E-15
VINYL CHLORIDE	7.58E-12	2.07E-12	7.11E-13	2.90E-02	3.10E-02	7.15E-11	2.21E-14
Cumulative Risk						**5.41E-03**	**4.61E-07**

TABLE K-4 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURES TO TOTAL SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Incidental Ingestion of Total Soil**

Ingestion Rate = CR	200	mg/day
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	6	yr
Body Weight = BW	15	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	6.26E+03	8.00E-02	6.86E-03	1.00E+00	NA	8.00E-02	--
ANTIMONY	1.84E+00	2.35E-05	2.02E-06	4.00E-04	NA	5.88E-02	--
ARSENIC	5.88E+00	7.52E-05	6.44E-06	3.00E-04	1.50E+00	2.51E-01	9.67E-06
BARIUM	1.88E+02	2.40E-03	2.06E-04	7.00E-02	NA	3.43E-02	--
BERYLLIUM	3.70E-01	4.73E-06	4.05E-07	2.00E-03	NA	2.37E-03	--
CADMIUM	8.05E-01	1.03E-05	8.82E-07	5.00E-04	NA	2.06E-02	--
CHROMIUM	2.20E+01	2.81E-04	2.41E-05	3.00E-03	NA	9.38E-02	--
COBALT	6.39E+00	8.17E-05	7.00E-06	6.00E-02	NA	1.36E-03	--
COPPER	9.73E+01	1.24E-03	1.07E-04	3.70E-02	NA	3.36E-02	--
MANGANESE	2.83E+02	3.62E-03	3.10E-04	2.40E-02	NA	1.51E-01	--
MERCURY	7.91E-01	1.01E-05	8.67E-07	1.00E-04	NA	1.01E-01	--
NICKEL	2.11E+01	2.70E-04	2.31E-05	2.00E-02	NA	1.35E-02	--
SELENIUM	4.76E-01	6.09E-06	5.22E-07	5.00E-03	NA	1.22E-03	--
SILVER	2.50E-01	3.20E-06	2.74E-07	5.00E-03	NA	6.39E-04	--
THALLIUM	1.31E-01	1.67E-06	1.44E-07	6.60E-05	NA	2.54E-02	--
VANADIUM	2.42E+01	3.09E-04	2.65E-05	7.00E-03	NA	4.42E-02	--
ZINC	3.82E+02	4.88E-03	4.19E-04	3.00E-01	NA	1.63E-02	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.69E-01	2.16E-06	1.85E-07	6.00E-02	NA	3.60E-05	--
ACENAPHTHYLENE	5.30E-02	6.78E-07	5.81E-08	2.00E-02	NA	3.39E-05	--
ANTHRACENE	2.37E-01	3.03E-06	2.60E-07	3.00E-01	NA	1.01E-05	--
BENZ(A)ANTHRACENE	4.97E-01	6.35E-06	5.45E-07	NA	7.30E-01	--	3.98E-07
BENZO[A]PYRENE	4.96E-01	6.34E-06	5.44E-07	NA	7.30E+00	--	3.97E-06
BENZO(B)FLUORANTHENE	6.63E-01	8.48E-06	7.27E-07	NA	7.30E-01	--	5.30E-07
BENZO(G,H,I)PERYLENE	3.43E-01	4.39E-06	3.76E-07	3.00E-02	NA	1.46E-04	--
BENZO(K)FLUORANTHENE	2.50E-01	3.20E-06	2.74E-07	NA	7.30E-02	--	2.00E-08
CHRYSENE	5.69E-01	7.27E-06	6.24E-07	NA	7.30E-03	--	4.55E-09
DIBENZ[A, H]ANTHRACENE	1.57E-01	2.01E-06	1.72E-07	NA	7.30E+00	--	1.26E-06
FLUORANTHENE	8.32E-01	1.06E-05	9.12E-07	4.00E-02	NA	2.66E-04	--
FLUORENE	1.94E-01	2.48E-06	2.13E-07	4.00E-02	NA	6.20E-05	--
INDENO(1,2,3-CD)PYRENE	3.50E-01	4.47E-06	3.84E-07	NA	7.30E-01	--	2.80E-07
2-METHYLNAPHTHALENE	1.05E-01	1.34E-06	1.15E-07	2.00E-02	NA	6.71E-05	--
NAPHTHALENE	1.23E-01	1.57E-06	1.35E-07	2.00E-02	NA	7.86E-05	--
PHENANTHRENE	1.10E+00	1.41E-05	1.21E-06	2.00E-02	NA	7.03E-04	--
PYRENE	1.04E+00	1.33E-05	1.14E-06	3.00E-02	NA	4.43E-04	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	5.01E-01	6.41E-06	5.49E-07	2.00E-02	1.40E-02	3.20E-04	7.69E-09
BUTYLBENZYLPHTHALATE	7.30E-02	9.33E-07	8.00E-08	2.00E-01	NA	4.67E-06	--
CARBAZOLE	1.20E-01	1.53E-06	1.32E-07	NA	2.00E-02	--	2.63E-09
DIBENZOFURAN	1.65E-01	2.11E-06	1.81E-07	4.00E-03	NA	5.27E-04	--
DIBUTYLPHTHALATE	4.30E-02	5.50E-07	4.71E-08	1.00E-01	NA	5.50E-06	--
Volatiles							
2-BUTANONE	1.00E-02	1.28E-07	1.10E-08	6.00E-01	NA	2.13E-07	--
ACETONE	7.00E-01	8.95E-06	7.67E-07	1.00E-01	NA	8.95E-05	--
BENZENE	4.30E-03	5.50E-08	4.71E-09	3.00E-03	5.50E-02	1.83E-05	2.59E-10
CARBON DISULFIDE	1.00E-02	1.28E-07	1.10E-08	1.00E-01	NA	1.28E-06	--
TOLUENE	2.20E-03	2.81E-08	2.41E-09	2.00E-01	NA	1.41E-07	--
TRICHLOROETHENE	3.30E-03	4.22E-08	3.62E-09	6.00E-03	1.10E-02	7.03E-06	3.98E-11
VINYL CHLORIDE	1.00E-02	1.28E-07	1.10E-08	3.00E-03	1.50E+00	4.26E-05	1.64E-08
Cumulative Risk						**9.31E-01**	**1.61E-05**

TABLE K-5 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURE TO DERMAL CONTACT WITH TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Dermal Contact with Total Soil**

Surface Area for Contact = SA	2,800	cm2/event
Adherence Factor = AF	0.2	mg/cm2
Absorption Factor = ABS	chemical specific	
Exposure Frequency = EF	350	event/yr
Exposure Duration = ED	6	yr
Body Weight = BW	15	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	6.26E+03	--	--	1.00E+00	NA	--	--
ANTIMONY	1.84E+00	--	--	6.00E-05	NA	--	--
ARSENIC	5.88E+00	6.31E-06	5.41E-07	3.00E-04	1.50E+00	2.10E-02	8.12E-07
BARIUM	1.88E+02	--	--	4.90E-03	NA	--	--
BERYLLIUM	3.70E-01	--	--	1.40E-05	NA	--	--
CADMIUM	8.05E-01	2.88E-08	2.47E-09	1.25E-05	NA	2.31E-03	--
CHROMIUM	2.20E+01	--	--	7.50E-05	NA	--	--
COBALT	6.39E+00	--	--	6.00E-02	NA	--	--
COPPER	9.73E+01	--	--	3.70E-02	NA	--	--
MANGANESE	2.83E+02	--	--	9.60E-04	NA	--	--
MERCURY	7.91E-01	--	--	1.00E-04	NA	--	--
NICKEL	2.11E+01	--	--	8.00E-04	NA	--	--
SELENIUM	4.76E-01	--	--	5.00E-03	NA	--	--
SILVER	2.50E-01	--	--	2.00E-04	NA	--	--
THALLIUM	1.31E-01	--	--	6.60E-05	NA	--	--
VANADIUM	2.42E+01	--	--	1.82E-04	NA	--	--
ZINC	3.82E+02	--	--	3.00E-01	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.69E-01	7.87E-07	6.74E-08	NA	NA	--	--
ACENAPHTHYLENE	5.30E-02	2.47E-07	2.11E-08	NA	NA	--	--
ANTHRACENE	2.37E-01	1.10E-06	9.45E-08	NA	NA	--	--
BENZ(A)ANTHRACENE	4.97E-01	2.31E-06	1.98E-07	NA	NA	--	--
BENZO[A]PYRENE	4.96E-01	2.31E-06	1.98E-07	NA	NA	--	--
BENZO(B)FLUORANTHENE	6.63E-01	3.09E-06	2.64E-07	NA	NA	--	--
BENZO(G,H,I)PERYLENE	3.43E-01	1.60E-06	1.37E-07	NA	NA	--	--
BENZO(K)FLUORANTHENE	2.50E-01	1.16E-06	9.97E-08	NA	NA	--	--
CHRYSENE	5.69E-01	2.65E-06	2.27E-07	NA	NA	--	--
DIBENZ[A, H]ANTHRACENE	1.57E-01	7.31E-07	6.26E-08	NA	NA	--	--
FLUORANTHENE	8.32E-01	3.87E-06	3.32E-07	NA	NA	--	--
FLUORENE	1.94E-01	9.03E-07	7.74E-08	NA	NA	--	--
INDENO(1,2,3-CD)PYRENE	3.50E-01	1.63E-06	1.40E-07	NA	NA	--	--
2-METHYLNAPHTHALENE	1.05E-01	4.89E-07	4.19E-08	NA	NA	--	--
NAPHTHALENE	1.23E-01	5.72E-07	4.91E-08	NA	NA	--	--
PHENANTHRENE	1.10E+00	5.12E-06	4.39E-07	NA	NA	--	--
PYRENE	1.04E+00	4.84E-06	4.15E-07	NA	NA	--	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	5.01E-01	1.79E-06	1.54E-07	2.00E-02	1.40E-02	8.97E-05	2.15E-09
BUTYLBENZYLPHTHALATE	7.30E-02	2.61E-07	2.24E-08	2.00E-01	NA	1.31E-06	--
CARBAZOLE	1.20E-01	4.30E-07	3.68E-08	NA	2.00E-02	--	7.36E-10
DIBENZOFURAN	1.65E-01	5.91E-07	5.06E-08	4.00E-03	NA	1.48E-04	--
DIBUTYLPHTHALATE	4.30E-02	1.54E-07	1.32E-08	1.00E-01	NA	1.54E-06	--
Volatiles							
2-BUTANONE	1.00E-02	--	--	6.00E-01	NA	--	--
ACETONE	7.00E-01	--	--	1.00E-01	NA	--	--
BENZENE	4.30E-03	--	--	3.00E-03	5.50E-02	--	--
CARBON DISULFIDE	1.00E-02	--	--	1.00E-01	NA	--	--
TOLUENE	2.20E-03	--	--	2.00E-01	NA	--	--
TRICHLOROETHENE	3.30E-03	--	--	6.00E-03	1.10E-02	--	--
VINYL CHLORIDE	1.00E-02	--	--	3.00E-03	1.50E+00	--	--
Cumulative Risk						**2.36E-02**	**8.15E-07**

TABLE K-6 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO INHALATION OF PARTICULATES FROM TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Inhalation of Particles from Total Soil**

Inhalation Rate = IR	0.417	m3/hr
Exposure Time = ET	24	hr/day
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	6	yr
Body Weight = BW	15	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	4.74E-06	3.03E-06	2.60E-07	1.40E-03	NA	2.17E-03	--
ANTIMONY	1.39E-09	8.92E-10	7.64E-11	NA	NA	--	--
ARSENIC	4.45E-09	2.85E-09	2.44E-10	NA	1.50E+01	--	3.66E-09
BARIUM	1.42E-07	9.11E-08	7.81E-09	1.40E-04	NA	6.51E-04	--
BERYLLIUM	2.80E-10	1.79E-10	1.54E-11	5.70E-06	8.40E+00	3.15E-05	1.29E-10
CADMIUM	6.10E-10	3.90E-10	3.34E-11	NA	6.30E+00	--	2.11E-10
CHROMIUM	1.67E-08	1.07E-08	9.14E-10	NA	2.90E+02	--	2.65E-07
COBALT	4.84E-09	3.10E-09	2.65E-10	NA	NA	--	--
COPPER	7.37E-08	4.72E-08	4.04E-09	NA	NA	--	--
MANGANESE	2.14E-07	1.37E-07	1.18E-08	1.40E-05	NA	9.80E-03	--
MERCURY	5.99E-10	3.83E-10	3.29E-11	NA	NA	--	--
NICKEL	1.60E-08	1.02E-08	8.77E-10	NA	NA	--	--
SELENIUM	3.61E-10	2.31E-10	1.98E-11	NA	NA	--	--
SILVER	1.89E-10	1.21E-10	1.04E-11	NA	NA	--	--
THALLIUM	9.92E-11	6.35E-11	5.44E-12	NA	NA	--	--
VANADIUM	1.83E-08	1.17E-08	1.01E-09	NA	NA	--	--
ZINC	2.89E-07	1.85E-07	1.59E-08	NA	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.28E-10	8.19E-11	7.02E-12	6.00E-02	NA	1.37E-09	--
ACENAPHTHYLENE	4.02E-11	2.57E-11	2.20E-12	8.60E-04	NA	2.99E-08	--
ANTHRACENE	1.80E-10	1.15E-10	9.85E-12	3.00E-01	NA	3.83E-10	--
BENZ(A)ANTHRACENE	3.77E-10	2.41E-10	2.06E-11	NA	3.10E-01	--	6.40E-12
BENZO[A]PYRENE	3.76E-10	2.40E-10	2.06E-11	NA	3.10E+00	--	6.39E-11
BENZO(B)FLUORANTHENE	5.02E-10	3.21E-10	2.75E-11	NA	3.10E-01	--	8.54E-12
BENZO(G,H,I)PERYLENE	2.60E-10	1.66E-10	1.42E-11	3.00E-02	NA	5.54E-09	--
BENZO(K)FLUORANTHENE	1.89E-10	1.21E-10	1.04E-11	NA	3.10E-02	--	3.22E-13
CHRYSENE	4.31E-10	2.76E-10	2.36E-11	NA	3.10E-03	--	7.33E-14
DIBENZ[A, H]ANTHRACENE	1.19E-10	7.61E-11	6.52E-12	NA	3.10E+00	--	2.02E-11
FLUORANTHENE	6.30E-10	4.03E-10	3.46E-11	4.00E-02	NA	1.01E-08	--
FLUORENE	1.47E-10	9.40E-11	8.06E-12	4.00E-02	NA	2.35E-09	--
INDENO(1,2,3-CD)PYRENE	2.65E-10	1.70E-10	1.45E-11	NA	3.10E-01	--	4.51E-12
2-METHYLNAPHTHALENE	7.95E-11	5.09E-11	4.36E-12	NA	NA	--	--
NAPHTHALENE	9.32E-11	5.96E-11	5.11E-12	8.60E-04	NA	6.93E-08	--
PHENANTHRENE	8.33E-10	5.33E-10	4.57E-11	8.60E-04	NA	6.20E-07	--
PYRENE	7.88E-10	5.04E-10	4.32E-11	3.00E-02	NA	1.68E-08	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	3.80E-10	2.43E-10	2.08E-11	2.20E-02	NA	1.10E-08	--
BUTYLBENZYLPHTHALATE	5.53E-11	3.54E-11	3.03E-12	2.00E-01	NA	1.77E-10	--
CARBAZOLE	9.09E-11	5.82E-11	4.99E-12	NA	2.00E-02	--	9.97E-14
DIBENZOFURAN	1.25E-10	8.00E-11	6.85E-12	4.00E-03	NA	2.00E-08	--
DIBUTYLPHTHALATE	3.26E-11	2.08E-11	1.79E-12	1.00E-01	NA	2.08E-10	--
Volatiles							
2-BUTANONE	7.58E-12	4.85E-12	4.15E-13	2.90E-01	NA	1.67E-11	--
ACETONE	5.30E-10	3.39E-10	2.91E-11	1.00E-01	NA	3.39E-09	--
BENZENE	3.26E-12	2.08E-12	1.79E-13	1.70E-03	2.70E-02	1.23E-09	4.82E-15
CARBON DISULFIDE	7.58E-12	4.85E-12	4.15E-13	2.00E-01	NA	2.42E-11	--
TOLUENE	1.67E-12	1.07E-12	9.14E-14	1.10E-01	NA	9.69E-12	--
TRICHLOROETHENE	2.50E-12	1.60E-12	1.37E-13	6.00E-03	6.00E-03	2.67E-10	8.23E-16
VINYL CHLORIDE	7.58E-12	4.85E-12	4.15E-13	2.90E-02	3.10E-02	1.67E-10	1.29E-14
Cumulative Risk						**1.26E-02**	**2.69E-07**

TABLE K-7 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR RECREATIONAL USERS DUE TO EXPOSURES TO SURFACE SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Incidental Ingestion of Surface Soil**

Ingestion Rate = CR	200	mg/day
Exposure Frequency = EF	141	day/yr
Exposure Duration = ED	9	yr
Body Weight = BW	36	kg
Averaging Time (Noncancer) = AT	3,285	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	6.26E+03	1.34E-02	1.73E-03	1.00E+00	NA	1.34E-02	--
ANTIMONY	1.84E+00	3.95E-06	5.08E-07	4.00E-04	NA	9.87E-03	--
ARSENIC	5.88E+00	1.26E-05	1.62E-06	3.00E-04	1.50E+00	4.21E-02	2.43E-06
BARIUM	1.88E+02	4.03E-04	5.19E-05	7.00E-02	NA	5.76E-03	--
BERYLLIUM	3.70E-01	7.94E-07	1.02E-07	2.00E-03	NA	3.97E-04	--
CADMIUM	8.05E-01	1.73E-06	2.22E-07	5.00E-04	NA	3.46E-03	--
CHROMIUM	2.20E+01	4.72E-05	6.07E-06	3.00E-03	NA	1.57E-02	--
COBALT	6.39E+00	1.37E-05	1.76E-06	6.00E-02	NA	2.29E-04	--
COPPER	9.73E+01	2.09E-04	2.68E-05	3.70E-02	NA	5.64E-03	--
MANGANESE	2.83E+02	6.07E-04	7.81E-05	2.40E-02	NA	2.53E-02	--
MERCURY	7.91E-01	1.70E-06	2.18E-07	1.00E-04	NA	1.70E-02	--
NICKEL	2.11E+01	4.53E-05	5.82E-06	2.00E-02	NA	2.26E-03	--
SELENIUM	4.76E-01	1.02E-06	1.31E-07	5.00E-03	NA	2.04E-04	--
SILVER	2.50E-01	5.37E-07	6.90E-08	5.00E-03	NA	1.07E-04	--
THALLIUM	1.31E-01	2.81E-07	3.61E-08	6.60E-05	NA	4.26E-03	--
VANADIUM	2.42E+01	5.19E-05	6.68E-06	7.00E-03	NA	7.42E-03	--
ZINC	3.82E+02	8.20E-04	1.05E-04	3.00E-01	NA	2.73E-03	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.69E-01	3.63E-07	4.66E-08	6.00E-02	NA	6.04E-06	--
ACENAPHTHYLENE	5.30E-02	1.14E-07	1.46E-08	2.00E-02	NA	5.69E-06	--
ANTHRACENE	2.37E-01	5.09E-07	6.54E-08	3.00E-01	NA	1.70E-06	--
BENZ(A)ANTHRACENE	4.97E-01	1.07E-06	1.37E-07	NA	7.30E-01	--	1.00E-07
BENZO[A]PYRENE	4.96E-01	1.06E-06	1.37E-07	NA	7.30E+00	--	9.99E-07
BENZO(B)FLUORANTHENE	6.63E-01	1.42E-06	1.83E-07	NA	7.30E-01	--	1.34E-07
BENZO(G,H,I)PERYLENE	3.43E-01	7.36E-07	9.46E-08	3.00E-02	NA	2.45E-05	--
BENZO(K)FLUORANTHENE	2.50E-01	5.37E-07	6.90E-08	NA	7.30E-02	--	5.04E-09
CHRYSENE	5.69E-01	1.22E-06	1.57E-07	NA	7.30E-03	--	1.15E-09
DIBENZ[A, H]ANTHRACENE	1.57E-01	3.37E-07	4.33E-08	NA	7.30E+00	--	3.16E-07
FLUORANTHENE	8.32E-01	1.79E-06	2.30E-07	4.00E-02	NA	4.46E-05	--
FLUORENE	1.94E-01	4.16E-07	5.35E-08	4.00E-02	NA	1.04E-05	--
INDENO(1,2,3-CD)PYRENE	3.50E-01	7.51E-07	9.66E-08	NA	7.30E-01	--	7.05E-08
2-METHYLNAPHTHALENE	1.05E-01	2.25E-07	2.90E-08	2.00E-02	NA	1.13E-05	--
NAPHTHALENE	1.23E-01	2.64E-07	3.39E-08	2.00E-02	NA	1.32E-05	--
PHENANTHRENE	1.10E+00	2.36E-06	3.04E-07	2.00E-02	NA	1.18E-04	--
PYRENE	1.04E+00	2.23E-06	2.87E-07	3.00E-02	NA	7.44E-05	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	5.01E-01	1.08E-06	1.38E-07	2.00E-02	1.40E-02	5.38E-05	1.94E-09
BUTYLBENZYLPHTHALATE	7.30E-02	1.57E-07	2.01E-08	2.00E-01	NA	7.83E-07	--
CARBAZOLE	1.20E-01	2.58E-07	3.31E-08	NA	2.00E-02	--	6.62E-10
DIBENZOFURAN	1.65E-01	3.54E-07	4.55E-08	4.00E-03	NA	8.85E-05	--
DIBUTYLPHTHALATE	4.30E-02	9.23E-08	1.19E-08	1.00E-01	NA	9.23E-07	--
Volatiles							
2-BUTANONE	1.00E-02	2.15E-08	2.76E-09	6.00E-01	NA	3.58E-08	--
ACETONE	7.00E-01	1.50E-06	1.93E-07	1.00E-01	NA	1.50E-05	--
BENZENE	4.30E-03	9.23E-09	1.19E-09	3.00E-03	5.50E-02	3.08E-06	6.53E-11
CARBON DISULFIDE	1.00E-02	2.15E-08	2.76E-09	1.00E-01	NA	2.15E-07	--
TOLUENE	2.20E-03	4.72E-09	6.07E-10	2.00E-01	NA	2.36E-08	--
TRICHLOROETHENE	3.30E-03	7.08E-09	9.11E-10	6.00E-03	1.10E-02	1.18E-06	1.00E-11
VINYL CHLORIDE	1.00E-02	2.15E-08	2.76E-09	3.00E-03	1.50E+00	7.15E-06	4.14E-09
Cumulative Risk						**1.56E-01**	**4.07E-06**

TABLE K-8 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR RECREATIONAL USERS DUE TO EXPOSURE TO DERMAL CONTACT WITH SURFACE SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Dermal Contact with Surface Soil**

Surface Area for Contact = SA	2,900	cm2/event
Adherence Factor = AF	1	mg/cm2
Absorption Factor = ABS	chemical-specific	
Exposure Frequency = EF	0	event/yr
Exposure Duration = ED	9	yr
Body Weight = BW	36	kg
Averaging Time (Noncancer) = AT	3,285	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	6.26E+03	--	--	1.00E+00	NA	--	--
ANTIMONY	1.84E+00	--	--	6.00E-05	NA	--	--
ARSENIC	5.88E+00	1.17E-08	1.50E-09	3.00E-04	1.50E+00	3.89E-05	2.25E-09
BARIUM	1.88E+02	--	--	4.90E-03	NA	--	--
BERYLLIUM	3.70E-01	--	--	1.40E-05	NA	--	--
CADMIUM	8.05E-01	5.33E-11	6.85E-12	1.25E-05	NA	4.26E-06	--
CHROMIUM	2.20E+01	--	--	7.50E-05	NA	--	--
COBALT	6.39E+00	--	--	6.00E-02	NA	--	--
COPPER	9.73E+01	--	--	3.70E-02	NA	--	--
MANGANESE	2.83E+02	--	--	9.60E-04	NA	--	--
MERCURY	7.91E-01	--	--	1.00E-04	NA	--	--
NICKEL	2.11E+01	--	--	8.00E-04	NA	--	--
SELENIUM	4.76E-01	--	--	5.00E-03	NA	--	--
SILVER	2.50E-01	--	--	2.00E-04	NA	--	--
THALLIUM	1.31E-01	--	--	6.60E-05	NA	--	--
VANADIUM	2.42E+01	--	--	1.82E-04	NA	--	--
ZINC	3.82E+02	--	--	3.00E-01	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.69E-01	1.45E-09	1.87E-10	NA	NA	--	--
ACENAPHTHYLENE	5.30E-02	4.56E-10	5.87E-11	NA	NA	--	--
ANTHRACENE	2.37E-01	2.04E-09	2.62E-10	NA	NA	--	--
BENZ(A)ANTHRACENE	4.97E-01	4.28E-09	5.50E-10	NA	NA	--	--
BENZO[A]PYRENE	4.96E-01	4.27E-09	5.49E-10	NA	NA	--	--
BENZO(B)FLUORANTHENE	6.63E-01	5.71E-09	7.34E-10	NA	NA	--	--
BENZO(G,H,I)PERYLENE	3.43E-01	2.95E-09	3.80E-10	NA	NA	--	--
BENZO(K)FLUORANTHENE	2.50E-01	2.15E-09	2.77E-10	NA	NA	--	--
CHRYSENE	5.69E-01	4.90E-09	6.30E-10	NA	NA	--	--
DIBENZ[A, H]ANTHRACENE	1.57E-01	1.35E-09	1.74E-10	NA	NA	--	--
FLUORANTHENE	8.32E-01	7.16E-09	9.21E-10	NA	NA	--	--
FLUORENE	1.94E-01	1.67E-09	2.15E-10	NA	NA	--	--
INDENO(1,2,3-CD)PYRENE	3.50E-01	3.01E-09	3.87E-10	NA	NA	--	--
2-METHYLNAPHTHALENE	1.05E-01	9.04E-10	1.16E-10	NA	NA	--	--
NAPHTHALENE	1.23E-01	1.06E-09	1.36E-10	NA	NA	--	--
PHENANTHRENE	1.10E+00	9.47E-09	1.22E-09	NA	NA	--	--
PYRENE	1.04E+00	8.95E-09	1.15E-09	NA	NA	--	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	5.01E-01	3.32E-09	4.26E-10	2.00E-02	1.40E-02	1.66E-07	5.97E-12
BUTYLBENZYLPHTHALATE	7.30E-02	4.83E-10	6.21E-11	2.00E-01	NA	2.42E-09	--
CARBAZOLE	1.20E-01	7.95E-10	1.02E-10	NA	2.00E-02	--	2.04E-12
DIBENZOFURAN	1.65E-01	1.09E-09	1.40E-10	4.00E-03	NA	2.73E-07	--
DIBUTYLPHTHALATE	4.30E-02	2.85E-10	3.66E-11	1.00E-01	NA	2.85E-09	--
Volatiles							
2-BUTANONE	1.00E-02	--	--	6.00E-01	NA	--	--
ACETONE	7.00E-01	--	--	1.00E-01	NA	--	--
BENZENE	4.30E-03	--	--	3.00E-03	5.50E-02	--	--
CARBON DISULFIDE	1.00E-02	--	--	1.00E-01	NA	--	--
TOLUENE	2.20E-03	--	--	2.00E-01	NA	--	--
TRICHLOROETHENE	3.30E-03	--	--	6.00E-03	1.10E-02	--	--
VINYL CHLORIDE	1.00E-02	--	--	3.00E-03	1.50E+00	--	--
Cumulative Risk						**4.36E-05**	**2.26E-09**

TABLE K-9 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR RECREATIONAL USERS DUE TO INHALATION OF PARTICULATES FROM SURFACE SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Inhalation of Particles from Surface Soil**

Inhalation Rate = IR	0.833	m3/hr
Exposure Time = ET	10	hr/day
Exposure Frequency = EF	141	day/yr
Exposure Duration = ED	9	yr
Body Weight = BW	36	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	er (mg/kg-day)		
Inorganics							
ALUMINUM	4.74E-06	6.36E-07	5.45E-08	1.40E-03	NA	4.54E-04	--
ANTIMONY	1.39E-09	1.87E-10	1.60E-11	NA	NA	--	--
ARSENIC	4.45E-09	5.97E-10	5.12E-11	NA	1.50E+01	--	7.68E-10
BARIUM	1.42E-07	1.91E-08	1.64E-09	1.40E-04	NA	1.36E-04	--
BERYLLIUM	2.80E-10	3.76E-11	3.22E-12	5.70E-06	8.40E+00	6.59E-06	2.71E-11
CADMIUM	6.10E-10	8.18E-11	7.01E-12	NA	6.30E+00	--	4.42E-11
CHROMIUM	1.67E-08	2.23E-09	1.92E-10	NA	2.90E+02	--	5.55E-08
COBALT	4.84E-09	6.49E-10	5.56E-11	NA	NA	--	--
COPPER	7.37E-08	9.88E-09	8.47E-10	NA	NA	--	--
MANGANESE	2.14E-07	2.87E-08	2.46E-09	1.40E-05	NA	2.05E-03	--
MERCURY	5.99E-10	8.03E-11	6.89E-12	NA	NA	--	--
NICKEL	1.60E-08	2.14E-09	1.84E-10	NA	NA	--	--
SELENIUM	3.61E-10	4.83E-11	4.14E-12	NA	NA	--	--
SILVER	1.89E-10	2.54E-11	2.18E-12	NA	NA	--	--
THALLIUM	9.92E-11	1.33E-11	1.14E-12	NA	NA	--	--
VANADIUM	1.83E-08	2.46E-09	2.11E-10	NA	NA	--	--
ZINC	2.89E-07	3.88E-08	3.33E-09	NA	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	er (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.28E-10	1.72E-11	1.47E-12	6.00E-02	NA	2.86E-10	--
ACENAPHTHYLENE	4.02E-11	5.38E-12	4.61E-13	8.60E-04	NA	6.26E-09	--
ANTHRACENE	1.80E-10	2.41E-11	2.06E-12	3.00E-01	NA	8.02E-11	--
BENZ(A)ANTHRACENE	3.77E-10	5.05E-11	4.33E-12	NA	3.10E-01	--	1.34E-12
BENZO[A]PYRENE	3.76E-10	5.04E-11	4.32E-12	NA	3.10E+00	--	1.34E-11
BENZO(B)FLUORANTHENE	5.02E-10	6.73E-11	5.77E-12	NA	3.10E-01	--	1.79E-12
BENZO(G,H,I)PERYLENE	2.60E-10	3.48E-11	2.99E-12	3.00E-02	NA	1.16E-09	--
BENZO(K)FLUORANTHENE	1.89E-10	2.54E-11	2.18E-12	NA	3.10E-02	--	6.75E-14
CHRYSENE	4.31E-10	5.78E-11	4.95E-12	NA	3.10E-03	--	1.54E-14
DIBENZ[A, H]ANTHRACENE	1.19E-10	1.59E-11	1.37E-12	NA	3.10E+00	--	4.24E-12
FLUORANTHENE	6.30E-10	8.45E-11	7.24E-12	4.00E-02	NA	2.11E-09	--
FLUORENE	1.47E-10	1.97E-11	1.69E-12	4.00E-02	NA	4.93E-10	--
INDENO(1,2,3-CD)PYRENE	2.65E-10	3.56E-11	3.05E-12	NA	3.10E-01	--	9.45E-13
2-METHYLNAPHTHALENE	7.95E-11	1.07E-11	9.14E-13	NA	NA	--	--
NAPHTHALENE	9.32E-11	1.25E-11	1.07E-12	8.60E-04	NA	1.45E-08	--
PHENANTHRENE	8.33E-10	1.12E-10	9.58E-12	8.60E-04	NA	1.30E-07	--
PYRENE	7.88E-10	1.06E-10	9.05E-12	3.00E-02	NA	3.52E-09	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	3.80E-10	5.09E-11	4.36E-12	2.20E-02	NA	2.31E-09	--
BUTYLBENZYLPHTHALATE	5.53E-11	7.41E-12	6.36E-13	2.00E-01	NA	3.71E-11	--
CARBAZOLE	9.09E-11	1.22E-11	1.04E-12	NA	2.00E-02	--	2.09E-14
DIBENZOFURAN	1.25E-10	1.68E-11	1.44E-12	4.00E-03	NA	4.19E-09	--
DIBUTYLPHTHALATE	3.26E-11	4.37E-12	3.74E-13	1.00E-01	NA	4.37E-11	--
Volatiles							
2-BUTANONE	7.58E-12	1.02E-12	8.71E-14	2.90E-01	NA	3.50E-12	--
ACETONE	5.30E-10	7.11E-11	6.09E-12	1.00E-01	NA	7.11E-10	--
BENZENE	3.26E-12	4.37E-13	3.74E-14	1.70E-03	2.70E-02	2.57E-10	1.01E-15
CARBON DISULFIDE	7.58E-12	1.02E-12	8.71E-14	2.00E-01	NA	5.08E-12	--
TOLUENE	1.67E-12	2.23E-13	1.92E-14	1.10E-01	NA	2.03E-12	--
TRICHLOROETHENE	2.50E-12	3.35E-13	2.87E-14	6.00E-03	6.00E-03	5.59E-11	1.72E-16
VINYL CHLORIDE	7.58E-12	1.02E-12	8.71E-14	2.90E-02	3.10E-02	3.50E-11	2.70E-15
Cumulative Risk						**2.65E-03**	**5.64E-08**

TABLE K-10 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR COMMERCIAL WORKERS DUE TO EXPOSURES TO SURFACE SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Incidental Ingestion of Surface Soil**

Ingestion Rate = CR	50	mg/day
Exposure Frequency = EF	250	day/yr
Exposure Duration = ED	25	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	9,125	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	6.26E+03	3.06E-03	1.09E-03	1.00E+00	NA	3.06E-03	--
ANTIMONY	1.84E+00	9.00E-07	3.21E-07	4.00E-04	NA	2.25E-03	--
ARSENIC	5.88E+00	2.88E-06	1.03E-06	3.00E-04	1.50E+00	9.59E-03	1.54E-06
BARIUM	1.88E+02	9.20E-05	3.28E-05	7.00E-02	NA	1.31E-03	--
BERYLLIUM	3.70E-01	1.81E-07	6.46E-08	2.00E-03	NA	9.05E-05	--
CADMIUM	8.05E-01	3.94E-07	1.41E-07	5.00E-04	NA	7.88E-04	--
CHROMIUM	2.20E+01	1.08E-05	3.84E-06	3.00E-03	NA	3.59E-03	--
COBALT	6.39E+00	3.13E-06	1.12E-06	6.00E-02	NA	5.21E-05	--
COPPER	9.73E+01	4.76E-05	1.70E-05	3.70E-02	NA	1.29E-03	--
MANGANESE	2.83E+02	1.38E-04	4.94E-05	2.40E-02	NA	5.77E-03	--
MERCURY	7.91E-01	3.87E-07	1.38E-07	1.00E-04	NA	3.87E-03	--
NICKEL	2.11E+01	1.03E-05	3.69E-06	2.00E-02	NA	5.16E-04	--
SELENIUM	4.76E-01	2.33E-07	8.32E-08	5.00E-03	NA	4.66E-05	--
SILVER	2.50E-01	1.22E-07	4.37E-08	5.00E-03	NA	2.45E-05	--
THALLIUM	1.31E-01	6.41E-08	2.29E-08	6.60E-05	NA	9.71E-04	--
VANADIUM	2.42E+01	1.18E-05	4.23E-06	7.00E-03	NA	1.69E-03	--
ZINC	3.82E+02	1.87E-04	6.67E-05	3.00E-01	NA	6.23E-04	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.69E-01	8.27E-08	2.95E-08	6.00E-02	NA	1.38E-06	--
ACENAPHTHYLENE	5.30E-02	2.59E-08	9.26E-09	2.00E-02	NA	1.30E-06	--
ANTHRACENE	2.37E-01	1.16E-07	4.14E-08	3.00E-01	NA	3.86E-07	--
BENZ(A)ANTHRACENE	4.97E-01	2.43E-07	8.68E-08	NA	7.30E-01	--	6.34E-08
BENZO[A]PYRENE	4.96E-01	2.43E-07	8.67E-08	NA	7.30E+00	--	6.33E-07
BENZO(B)FLUORANTHENE	6.63E-01	3.24E-07	1.16E-07	NA	7.30E-01	--	8.46E-08
BENZO(G,H,I)PERYLENE	3.43E-01	1.68E-07	5.99E-08	3.00E-02	NA	5.59E-06	--
BENZO(K)FLUORANTHENE	2.50E-01	1.22E-07	4.37E-08	NA	7.30E-02	--	3.19E-09
CHRYSENE	5.69E-01	2.78E-07	9.94E-08	NA	7.30E-03	--	7.26E-10
DIBENZ[A, H]ANTHRACENE	1.57E-01	7.68E-08	2.74E-08	NA	7.30E+00	--	2.00E-07
FLUORANTHENE	8.32E-01	4.07E-07	1.45E-07	4.00E-02	NA	1.02E-05	--
FLUORENE	1.94E-01	9.49E-08	3.39E-08	4.00E-02	NA	2.37E-06	--
INDENO(1,2,3-CD)PYRENE	3.50E-01	1.71E-07	6.12E-08	NA	7.30E-01	--	4.46E-08
2-METHYLNAPHTHALENE	1.05E-01	5.14E-08	1.83E-08	2.00E-02	NA	2.57E-06	--
NAPHTHALENE	1.23E-01	6.02E-08	2.15E-08	2.00E-02	NA	3.01E-06	--
PHENANTHRENE	1.10E+00	5.38E-07	1.92E-07	2.00E-02	NA	2.69E-05	--
PYRENE	1.04E+00	5.09E-07	1.82E-07	3.00E-02	NA	1.70E-05	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	5.01E-01	2.45E-07	8.75E-08	2.00E-02	1.40E-02	1.23E-05	1.23E-09
BUTYLBENZYLPHTHALATE	7.30E-02	3.57E-08	1.28E-08	2.00E-01	NA	1.79E-07	--
CARBAZOLE	1.20E-01	5.87E-08	2.10E-08	NA	2.00E-02	--	4.19E-10
DIBENZOFURAN	1.65E-01	8.07E-08	2.88E-08	4.00E-03	NA	2.02E-05	--
DIBUTYLPHTHALATE	4.30E-02	2.10E-08	7.51E-09	1.00E-01	NA	2.10E-07	--
Volatiles							
2-BUTANONE	1.00E-02	4.89E-09	1.75E-09	6.00E-01	NA	8.15E-09	--
ACETONE	7.00E-01	3.42E-07	1.22E-07	1.00E-01	NA	3.42E-06	--
BENZENE	4.30E-03	2.10E-09	7.51E-10	3.00E-03	5.50E-02	7.01E-07	4.13E-11
CARBON DISULFIDE	1.00E-02	4.89E-09	1.75E-09	1.00E-01	NA	4.89E-08	--
TOLUENE	2.20E-03	1.08E-09	3.84E-10	2.00E-01	NA	5.38E-09	--
TRICHLOROETHENE	3.30E-03	1.61E-09	5.77E-10	6.00E-03	1.10E-02	2.69E-07	6.34E-12
VINYL CHLORIDE	1.00E-02	4.89E-09	1.75E-09	3.00E-03	1.50E+00	1.63E-06	2.62E-09
Cumulative Risk						**3.56E-02**	**2.57E-06**

TABLE K-11 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR COMMERCIAL WORKERS DUE TO EXPOSURE TO DERMAL CONTACT WITH SURFACE SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Dermal Contact with Surface Soil**

Surface Area for Contact = SA	5,700	cm2/event
Adherence Factor = AF	0.1	mg/cm2
Absorption Factor = ABS	chemical-specific	
Exposure Frequency = EF	250	event/yr
Exposure Duration = ED	25	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	9,125	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	6.26E+03	--	--	1.00E+00	NA	--	--
ANTIMONY	1.84E+00	--	--	6.00E-05	NA	--	--
ARSENIC	5.88E+00	9.84E-07	3.51E-07	3.00E-04	1.50E+00	3.28E-03	5.27E-07
BARIUM	1.88E+02	--	--	4.90E-03	NA	--	--
BERYLLIUM	3.70E-01	--	--	1.40E-05	NA	--	--
CADMIUM	8.05E-01	4.49E-09	1.60E-09	1.25E-05	NA	3.59E-04	--
CHROMIUM	2.20E+01	--	--	7.50E-05	NA	--	--
COBALT	6.39E+00	--	--	6.00E-02	NA	--	--
COPPER	9.73E+01	--	--	3.70E-02	NA	--	--
MANGANESE	2.83E+02	--	--	9.60E-04	NA	--	--
MERCURY	7.91E-01	--	--	1.00E-04	NA	--	--
NICKEL	2.11E+01	--	--	8.00E-04	NA	--	--
SELENIUM	4.76E-01	--	--	5.00E-03	NA	--	--
SILVER	2.50E-01	--	--	2.00E-04	NA	--	--
THALLIUM	1.31E-01	--	--	6.60E-05	NA	--	--
VANADIUM	2.42E+01	--	--	1.82E-04	NA	--	--
ZINC	3.82E+02	--	--	3.00E-01	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.69E-01	1.23E-07	4.38E-08	NA	NA	--	--
ACENAPHTHYLENE	5.30E-02	3.84E-08	1.37E-08	NA	NA	--	--
ANTHRACENE	2.37E-01	1.72E-07	6.14E-08	NA	NA	--	--
BENZ(A)ANTHRACENE	4.97E-01	3.60E-07	1.29E-07	NA	NA	--	--
BENZO[A]PYRENE	4.96E-01	3.60E-07	1.28E-07	NA	NA	--	--
BENZO(B)FLUORANTHENE	6.63E-01	4.81E-07	1.72E-07	NA	NA	--	--
BENZO(G,H,I)PERYLENE	3.43E-01	2.49E-07	8.88E-08	NA	NA	--	--
BENZO(K)FLUORANTHENE	2.50E-01	1.81E-07	6.47E-08	NA	NA	--	--
CHRYSENE	5.69E-01	4.13E-07	1.47E-07	NA	NA	--	--
DIBENZ[A, H]ANTHRACENE	1.57E-01	1.14E-07	4.07E-08	NA	NA	--	--
FLUORANTHENE	8.32E-01	6.03E-07	2.15E-07	NA	NA	--	--
FLUORENE	1.94E-01	1.41E-07	5.02E-08	NA	NA	--	--
INDENO(1,2,3-CD)PYRENE	3.50E-01	2.54E-07	9.06E-08	NA	NA	--	--
2-METHYLNAPHTHALENE	1.05E-01	7.61E-08	2.72E-08	NA	NA	--	--
NAPHTHALENE	1.23E-01	8.92E-08	3.19E-08	NA	NA	--	--
PHENANTHRENE	1.10E+00	7.98E-07	2.85E-07	NA	NA	--	--
PYRENE	1.04E+00	7.54E-07	2.69E-07	NA	NA	--	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	5.01E-01	2.79E-07	9.98E-08	2.00E-02	1.40E-02	1.40E-05	1.40E-09
BUTYLBENZYLPHTHALATE	7.30E-02	4.07E-08	1.45E-08	2.00E-01	NA	2.04E-07	--
CARBAZOLE	1.20E-01	6.69E-08	2.39E-08	NA	2.00E-02	--	4.78E-10
DIBENZOFURAN	1.65E-01	9.20E-08	3.29E-08	4.00E-03	NA	2.30E-05	--
DIBUTYLPHTHALATE	4.30E-02	2.40E-08	8.57E-09	1.00E-01	NA	2.40E-07	--
Volatiles							
2-BUTANONE	1.00E-02	--	--	6.00E-01	NA	--	--
ACETONE	7.00E-01	--	--	1.00E-01	NA	--	--
BENZENE	4.30E-03	--	--	3.00E-03	5.50E-02	--	--
CARBON DISULFIDE	1.00E-02	--	--	1.00E-01	NA	--	--
TOLUENE	2.20E-03	--	--	2.00E-01	NA	--	--
TRICHLOROETHENE	3.30E-03	--	--	6.00E-03	1.10E-02	--	--
VINYL CHLORIDE	1.00E-02	--	--	3.00E-03	1.50E+00	--	--
Cumulative Risk						**3.68E-03**	**5.29E-07**

TABLE K-12 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR COMMERCIAL WORKERS DUE TO INHALATION OF PARTICULATES FROM SURFACE SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Inhalation of Particles from Surface Soil**

Inhalation Rate = IR	0.833	m3/hr
Exposure Time = ET	8	hr/day
Exposure Frequency = EF	250	day/yr
Exposure Duration = ED	25	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	9,125	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	4.74E-06	3.09E-07	1.10E-07	1.40E-03	NA	2.21E-04	--
ANTIMONY	1.39E-09	9.09E-11	3.25E-11	NA	NA	--	--
ARSENIC	4.45E-09	2.90E-10	1.04E-10	NA	1.50E+01	--	1.56E-09
BARIUM	1.42E-07	9.29E-09	3.32E-09	1.40E-04	NA	6.63E-05	--
BERYLLIUM	2.80E-10	1.83E-11	6.53E-12	5.70E-06	8.40E+00	3.21E-06	5.48E-11
CADMIUM	6.10E-10	3.98E-11	1.42E-11	NA	6.30E+00	--	8.95E-11
CHROMIUM	1.67E-08	1.09E-09	3.88E-10	NA	2.90E+02	--	1.13E-07
COBALT	4.84E-09	3.16E-10	1.13E-10	NA	NA	--	--
COPPER	7.37E-08	4.81E-09	1.72E-09	NA	NA	--	--
MANGANESE	2.14E-07	1.40E-08	4.99E-09	1.40E-05	NA	9.99E-04	--
MERCURY	5.99E-10	3.91E-11	1.40E-11	NA	NA	--	--
NICKEL	1.60E-08	1.04E-09	3.72E-10	NA	NA	--	--
SELENIUM	3.61E-10	2.35E-11	8.40E-12	NA	NA	--	--
SILVER	1.89E-10	1.23E-11	4.41E-12	NA	NA	--	--
THALLIUM	9.92E-11	6.47E-12	2.31E-12	NA	NA	--	--
VANADIUM	1.83E-08	1.20E-09	4.27E-10	NA	NA	--	--
ZINC	2.89E-07	1.89E-08	6.74E-09	NA	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.28E-10	8.35E-12	2.98E-12	6.00E-02	NA	1.39E-10	--
ACENAPHTHYLENE	4.02E-11	2.62E-12	9.35E-13	8.60E-04	NA	3.04E-09	--
ANTHRACENE	1.80E-10	1.17E-11	4.18E-12	3.00E-01	NA	3.90E-11	--
BENZ(A)ANTHRACENE	3.77E-10	2.46E-11	8.77E-12	NA	3.10E-01	--	2.72E-12
BENZO[A]PYRENE	3.76E-10	2.45E-11	8.75E-12	NA	3.10E+00	--	2.71E-11
BENZO(B)FLUORANTHENE	5.02E-10	3.28E-11	1.17E-11	NA	3.10E-01	--	3.63E-12
BENZO(G,H,I)PERYLENE	2.60E-10	1.69E-11	6.05E-12	3.00E-02	NA	5.65E-10	--
BENZO(K)FLUORANTHENE	1.89E-10	1.23E-11	4.41E-12	NA	3.10E-02	--	1.37E-13
CHRYSENE	4.31E-10	2.81E-11	1.00E-11	NA	3.10E-03	--	3.11E-14
DIBENZ[A, H]ANTHRACENE	1.19E-10	7.76E-12	2.77E-12	NA	3.10E+00	--	8.59E-12
FLUORANTHENE	6.30E-10	4.11E-11	1.47E-11	4.00E-02	NA	1.03E-09	--
FLUORENE	1.47E-10	9.58E-12	3.42E-12	4.00E-02	NA	2.40E-10	--
INDENO(1,2,3-CD)PYRENE	2.65E-10	1.73E-11	6.17E-12	NA	3.10E-01	--	1.91E-12
2-METHYLNAPHTHALENE	7.95E-11	5.19E-12	1.85E-12	NA	NA	--	--
NAPHTHALENE	9.32E-11	6.08E-12	2.17E-12	8.60E-04	NA	7.07E-09	--
PHENANTHRENE	8.33E-10	5.43E-11	1.94E-11	8.60E-04	NA	6.32E-08	--
PYRENE	7.88E-10	5.14E-11	1.83E-11	3.00E-02	NA	1.71E-09	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	3.80E-10	2.47E-11	8.84E-12	2.20E-02	NA	1.12E-09	--
BUTYLBENZYLPHTHALATE	5.53E-11	3.61E-12	1.29E-12	2.00E-01	NA	1.80E-11	--
CARBAZOLE	9.09E-11	5.93E-12	2.12E-12	NA	2.00E-02	--	4.23E-14
DIBENZOFURAN	1.25E-10	8.15E-12	2.91E-12	4.00E-03	NA	2.04E-09	--
DIBUTYLPHTHALATE	3.26E-11	2.12E-12	7.59E-13	1.00E-01	NA	2.12E-11	--
Volatiles							
2-BUTANONE	7.58E-12	4.94E-13	1.76E-13	2.90E-01	NA	1.70E-12	--
ACETONE	5.30E-10	3.46E-11	1.23E-11	1.00E-01	NA	3.46E-10	--
BENZENE	3.26E-12	2.12E-13	7.59E-14	1.70E-03	2.70E-02	1.25E-10	2.05E-15
CARBON DISULFIDE	7.58E-12	4.94E-13	1.76E-13	2.00E-01	NA	2.47E-12	--
TOLUENE	1.67E-12	1.09E-13	3.88E-14	1.10E-01	NA	9.88E-13	--
TRICHLOROETHENE	2.50E-12	1.63E-13	5.82E-14	6.00E-03	6.00E-03	2.72E-11	3.49E-16
VINYL CHLORIDE	7.58E-12	4.94E-13	1.76E-13	2.90E-02	3.10E-02	1.70E-11	5.47E-15
Cumulative Risk						**1.29E-03**	**1.14E-07**

TABLE K-13 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CONSTRUCTION WORKERS DUE TO EXPOSURES TO TOTAL SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Incidental Ingestion of Total Soil**

Ingestion Rate = CR	480	mg/day
Exposure Frequency = EF	150	day/yr
Exposure Duration = ED	1	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	365	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	6.26E+03	1.76E-02	2.52E-04	1.00E+00	NA	1.76E-02	--
ANTIMONY	1.84E+00	5.19E-06	7.41E-08	4.00E-04	NA	1.30E-02	--
ARSENIC	5.88E+00	1.66E-05	2.37E-07	3.00E-04	1.50E+00	5.52E-02	3.55E-07
BARIUM	1.88E+02	5.30E-04	7.57E-06	7.00E-02	NA	7.57E-03	--
BERYLLIUM	3.70E-01	1.04E-06	1.49E-08	2.00E-03	NA	5.21E-04	--
CADMIUM	8.05E-01	2.27E-06	3.24E-08	5.00E-04	NA	4.54E-03	--
CHROMIUM	2.20E+01	6.20E-05	8.86E-07	3.00E-03	NA	2.07E-02	--
COBALT	6.39E+00	1.80E-05	2.57E-07	6.00E-02	NA	3.00E-04	--
COPPER	9.73E+01	2.74E-04	3.92E-06	3.70E-02	NA	7.41E-03	--
MANGANESE	2.83E+02	7.97E-04	1.14E-05	2.40E-02	NA	3.32E-02	--
MERCURY	7.91E-01	2.23E-06	3.18E-08	1.00E-04	NA	2.23E-02	--
NICKEL	2.11E+01	5.95E-05	8.49E-07	2.00E-02	NA	2.97E-03	--
SELENIUM	4.76E-01	1.34E-06	1.92E-08	5.00E-03	NA	2.68E-04	--
SILVER	2.50E-01	7.05E-07	1.01E-08	5.00E-03	NA	1.41E-04	--
THALLIUM	1.31E-01	3.69E-07	5.27E-09	6.60E-05	NA	5.59E-03	--
VANADIUM	2.42E+01	6.82E-05	9.74E-07	7.00E-03	NA	9.74E-03	--
ZINC	3.82E+02	1.08E-03	1.54E-05	3.00E-01	NA	3.59E-03	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.69E-01	4.76E-07	6.80E-09	6.00E-02	NA	7.94E-06	--
ACENAPHTHYLENE	5.30E-02	1.49E-07	2.13E-09	2.00E-02	NA	7.47E-06	--
ANTHRACENE	2.37E-01	6.68E-07	9.54E-09	3.00E-01	NA	2.23E-06	--
BENZ(A)ANTHRACENE	4.97E-01	1.40E-06	2.00E-08	NA	7.30E-01	--	1.46E-08
BENZO[A]PYRENE	4.96E-01	1.40E-06	2.00E-08	NA	7.30E+00	--	1.46E-07
BENZO(B)FLUORANTHENE	6.63E-01	1.87E-06	2.67E-08	NA	7.30E-01	--	1.95E-08
BENZO(G,H,I)PERYLENE	3.43E-01	9.67E-07	1.38E-08	3.00E-02	NA	3.22E-05	--
BENZO(K)FLUORANTHENE	2.50E-01	7.05E-07	1.01E-08	NA	7.30E-02	--	7.35E-10
CHRYSENE	5.69E-01	1.60E-06	2.29E-08	NA	7.30E-03	--	1.67E-10
DIBENZ[A, H]ANTHRACENE	1.57E-01	4.42E-07	6.32E-09	NA	7.30E+00	--	4.61E-08
FLUORANTHENE	8.32E-01	2.34E-06	3.35E-08	4.00E-02	NA	5.86E-05	--
FLUORENE	1.94E-01	5.47E-07	7.81E-09	4.00E-02	NA	1.37E-05	--
INDENO(1,2,3-CD)PYRENE	3.50E-01	9.86E-07	1.41E-08	NA	7.30E-01	--	1.03E-08
2-METHYLNAPHTHALENE	1.05E-01	2.96E-07	4.23E-09	2.00E-02	NA	1.48E-05	--
NAPHTHALENE	1.23E-01	3.47E-07	4.95E-09	2.00E-02	NA	1.73E-05	--
PHENANTHRENE	1.10E+00	3.10E-06	4.43E-08	2.00E-02	NA	1.55E-04	--
PYRENE	1.04E+00	2.93E-06	4.19E-08	3.00E-02	NA	9.77E-05	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	5.01E-01	1.41E-06	2.02E-08	2.00E-02	1.40E-02	7.06E-05	2.82E-10
BUTYLBENZYLPHTHALATE	7.30E-02	2.06E-07	2.94E-09	2.00E-01	NA	1.03E-06	--
CARBAZOLE	1.20E-01	3.38E-07	4.83E-09	NA	2.00E-02	--	9.66E-11
DIBENZOFURAN	1.65E-01	4.65E-07	6.64E-09	4.00E-03	NA	1.16E-04	--
DIBUTYLPHTHALATE	4.30E-02	1.21E-07	1.73E-09	1.00E-01	NA	1.21E-06	--
Volatiles							
2-BUTANONE	1.00E-02	2.82E-08	4.03E-10	6.00E-01	NA	4.70E-08	--
ACETONE	7.00E-01	1.97E-06	2.82E-08	1.00E-01	NA	1.97E-05	--
BENZENE	4.30E-03	1.21E-08	1.73E-10	3.00E-03	5.50E-02	4.04E-06	9.52E-12
CARBON DISULFIDE	1.00E-02	2.82E-08	4.03E-10	1.00E-01	NA	2.82E-07	--
TOLUENE	2.20E-03	6.20E-09	8.86E-11	2.00E-01	NA	3.10E-08	--
TRICHLOROETHENE	3.30E-03	9.30E-09	1.33E-10	6.00E-03	1.10E-02	1.55E-06	1.46E-12
VINYL CHLORIDE	1.00E-02	2.82E-08	4.03E-10	3.00E-03	1.50E+00	9.39E-06	6.04E-10
Cumulative Risk						**2.05E-01**	**5.93E-07**

TABLE K-14 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CONSTRUCTION WORKER DUE TO EXPOSURE TO DERMAL CONTACT WITH TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

*** RME- Dermal Contact with Total Soil**

Surface Area for Contact = SA	3,300	cm2/event
Adherence Factor = AF	0.3	mg/cm2
Absorption Factor = ABS	chemical-specific	
Exposure Frequency = EF	150	event/yr
Exposure Duration = ED	1	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	365	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	6.26E+03	--	--	1.00E+00	NA	--	--
ANTIMONY	1.84E+00	--	--	6.00E-05	NA	--	--
ARSENIC	5.88E+00	1.03E-06	1.46E-08	3.00E-04	1.50E+00	3.42E-03	2.20E-08
BARIUM	1.88E+02	--	--	4.90E-03	NA	--	--
BERYLLIUM	3.70E-01	--	--	1.40E-05	NA	--	--
CADMIUM	8.05E-01	4.68E-09	6.68E-11	1.25E-05	NA	3.74E-04	--
CHROMIUM	2.20E+01	--	--	7.50E-05	NA	--	--
COBALT	6.39E+00	--	--	6.00E-02	NA	--	--
COPPER	9.73E+01	--	--	3.70E-02	NA	--	--
MANGANESE	2.83E+02	--	--	9.60E-04	NA	--	--
MERCURY	7.91E-01	--	--	1.00E-04	NA	--	--
NICKEL	2.11E+01	--	--	8.00E-04	NA	--	--
SELENIUM	4.76E-01	--	--	5.00E-03	NA	--	--
SILVER	2.50E-01	--	--	2.00E-04	NA	--	--
THALLIUM	1.31E-01	--	--	6.60E-05	NA	--	--
VANADIUM	2.42E+01	--	--	1.82E-04	NA	--	--
ZINC	3.82E+02	--	--	3.00E-01	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.69E-01	1.28E-07	1.82E-09	NA	NA	--	--
ACENAPHTHYLENE	5.30E-02	4.00E-08	5.72E-10	NA	NA	--	--
ANTHRACENE	2.37E-01	1.79E-07	2.56E-09	NA	NA	--	--
BENZ(A)ANTHRACENE	4.97E-01	3.76E-07	5.36E-09	NA	NA	--	--
BENZO[A]PYRENE	4.96E-01	3.75E-07	5.35E-09	NA	NA	--	--
BENZO(B)FLUORANTHENE	6.63E-01	5.01E-07	7.16E-09	NA	NA	--	--
BENZO(G,H,I)PERYLENE	3.43E-01	2.59E-07	3.70E-09	NA	NA	--	--
BENZO(K)FLUORANTHENE	2.50E-01	1.89E-07	2.70E-09	NA	NA	--	--
CHRYSENE	5.69E-01	4.30E-07	6.14E-09	NA	NA	--	--
DIBENZ[A, H]ANTHRACENE	1.57E-01	1.19E-07	1.69E-09	NA	NA	--	--
FLUORANTHENE	8.32E-01	6.29E-07	8.98E-09	NA	NA	--	--
FLUORENE	1.94E-01	1.47E-07	2.09E-09	NA	NA	--	--
INDENO(1,2,3-CD)PYRENE	3.50E-01	2.64E-07	3.78E-09	NA	NA	--	--
2-METHYLNAPHTHALENE	1.05E-01	7.93E-08	1.13E-09	NA	NA	--	--
NAPHTHALENE	1.23E-01	9.29E-08	1.33E-09	NA	NA	--	--
PHENANTHRENE	1.10E+00	8.31E-07	1.19E-08	NA	NA	--	--
PYRENE	1.04E+00	7.86E-07	1.12E-08	NA	NA	--	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	5.01E-01	2.91E-07	4.16E-09	2.00E-02	1.40E-02	1.46E-05	5.82E-11
BUTYLBENZYLPHTHALATE	7.30E-02	4.24E-08	6.06E-10	2.00E-01	NA	2.12E-07	--
CARBAZOLE	1.20E-01	6.97E-08	9.96E-10	NA	2.00E-02	--	1.99E-11
DIBENZOFURAN	1.65E-01	9.59E-08	1.37E-09	4.00E-03	NA	2.40E-05	--
DIBUTYLPHTHALATE	4.30E-02	2.50E-08	3.57E-10	1.00E-01	NA	2.50E-07	--
Volatiles							
2-BUTANONE	1.00E-02	--	--	6.00E-01	NA	--	--
ACETONE	7.00E-01	--	--	1.00E-01	NA	--	--
BENZENE	4.30E-03	--	--	3.00E-03	5.50E-02	--	--
CARBON DISULFIDE	1.00E-02	--	--	1.00E-01	NA	--	--
TOLUENE	2.20E-03	--	--	2.00E-01	NA	--	--
TRICHLOROETHENE	3.30E-03	--	--	6.00E-03	1.10E-02	--	--
VINYL CHLORIDE	1.00E-02	--	--	3.00E-03	1.50E+00	--	--
Cumulative Risk						**3.83E-03**	**2.20E-08**

TABLE K-15 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CONSTRUCTION WORKERS DUE TO INHALATION OF PARTICULATES FROM TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Fill Area

* RME- Inhalation of Particles from Total Soil

Inhalation Rate = IR	0.833	m3/hr
Exposure Time = ET	8	hr/day
Exposure Frequency = EF	150	day/yr
Exposure Duration = ED	1	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	365	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	4.74E-06	1.86E-07	2.65E-09	1.40E-03	NA	1.33E-04	--
ANTIMONY	1.39E-09	5.45E-11	7.79E-13	NA	NA	--	--
ARSENIC	4.45E-09	1.74E-10	2.49E-12	NA	1.50E+01	--	3.73E-11
BARIUM	1.42E-07	5.57E-09	7.96E-11	1.40E-04	NA	3.98E-05	--
BERYLLIUM	2.80E-10	1.10E-11	1.57E-13	5.70E-06	8.40E+00	1.92E-06	1.32E-12
CADMIUM	6.10E-10	2.39E-11	3.41E-13	NA	6.30E+00	--	2.15E-12
CHROMIUM	1.67E-08	6.52E-10	9.32E-12	NA	2.90E+02	--	2.70E-09
COBALT	4.84E-09	1.89E-10	2.71E-12	NA	NA	--	--
COPPER	7.37E-08	2.88E-09	4.12E-11	NA	NA	--	--
MANGANESE	2.14E-07	8.39E-09	1.20E-10	1.40E-05	NA	5.99E-04	--
MERCURY	5.99E-10	2.34E-11	3.35E-13	NA	NA	--	--
NICKEL	1.60E-08	6.25E-10	8.93E-12	NA	NA	--	--
SELENIUM	3.61E-10	1.41E-11	2.02E-13	NA	NA	--	--
SILVER	1.89E-10	7.41E-12	1.06E-13	NA	NA	--	--
THALLIUM	9.92E-11	3.88E-12	5.55E-14	NA	NA	--	--
VANADIUM	1.83E-08	7.17E-10	1.02E-11	NA	NA	--	--
ZINC	2.89E-07	1.13E-08	1.62E-10	NA	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.28E-10	5.01E-12	7.16E-14	6.00E-02	NA	8.35E-11	--
ACENAPHTHYLENE	4.02E-11	1.57E-12	2.24E-14	8.60E-04	NA	1.83E-09	--
ANTHRACENE	1.80E-10	7.02E-12	1.00E-13	3.00E-01	NA	2.34E-11	--
BENZ(A)ANTHRACENE	3.77E-10	1.47E-11	2.10E-13	NA	3.10E-01	--	6.52E-14
BENZO[A]PYRENE	3.76E-10	1.47E-11	2.10E-13	NA	3.10E+00	--	6.51E-13
BENZO(B)FLUORANTHENE	5.02E-10	1.97E-11	2.81E-13	NA	3.10E-01	--	8.70E-14
BENZO(G,H,I)PERYLENE	2.60E-10	1.02E-11	1.45E-13	3.00E-02	NA	3.39E-10	--
BENZO(K)FLUORANTHENE	1.89E-10	7.41E-12	1.06E-13	NA	3.10E-02	--	3.28E-15
CHRYSENE	4.31E-10	1.69E-11	2.41E-13	NA	3.10E-03	--	7.47E-16
DIBENZ[A, H]ANTHRACENE	1.19E-10	4.65E-12	6.65E-14	NA	3.10E+00	--	2.06E-13
FLUORANTHENE	6.30E-10	2.47E-11	3.52E-13	4.00E-02	NA	6.16E-10	--
FLUORENE	1.47E-10	5.75E-12	8.21E-14	4.00E-02	NA	1.44E-10	--
INDENO(1,2,3-CD)PYRENE	2.65E-10	1.04E-11	1.48E-13	NA	3.10E-01	--	4.59E-14
2-METHYLNAPHTHALENE	7.95E-11	3.11E-12	4.45E-14	NA	NA	--	--
NAPHTHALENE	9.32E-11	3.65E-12	5.21E-14	8.60E-04	NA	4.24E-09	--
PHENANTHRENE	8.33E-10	3.26E-11	4.66E-13	8.60E-04	NA	3.79E-08	--
PYRENE	7.88E-10	3.08E-11	4.40E-13	3.00E-02	NA	1.03E-09	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	3.80E-10	1.48E-11	2.12E-13	2.20E-02	NA	6.75E-10	--
BUTYLBENZYLPHTHALATE	5.53E-11	2.16E-12	3.09E-14	2.00E-01	NA	1.08E-11	--
CARBAZOLE	9.09E-11	3.56E-12	5.08E-14	NA	2.00E-02	--	1.02E-15
DIBENZOFURAN	1.25E-10	4.89E-12	6.99E-14	4.00E-03	NA	1.22E-09	--
DIBUTYLPHTHALATE	3.26E-11	1.27E-12	1.82E-14	1.00E-01	NA	1.27E-11	--
Volatiles							
2-BUTANONE	7.58E-12	2.96E-13	4.23E-15	2.90E-01	NA	1.02E-12	--
ACETONE	5.30E-10	2.07E-11	2.96E-13	1.00E-01	NA	2.07E-10	--
BENZENE	3.26E-12	1.27E-13	1.82E-15	1.70E-03	2.70E-02	7.50E-11	4.92E-17
CARBON DISULFIDE	7.58E-12	2.96E-13	4.23E-15	2.00E-01	NA	1.48E-12	--
TOLUENE	1.67E-12	6.52E-14	9.32E-16	1.10E-01	NA	5.93E-13	--
TRICHLOROETHENE	2.50E-12	9.78E-14	1.40E-15	6.00E-03	6.00E-03	1.63E-11	8.38E-18
VINYL CHLORIDE	7.58E-12	2.96E-13	4.23E-15	2.90E-02	3.10E-02	1.02E-11	1.31E-16
Cumulative Risk						**7.73E-04**	**2.74E-09**

TABLE K-16 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURES TO VEGETABLE INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: **Fill Area**

Determine Daily intake of COPC from produce:

$$I_{ag} = [((Pd + Pv + Pr) * Crag) + (Pr * CR_{pp}) + (Pr_{bg} * CR_{bg})] * F_{ag}$$

I_{ag} = Daily intake of COPC from produce in mg/kg-day (dry weight).
Pd = Above ground exposed produce concentration due to direct deposition onto plant surface in mg/kg.
Pv = Aboveground exposed produce concentration due to air-to-plant transfer in mg/kg.
Pr = Aboveground exposed and protected produce concetration due to root uptake in mg/kg.
Pr_{bg} = Belowground produce concentration due to root uptake in mg/kg.
CR_{ag} = Consumption rate of exposed aboveground produce in kg/kg-day.

Adult =	0.0003	kg/kg-day
Child =	0.00042	kg/kg-day

CR_{pp} = Consumption rate of protected aboveground produce in kg/kg-day.

Adult =	0.00057	kg/kg-day
Child =	0.00077	kg/kg-day

CR_{bg} = Consumption rate of belowground produce in kg/kg-day.

Adult =	0.00014	kg/kg-day
Child =	0.00022	kg/kg-day

F_{ag} = Fraction of produce that is contaminated (unitless).

Adult Resident =	0.25
Child Resident =	0.25

Exposure Frequency = EF	60	day/yr
Exposure Duration = ED	24	yr
Averaging Time (Noncancer) = AT	8,760	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = $I_{ag} * EF * ED / (AT)$

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	Conc in plant (dw) aboveground (mg/kg)	Conc in plant (dw) belowground (mg/kg)	Protected Vegetative Conc in Plant (dw) (mg/kg)	Daily COPC Intake (I_{ag}) (mg/kg-day)	NCADI	CADI	Chronic RfD	SF	HQ	Risk
PAHs										
ACENAPHTHENE	3.35E-02	9.26E-01	3.35E-02	3.97E-05	6.52E-06	2.24E-06	6.00E-02	NA	1.09E-04	--
ACENAPHTHYLENE	9.12E-03	9.12E-03	9.12E-03	2.30E-06	3.78E-07	1.30E-07	2.00E-02	NA	1.89E-05	--
ANTHRACENE	2.39E-02	6.54E-03	2.39E-02	5.44E-06	8.93E-07	3.06E-07	3.00E-01	NA	2.98E-06	--
BENZ[A]ANTHRACENE	1.00E-02	1.05E-02	1.00E-02	2.55E-06	4.19E-07	1.44E-07	NA	7.30E-01	--	1.05E-07
BENZO[A]PYRENE	5.51E-03	6.25E-03	5.51E-03	1.42E-06	2.33E-07	7.98E-08	NA	7.30E+00	--	5.83E-07
BENZO[B]FLUORANTHENE	6.68E-03	1.10E-02	6.68E-03	1.84E-06	3.02E-07	1.04E-07	NA	7.30E-01	--	7.56E-08
BENZO[G,H,I]PERYLENE	2.09E-03	2.09E-03	2.09E-03	5.28E-07	8.67E-08	2.97E-08	3.00E-02	NA	2.89E-06	--
BENZO[K]FLUORANTHENE	2.53E-03	4.15E-03	2.53E-03	6.94E-07	1.14E-07	3.91E-08	NA	7.30E-02	--	2.86E-09
CHRYSENE	1.06E-02	1.17E-02	1.06E-02	2.72E-06	4.47E-07	1.53E-07	NA	7.30E-03	--	1.12E-09
DIBENZ[A,H]ANTHRACENE	9.99E-04	2.25E-03	9.99E-04	2.96E-07	4.86E-08	1.67E-08	NA	7.30E+00	--	1.22E-07
FLUORANTHENE	3.71E-02	3.24E-02	3.71E-02	9.21E-06	1.51E-06	5.19E-07	4.00E-02	NA	3.78E-05	--
FLUORENE	2.93E-02	9.62E-03	2.93E-02	6.71E-06	1.10E-06	3.78E-07	4.00E-02	NA	2.76E-05	--
INDENO[1,2,3-C,D]PYRENE	1.37E-03	4.17E-03	1.37E-03	4.43E-07	7.28E-08	2.49E-08	NA	7.30E-01	--	1.82E-08
2-METHYLNAPHTHALENE	4.57E-02	8.64E-01	4.57E-02	4.02E-05	6.60E-06	2.26E-06	2.00E-02	NA	3.30E-04	--
NAPHTHALENE	5.35E-02	1.01E+00	5.35E-02	4.71E-05	7.74E-06	2.65E-06	2.00E-02	NA	3.87E-04	--
PHENANTHRENE	9.99E-02	1.64E-02	9.99E-02	2.23E-05	3.67E-06	1.26E-06	2.00E-02	NA	1.83E-04	--
PYRENE	5.18E-02	2.54E-02	5.18E-02	1.22E-05	2.00E-06	6.85E-07	3.00E-02	NA	6.66E-05	--

Chemical of Concern	Conc in plant (dw) aboveground (mg/kg)	Conc in plant (dw) belowground (mg/kg)	Protected Vegetative Conc in Plant (dw) (mg/kg)	Daily COPC Intake (I_{ag}) (mg/kg-day)	NCADI	CADI	Chronic RfD	SF	HQ	Risk
SEMIVOLATILES										
BIS(2-ETHYLHEXYL)PHTHALATE	1.90E-02	1.07E-02	1.90E-02	4.51E-06	7.42E-07	2.54E-07	2.00E-02	1.40E-02	3.71E-05	3.56E-09
BUTYLBENZYLPHTHALATE	7.96E-03	3.12E-03	7.96E-03	1.84E-06	3.02E-07	1.04E-07	2.00E-01	NA	1.51E-06	--
CARBAZOLE	3.29E-02	3.29E-02	3.29E-02	8.30E-06	1.37E-06	4.68E-07	NA	2.00E-02	--	9.36E-09
DIBENZOFURAN	2.66E-02	2.66E-02	2.66E-02	6.70E-06	1.10E-06	3.78E-07	4.00E-03	NA	2.76E-04	--
DIBUTYLPHTHALATE	3.11E-03	2.76E-02	3.11E-03	1.64E-06	2.70E-07	9.27E-08	1.00E-01	NA	2.70E-06	--
VOLATILES										
2-BUTANONE	2.67E-01	2.86E+00	2.67E-01	1.58E-04	2.60E-05	8.91E-06	6.00E-01	NA	4.33E-05	--
ACETONE	3.64E+01	4.76E+02	3.64E+01	2.46E-02	4.04E-03	1.39E-03	1.00E-01	NA	4.04E-02	--
BENZENE	9.68E-03	1.15E-01	9.68E-03	6.12E-06	1.01E-06	3.45E-07	3.00E-03	5.50E-02	3.35E-04	1.90E-08
CARBON DISULFIDE	2.70E-02	2.79E-01	2.70E-02	1.56E-05	2.57E-06	8.81E-07	1.00E-01	NA	2.57E-05	--
TOLUENE	2.44E-03	5.13E-02	2.44E-03	2.33E-06	3.82E-07	1.31E-07	2.00E-01	NA	1.91E-06	--
TRICHLOROETHENE	5.02E-03	7.00E-02	5.02E-03	3.54E-06	5.82E-07	1.99E-07	6.00E-03	1.10E-02	9.70E-05	2.19E-09
VINYL CHLORIDE	8.42E-02	7.29E-01	8.42E-02	4.38E-05	7.20E-06	2.47E-06	3.00E-03	1.50E+00	2.40E-03	3.71E-06
METALS										
ALUMINUM	2.50E+01	2.50E+01	4.07E+00	3.33E-03	5.48E-04	1.88E-04	1.00E+00	NA	5.48E-04	--
ANTIMONY	5.87E-02	5.52E-02	5.87E-02	1.47E-05	2.42E-06	8.28E-07	4.00E-04	NA	6.04E-03	--
ARSENIC	3.72E-02	4.70E-02	3.72E-02	9.74E-06	1.60E-06	5.49E-07	3.00E-04	1.50E+00	5.34E-03	8.24E-07
BARIUM	6.05E+00	2.82E+00	6.05E+00	1.42E-03	2.33E-04	7.98E-05	7.00E-02	NA	3.32E-03	--
BERYLLIUM	9.55E-04	5.55E-04	9.55E-04	2.27E-07	3.73E-08	1.28E-08	2.00E-03	NA	1.87E-05	--
CADMIUM	1.01E-01	5.15E-02	1.01E-01	2.37E-05	3.89E-06	1.34E-06	5.00E-04	NA	7.79E-03	--
CHROMIUM	1.07E-01	9.90E-02	1.07E-01	2.68E-05	4.41E-06	1.51E-06	3.00E-03	NA	1.47E-03	--
COBALT	1.28E-01	1.28E-01	4.47E-02	2.04E-05	3.36E-06	1.15E-06	6.00E-02	NA	5.60E-05	--
COPPER	1.19E+01	1.19E+01	1.19E+01	2.99E-03	4.92E-04	1.69E-04	3.70E-02	NA	1.33E-02	--
LEAD	6.01E+00	3.98E+00	6.01E+00	1.45E-03	2.38E-04	8.15E-05	NA	NA	--	--
MANGANESE	7.08E+01	7.08E+01	1.42E+01	9.80E-03	1.61E-03	5.52E-04	2.40E-02	NA	6.71E-02	--
MERCURY	1.15E-02	2.85E-02	1.15E-02	3.49E-06	5.74E-07	1.97E-07	1.00E-04	NA	5.74E-03	--
NICKEL	1.96E-01	1.69E-01	1.96E-01	4.86E-05	7.99E-06	2.74E-06	2.00E-02	NA	4.00E-04	--
SELENIUM	7.62E-03	9.28E-03	7.62E-03	1.98E-06	3.26E-07	1.12E-07	5.00E-03	NA	6.51E-05	--
SILVER	3.45E-02	2.50E-02	3.45E-02	8.38E-06	1.38E-06	4.72E-07	5.00E-03	NA	2.75E-04	--
THALLIUM	1.12E-04	5.24E-05	1.12E-04	2.63E-08	4.32E-09	1.48E-09	6.60E-05	NA	6.55E-05	--
VANADIUM	1.33E-01	1.33E-01	7.26E-02	2.50E-05	4.11E-06	1.41E-06	7.00E-03	NA	5.87E-04	--
ZINC	1.76E+01	1.68E+01	1.76E+01	4.41E-03	7.25E-04	2.49E-04	3.00E-01	NA	2.42E-03	--
Cumulative Risk									**1.59E-01**	**5.47E-06**

TABLE K-17 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURES TO VEGETABLE INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: **Fill Area**

Determine Daily intake of COPC from produce:

$$I_{ag} = [((Pd + Pv + Pr) * Crag) + (Pr * CR_{pp}) + (Pr_{bg} * CR_{bg})] * F_{ag}$$

I_{ag} = Daily intake of COPC from produce in mg/kg-day (dry weight).
Pd = Above ground exposed produce concentration due to direct deposition onto plant surface in mg/kg.
Pv = Aboveground exposed produce concentration due to air-to-plant transfer in mg/kg.
Pr = Aboveground exposed and protected produce concetration due to root uptake in mg/kg.
Pr_{bg} = Belowground produce concentration due to root uptake in mg/kg.
CR_{ag} = Consumption rate of exposed aboveground produce in kg/kg-day.

Adult =	0.0003	kg/kg-day
Child =	0.00042	kg/kg-day

CR_{pp} = Consumption rate of protected aboveground produce in kg/kg-day.

Adult =	0.00057	kg/kg-day
Child =	0.00077	kg/kg-day

CR_{bg} = Consumption rate of belowground produce in kg/kg-day.

Adult =	0.00014	kg/kg-day
Child =	0.00022	kg/kg-day

F_{ag} = Fraction of produce that is contaminated (unitless).

Adult Resident =	0.25
Child Resident =	0.25

Exposure Frequency = EF	60	day/yr
Exposure Duration = ED	6	yr
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = I_{ag} * EF * ED / (AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	Conc in plant (dw) aboveground (mg/kg)	Conc in plant (dw) belowground (mg/kg)	Protected Vegetative Conc in Plant (dw) (mg/kg)	Daily COPC Intake (I_{ag}) (mg/kg-day)	NCADI	CADI	Chronic RfD	SF	HQ	Risk
PAHs										
ACENAPHTHENE	3.35E-02	9.26E-01	3.35E-02	6.09E-05	1.00E-05	8.58E-07	6.00E-02	NA	1.67E-04	--
ACENAPHTHYLENE	9.12E-03	9.12E-03	9.12E-03	3.21E-06	5.28E-07	4.53E-08	2.00E-02	NA	2.64E-05	--
ANTHRACENE	2.39E-02	6.54E-03	2.39E-02	7.48E-06	1.23E-06	1.05E-07	3.00E-01	NA	4.10E-06	--
BENZ[A]ANTHRACENE	1.00E-02	1.05E-02	1.00E-02	3.56E-06	5.86E-07	5.02E-08	NA	7.30E-01	--	3.67E-08
BENZO[A]PYRENE	5.51E-03	6.25E-03	5.51E-03	1.98E-06	3.26E-07	2.79E-08	NA	7.30E+00	--	2.04E-07
BENZO[B]FLUORANTHENE	6.68E-03	1.10E-02	6.68E-03	2.59E-06	4.26E-07	3.65E-08	NA	7.30E-01	--	2.67E-08
BENZO[G,H,I]PERYLENE	2.09E-03	2.09E-03	2.09E-03	7.37E-07	1.21E-07	1.04E-08	3.00E-02	NA	4.04E-06	--
BENZO[K]FLUORANTHENE	2.53E-03	4.15E-03	2.53E-03	9.79E-07	1.61E-07	1.38E-08	NA	7.30E-02	--	1.01E-09
CHRYSENE	1.06E-02	1.17E-02	1.06E-02	3.80E-06	6.25E-07	5.35E-08	NA	7.30E-03	--	3.91E-10
DIBENZ[A,H]ANTHRACENE	9.99E-04	2.25E-03	9.99E-04	4.21E-07	6.91E-08	5.93E-09	NA	7.30E+00	--	4.33E-08
FLUORANTHENE	3.71E-02	3.24E-02	3.71E-02	1.28E-05	2.11E-06	1.81E-07	4.00E-02	NA	5.27E-05	--
FLUORENE	2.93E-02	9.62E-03	2.93E-02	9.24E-06	1.52E-06	1.30E-07	4.00E-02	NA	3.80E-05	--
INDENO[1,2,3-C,D]PYRENE	1.37E-03	4.17E-03	1.37E-03	6.35E-07	1.04E-07	8.95E-09	NA	7.30E-01	--	6.53E-09
2-METHYLNAPHTHALENE	4.57E-02	8.64E-01	4.57E-02	6.11E-05	1.00E-05	8.61E-07	2.00E-02	NA	5.02E-04	--
NAPHTHALENE	5.35E-02	1.01E+00	5.35E-02	7.16E-05	1.18E-05	1.01E-06	2.00E-02	NA	5.88E-04	--
PHENANTHRENE	9.99E-02	1.64E-02	9.99E-02	3.06E-05	5.03E-06	4.31E-07	2.00E-02	NA	2.52E-04	--
PYRENE	5.18E-02	2.54E-02	5.18E-02	1.68E-05	2.76E-06	2.37E-07	3.00E-02	NA	9.21E-05	--

Chemical of Concern	Conc in plant (dw) aboveground (mg/kg)	Conc in plant (dw) belowground (mg/kg)	Protected Vegetative Conc in Plant (dw) (mg/kg)	Daily COPC Intake (I_{ag}) (mg/kg-day)	NCADI	CADI	Chronic RfD	SF	HQ	Risk
SEMIVOLATILES										
BIS(2-ETHYLHEXYL)PHTHALATE	1.90E-02	1.07E-02	1.90E-02	6.25E-06	1.03E-06	8.81E-08	2.00E-02	1.40E-02	5.14E-05	1.23E-09
BUTYLBENZYLPHTHALATE	7.96E-03	3.12E-03	7.96E-03	2.54E-06	4.17E-07	3.58E-08	2.00E-01	NA	2.09E-06	--
CARBAZOLE	3.29E-02	3.29E-02	3.29E-02	1.16E-05	1.91E-06	1.63E-07	NA	2.00E-02	--	3.27E-09
DIBENZOFURAN	2.66E-02	2.66E-02	2.66E-02	9.36E-06	1.54E-06	1.32E-07	4.00E-03	NA	3.85E-04	--
DIBUTYLPHTHALATE	3.11E-03	2.76E-02	3.11E-03	2.45E-06	4.02E-07	3.45E-08	1.00E-01	NA	4.02E-06	--
VOLATILES										
2-BUTANONE	2.67E-01	2.86E+00	2.67E-01	2.37E-04	3.89E-05	3.34E-06	6.00E-01	NA	6.49E-05	--
ACETONE	3.64E+01	4.76E+02	3.64E+01	3.70E-02	6.08E-03	5.21E-04	1.00E-01	NA	6.08E-02	--
BENZENE	9.68E-03	1.15E-01	9.68E-03	9.19E-06	1.51E-06	1.30E-07	3.00E-03	5.50E-02	5.04E-04	7.12E-09
CARBON DISULFIDE	2.70E-02	2.79E-01	2.70E-02	2.34E-05	3.84E-06	3.29E-07	1.00E-01	NA	3.84E-05	--
TOLUENE	2.44E-03	5.13E-02	2.44E-03	3.55E-06	5.83E-07	5.00E-08	2.00E-01	NA	2.91E-06	--
TRICHLOROETHENE	5.02E-03	7.00E-02	5.02E-03	5.34E-06	8.78E-07	7.52E-08	6.00E-03	1.10E-02	1.46E-04	8.28E-10
VINYL CHLORIDE	8.42E-02	7.29E-01	8.42E-02	6.51E-05	1.07E-05	9.18E-07	3.00E-03	1.50E+00	3.57E-03	1.38E-06
METALS										
ALUMINUM	2.50E+01	2.50E+01	4.07E+00	4.79E-03	7.87E-04	6.75E-05	1.00E+00	NA	7.87E-04	--
ANTIMONY	5.87E-02	5.52E-02	5.87E-02	2.05E-05	3.37E-06	2.89E-07	4.00E-04	NA	8.42E-03	--
ARSENIC	3.72E-02	4.70E-02	3.72E-02	1.37E-05	2.25E-06	1.92E-07	3.00E-04	1.50E+00	7.49E-03	2.89E-07
BARIUM	6.05E+00	2.82E+00	6.05E+00	1.96E-03	3.22E-04	2.76E-05	7.00E-02	NA	4.59E-03	--
BERYLLIUM	9.55E-04	5.55E-04	9.55E-04	3.15E-07	5.17E-08	4.43E-09	2.00E-03	NA	2.59E-05	--
CADMIUM	1.01E-01	5.15E-02	1.01E-01	3.28E-05	5.39E-06	4.62E-07	5.00E-04	NA	1.08E-02	--
CHROMIUM	1.07E-01	9.90E-02	1.07E-01	3.74E-05	6.15E-06	5.27E-07	3.00E-03	NA	2.05E-03	--
COBALT	1.28E-01	1.28E-01	4.47E-02	2.91E-05	4.78E-06	4.09E-07	6.00E-02	NA	7.96E-05	--
COPPER	1.19E+01	1.19E+01	1.19E+01	4.18E-03	6.87E-04	5.89E-05	3.70E-02	NA	1.86E-02	--
LEAD	6.01E+00	3.98E+00	6.01E+00	2.01E-03	3.30E-04	2.83E-05	NA	NA	--	--
MANGANESE	7.08E+01	7.08E+01	1.42E+01	1.40E-02	2.31E-03	1.98E-04	2.40E-02	NA	9.62E-02	--
MERCURY	1.15E-02	2.85E-02	1.15E-02	4.98E-06	8.18E-07	7.01E-08	1.00E-04	NA	8.18E-03	--
NICKEL	1.96E-01	1.69E-01	1.96E-01	6.77E-05	1.11E-05	9.54E-07	2.00E-02	NA	5.57E-04	--
SELENIUM	7.62E-03	9.28E-03	7.62E-03	2.78E-06	4.56E-07	3.91E-08	5.00E-03	NA	9.13E-05	--
SILVER	3.45E-02	2.50E-02	3.45E-02	1.16E-05	1.91E-06	1.64E-07	5.00E-03	NA	3.83E-04	--
THALLIUM	1.12E-04	5.24E-05	1.12E-04	3.63E-08	5.97E-09	5.12E-10	6.60E-05	NA	9.05E-05	--
VANADIUM	1.33E-01	1.33E-01	7.26E-02	3.53E-05	5.80E-06	4.97E-07	7.00E-03	NA	8.28E-04	--
ZINC	1.76E+01	1.68E+01	1.76E+01	6.15E-03	1.01E-03	8.67E-05	3.00E-01	NA	3.37E-03	--
Cumulative Risk									**2.30E-01**	**2.00E-06**

Appendix L

Risk Assessment Calculations
Other Area

TABLE L-1 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURES TO TOTAL SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Incidental Ingestion of Total Soil**

Ingestion Rate = CR	100	mg/day			
Exposure Frequency = EF	350	day/yr			
Exposure Duration = ED	24	yr	for cancer	30 yr	for noncancer
Body Weight = BW	70	kg			
Averaging Time (Noncancer) = AT	10,950	days			
Averaging Time (Cancer) = AT	25,550	days			
Conversion Factor = CF	1.00E-06	kg/mg			

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	7.56E+03	1.04E-02	3.55E-03	1.00E+00	NA	1.04E-02	--
ANTIMONY	6.95E-01	9.52E-07	3.26E-07	4.00E-04	NA	2.38E-03	--
ARSENIC	5.69E+00	7.79E-06	2.67E-06	3.00E-04	1.50E+00	2.60E-02	4.01E-06
BARIUM	8.35E+01	1.14E-04	3.92E-05	7.00E-02	NA	1.63E-03	--
BERYLLIUM	3.18E-01	4.36E-07	1.49E-07	2.00E-03	NA	2.18E-04	--
CADMIUM	3.37E-01	4.62E-07	1.58E-07	5.00E-04	NA	9.23E-04	--
CHROMIUM	1.91E+01	2.62E-05	8.97E-06	3.00E-03	NA	8.72E-03	--
COBALT	6.78E+00	9.29E-06	3.18E-06	6.00E-02	NA	1.55E-04	--
COPPER	4.73E+01	6.48E-05	2.22E-05	3.70E-02	NA	1.75E-03	--
LEAD	2.28E+02	3.12E-04	1.07E-04	NA	NA	--	--
MERCURY	1.03E+00	1.41E-06	4.84E-07	1.00E-04	NA	1.41E-02	--
NICKEL	1.65E+01	2.26E-05	7.75E-06	2.00E-02	NA	1.13E-03	--
SELENIUM	5.85E-01	8.01E-07	2.75E-07	5.00E-03	NA	1.60E-04	--
SILVER	2.14E-01	2.93E-07	1.01E-07	5.00E-03	NA	5.86E-05	--
THALLIUM	9.93E-02	1.36E-07	4.66E-08	6.60E-05	NA	2.06E-03	--
VANADIUM	2.79E+01	3.82E-05	1.31E-05	7.00E-03	NA	5.46E-03	--
ZINC	1.21E+02	1.66E-04	5.68E-05	3.00E-01	NA	5.53E-04	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.40E-01	1.92E-07	6.58E-08	6.00E-02	NA	3.20E-06	--
ACENAPHTHYLENE	2.42E-01	3.32E-07	1.14E-07	2.00E-02	NA	1.66E-05	--
ANTHRACENE	1.42E-01	1.95E-07	6.67E-08	3.00E-01	NA	6.48E-07	--
BENZ(A)ANTHRACENE	6.54E-01	8.96E-07	3.07E-07	NA	7.30E-01	--	2.24E-07
BENZO[A]PYRENE	8.77E-01	1.20E-06	4.12E-07	NA	7.30E+00	--	3.01E-06
BENZO(B)FLUORANTHENE	1.29E+00	1.77E-06	6.06E-07	NA	7.30E-01	--	4.42E-07
BENZO(G,H,I)PERYLENE	5.69E-01	7.79E-07	2.67E-07	3.00E-02	NA	2.60E-05	--
BENZO(K)FLUORANTHENE	4.30E-01	5.89E-07	2.02E-07	NA	7.30E-02	--	1.47E-08
CHRYSENE	8.25E-01	1.13E-06	3.87E-07	NA	7.30E-03	--	2.83E-09
DIBENZ[A, H]ANTHRACENE	2.04E-01	2.79E-07	9.58E-08	NA	7.30E+00	--	6.99E-07
FLUORANTHENE	1.11E+00	1.52E-06	5.21E-07	4.00E-02	NA	3.80E-05	--
FLUORENE	1.56E-01	2.14E-07	7.33E-08	4.00E-02	NA	5.34E-06	--
INDENO(1,2,3-CD)PYRENE	6.13E-01	8.40E-07	2.88E-07	NA	7.30E-01	--	2.10E-07
2-METHYLNAPHTHALENE	1.39E-01	1.90E-07	6.53E-08	2.00E-02	NA	9.52E-06	--
NAPHTHALENE	1.26E-01	1.73E-07	5.92E-08	2.00E-02	NA	8.63E-06	--
PHENANTHRENE	4.50E-01	6.16E-07	2.11E-07	2.00E-02	NA	3.08E-05	--
PYRENE	1.32E+00	1.81E-06	6.20E-07	3.00E-02	NA	6.03E-05	--
Pesticides/PCBs							
BIS(2-ETHYLHEXYL)PHTHALATE	4.20E+00	5.75E-06	1.97E-06	2.00E-02	1.40E-02	2.88E-04	2.76E-08
BUTYLBENZYLPHTHALATE	1.15E-01	1.58E-07	5.40E-08	2.00E-01	NA	7.88E-07	--
CARBAZOLE	1.58E-01	2.16E-07	7.42E-08	NA	2.00E-02	--	1.48E-09
2-CHLOROPHENOL	2.11E-01	2.89E-07	9.91E-08	5.00E-03	NA	5.78E-05	--
4-CHLOROPHENYL PHENYL ETHER	2.09E-01	2.86E-07	9.82E-08	NA	NA	--	--
DIBENZOFURAN	1.56E-01	2.14E-07	7.33E-08	4.00E-03	NA	5.34E-05	--
DIBUTYLPHTHALATE	6.60E-02	9.04E-08	3.10E-08	1.00E-01	NA	9.04E-07	--
DIOCTYLPHTHALATE	2.01E-01	2.75E-07	9.44E-08	2.00E-02	NA	1.38E-05	--
1,2,4-TRICHLOROBENZENE	0.00E+00	0.00E+00	0.00E+00	1.00E-02	NA	0.00E+00	--
Volatiles							
2-BUTANONE	4.00E-03	5.48E-09	1.88E-09	6.00E-01	NA	9.13E-09	--
ACETONE	7.29E-02	9.99E-08	3.42E-08	1.00E-01	NA	9.99E-07	--
BENZENE	2.86E-03	3.92E-09	1.34E-09	3.00E-03	5.50E-02	1.31E-06	7.39E-11
BROMODICHLOROMETHANE	0.00E+00	0.00E+00	0.00E+00	2.00E-02	6.20E-02	0.00E+00	0.00E+00
ETHYLBENZENE	2.53E-03	3.47E-09	1.19E-09	1.00E-01	NA	3.47E-08	--
M&P XYLENES	0.00E+00	0.00E+00	0.00E+00	2.00E+00	NA	0.00E+00	--
VINYL CHLORIDE	4.37E-03	5.99E-09	2.05E-09	3.00E-03	1.50E+00	2.00E-06	3.08E-09
Cumulative Risk						**9.34E-02**	**8.64E-06**

TABLE L-2 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURE TO DERMAL CONTACT WITH TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Dermal Contact with Total Soil**

Surface Area for Contact = SA	5,700	cm2/event
Adherence Factor = AF	0.07	mg/cm2
Absorption Factor = ABS	chemical-specific	
Exposure Frequency = EF	350	event/yr
Exposure Duration = ED	30	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	10,950	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC (mg/kg)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Inorganics							
ALUMINUM	7.56E+03	--	--	1.00E+00	NA	--	--
ANTIMONY	6.95E-01	--	--	6.00E-05	NA	--	--
ARSENIC	5.69E+00	9.33E-07	3.20E-07	3.00E-04	1.50E+00	3.11E-03	4.80E-07
BARIUM	8.35E+01	--	--	4.90E-03	NA	--	--
BERYLLIUM	3.18E-01	--	--	1.40E-05	NA	--	--
CADMIUM	3.37E-01	1.84E-09	6.32E-10	1.25E-05	NA	1.47E-04	--
CHROMIUM	1.91E+01	--	--	7.50E-05	NA	--	--
COBALT	6.78E+00	--	--	6.00E-02	NA	--	--
COPPER	4.73E+01	--	--	3.70E-02	NA	--	--
MANGANESE	2.99E+02	--	--	9.60E-04	NA	--	--
MERCURY	1.03E+00	--	--	1.00E-04	NA	--	--
NICKEL	1.65E+01	--	--	8.00E-04	NA	--	--
SELENIUM	5.85E-01	--	--	5.00E-03	NA	--	--
SILVER	2.14E-01	--	--	2.00E-04	NA	--	--
THALLIUM	9.93E-02	--	--	6.60E-05	NA	--	--
VANADIUM	2.79E+01	--	--	1.82E-04	NA	--	--
ZINC	1.21E+02	--	--	3.00E-01	NA	--	--

Chemical of Concern	EPC (mg/kg)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
PAHs							
ACENAPHTHENE	1.40E-01	9.95E-08	3.41E-08	NA	NA	--	--
ACENAPHTHYLENE	2.42E-01	1.72E-07	5.90E-08	NA	NA	--	--
ANTHRACENE	1.42E-01	1.01E-07	3.46E-08	NA	NA	--	--
BENZ(A)ANTHRACENE	6.54E-01	4.65E-07	1.59E-07	NA	NA	--	--
BENZO[A]PYRENE	8.77E-01	6.23E-07	2.14E-07	NA	NA	--	--
BENZO(B)FLUORANTHENE	1.29E+00	9.17E-07	3.14E-07	NA	NA	--	--
BENZO(G,H,I)PERYLENE	5.69E-01	4.04E-07	1.39E-07	NA	NA	--	--
BENZO(K)FLUORANTHENE	4.30E-01	3.06E-07	1.05E-07	NA	NA	--	--
CHRYSENE	8.25E-01	5.86E-07	2.01E-07	NA	NA	--	--
DIBENZ[A, H]ANTHRACENE	2.04E-01	1.45E-07	4.97E-08	NA	NA	--	--
FLUORANTHENE	1.11E+00	7.89E-07	2.70E-07	NA	NA	--	--
FLUORENE	1.56E-01	1.11E-07	3.80E-08	NA	NA	--	--
INDENO(1,2,3-CD)PYRENE	6.13E-01	4.36E-07	1.49E-07	NA	NA	--	--
2-METHYLNAPHTHALENE	1.39E-01	9.88E-08	3.39E-08	NA	NA	--	--
NAPHTHALENE	1.26E-01	8.95E-08	3.07E-08	NA	NA	--	--
PHENANTHRENE	4.50E-01	3.20E-07	1.10E-07	NA	NA	--	--
PYRENE	1.32E+00	9.38E-07	3.22E-07	NA	NA	--	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	4.20E+00	2.30E-06	7.87E-07	2.00E-02	1.40E-02	1.15E-04	1.10E-08
BUTYLBENZYLPHTHALATE	1.15E-01	6.29E-08	2.16E-08	2.00E-01	NA	3.14E-07	--
CARBAZOLE	1.58E-01	8.64E-08	2.96E-08	NA	2.00E-02	--	5.92E-10
2-CHLOROPHENOL	2.11E-01	1.15E-07	3.95E-08	5.00E-03	NA	2.31E-05	--
4-CHLOROPHENYL PHENYL ETHER	2.09E-01	1.14E-07	3.92E-08	NA	NA	--	--
DIBENZOFURAN	1.56E-01	8.53E-08	2.92E-08	4.00E-03	NA	2.13E-05	--
DIBUTYLPHTHALATE	6.60E-02	3.61E-08	1.24E-08	1.00E-01	NA	3.61E-07	--
DIOCTYLPHTHALATE	2.01E-01	1.10E-07	3.77E-08	2.00E-02	NA	5.49E-06	--
4-METHYLPHENOL	5.50E-02	3.01E-08	1.03E-08	5.00E-03	NA	6.01E-06	--
Volatiles							
2-BUTANONE	4.00E-03	--	--	6.00E-01	NA	--	--
ACETONE	7.29E-02	--	--	1.00E-01	NA	--	--
BENZENE	2.86E-03	--	--	3.00E-03	5.50E-02	--	--
CHLOROFORM	1.10E-03	--	--	1.00E-02	6.10E-03	--	--
ETHYLBENZENE	2.53E-03	--	--	1.00E-01	NA	--	--
TRICHLOROETHENE	2.20E-03	--	--	6.00E-03	1.10E-02	--	--
VINYL CHLORIDE	4.37E-03	--	--	3.00E-03	1.50E+00	--	--
Cumulative Risk						**3.43E-03**	**4.91E-07**

TABLE L-3 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO INHALATION OF PARTICULATES FROM TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Inhalation of Particles from Total Soil**

Inhalation Rate = IR	0.833	m3/hr
Exposure Time = ET	24	hr/day
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	30	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	10,950	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	5.73E-06	1.57E-06	5.38E-07	1.40E-03	NA	1.12E-03	--
ANTIMONY	5.27E-10	1.44E-10	4.94E-11	NA	NA	--	--
ARSENIC	4.31E-09	1.18E-09	4.05E-10	NA	1.50E+01	--	6.07E-09
BARIUM	6.33E-08	1.73E-08	5.94E-09	1.40E-04	NA	1.24E-04	--
BERYLLIUM	2.41E-10	6.60E-11	2.26E-11	5.70E-06	8.40E+00	1.16E-05	1.90E-10
CADMIUM	2.55E-10	6.99E-11	2.40E-11	NA	6.30E+00	--	1.51E-10
CHROMIUM	1.45E-08	3.96E-09	1.36E-09	NA	2.90E+02	--	3.94E-07
COBALT	5.14E-09	1.41E-09	4.82E-10	NA	NA	--	--
COPPER	3.58E-08	9.81E-09	3.36E-09	NA	NA	--	--
MANGANESE	2.27E-07	6.20E-08	2.13E-08	1.40E-05	NA	4.43E-03	--
MERCURY	7.80E-10	2.14E-10	7.33E-11	NA	NA	--	--
NICKEL	1.25E-08	3.42E-09	1.17E-09	NA	NA	--	--
SELENIUM	4.43E-10	1.21E-10	4.16E-11	NA	NA	--	--
SILVER	1.62E-10	4.44E-11	1.52E-11	NA	NA	--	--
THALLIUM	7.52E-11	2.06E-11	7.06E-12	NA	NA	--	--
VANADIUM	2.11E-08	5.79E-09	1.98E-09	NA	NA	--	--
ZINC	9.17E-08	2.51E-08	8.61E-09	NA	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.06E-10	2.90E-11	9.96E-12	6.00E-02	NA	4.84E-10	--
ACENAPHTHYLENE	1.83E-10	5.02E-11	1.72E-11	8.60E-04	NA	5.84E-08	--
ANTHRACENE	1.08E-10	2.95E-11	1.01E-11	3.00E-01	NA	9.82E-11	--
BENZ(A)ANTHRACENE	4.95E-10	1.36E-10	4.65E-11	NA	3.10E-01	--	1.44E-11
BENZO[A]PYRENE	6.64E-10	1.82E-10	6.24E-11	NA	3.10E+00	--	1.93E-10
BENZO(B)FLUORANTHENE	9.77E-10	2.68E-10	9.18E-11	NA	3.10E-01	--	2.84E-11
BENZO(G,H,I)PERYLENE	4.31E-10	1.18E-10	4.05E-11	3.00E-02	NA	3.94E-09	--
BENZO(K)FLUORANTHENE	3.26E-10	8.92E-11	3.06E-11	NA	3.10E-02	--	9.48E-13
CHRYSENE	6.25E-10	1.71E-10	5.87E-11	NA	3.10E-03	--	1.82E-13
DIBENZ[A, H]ANTHRACENE	1.55E-10	4.23E-11	1.45E-11	NA	3.10E+00	--	4.50E-11
FLUORANTHENE	8.41E-10	2.30E-10	7.90E-11	4.00E-02	NA	5.76E-09	--
FLUORENE	1.18E-10	3.24E-11	1.11E-11	4.00E-02	NA	8.09E-10	--
INDENO(1,2,3-CD)PYRENE	4.64E-10	1.27E-10	4.36E-11	NA	3.10E-01	--	1.35E-11
2-METHYLNAPHTHALENE	1.05E-10	2.88E-11	9.89E-12	NA	NA	--	--
NAPHTHALENE	9.55E-11	2.61E-11	8.96E-12	8.60E-04	NA	3.04E-08	--
PHENANTHRENE	3.41E-10	9.34E-11	3.20E-11	8.60E-04	NA	1.09E-07	--
PYRENE	1.00E-09	2.74E-10	9.39E-11	3.00E-02	NA	9.13E-09	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	3.18E-09	8.71E-10	2.99E-10	2.20E-02	NA	3.96E-08	--
BUTYLBENZYLPHTHALATE	8.71E-11	2.39E-11	8.18E-12	2.00E-01	NA	1.19E-10	--
CARBAZOLE	1.20E-10	3.28E-11	1.12E-11	NA	2.00E-02	--	2.25E-13
2-CHLOROPHENOL	1.60E-10	4.38E-11	1.50E-11	5.00E-03	NA	8.76E-09	--
4-CHLOROPHENYL PHENYL ETHER	1.58E-10	4.34E-11	1.49E-11	NA	NA	--	--
DIBENZOFURAN	1.18E-10	3.24E-11	1.11E-11	4.00E-03	NA	8.09E-09	--
DIBUTYLPHTHALATE	5.00E-11	1.37E-11	4.69E-12	1.00E-01	NA	1.37E-10	--
DIOCTYLPHTHALATE	1.52E-10	4.17E-11	1.43E-11	2.00E-02	NA	2.09E-09	--
4-METHYLPHENOL	4.17E-11	1.14E-11	3.91E-12	5.00E-03	NA	2.28E-09	--
Volatiles							
2-BUTANONE	3.03E-12	8.30E-13	2.85E-13	2.90E-01	NA	2.86E-12	--
ACETONE	5.52E-11	1.51E-11	5.19E-12	1.00E-01	NA	1.51E-10	--
BENZENE	2.17E-12	5.93E-13	2.03E-13	1.70E-03	2.70E-02	3.49E-10	5.49E-15
CHLOROFORM	8.33E-13	2.28E-13	7.82E-14	8.60E-05	8.05E-02	2.65E-09	6.30E-15
ETHYLBENZENE	1.92E-12	5.25E-13	1.80E-13	2.90E-01	NA	1.81E-12	--
TRICHLOROETHENE	1.67E-12	4.56E-13	1.56E-13	6.00E-03	6.00E-03	7.61E-11	9.39E-16
VINYL CHLORIDE	3.31E-12	9.07E-13	3.11E-13	2.90E-02	3.10E-02	3.13E-11	9.64E-15
Cumulative Risk						**5.69E-03**	**4.01E-07**

TABLE L-4 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURES TO TOTAL SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Incidental Ingestion of Total Soil**

Ingestion Rate = CR	200	mg/day
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	6	yr
Body Weight = BW	15	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC (mg/kg)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Inorganics							
ALUMINUM	7.56E+03	9.67E-02	8.28E-03	1.00E+00	NA	9.67E-02	--
ANTIMONY	6.95E-01	8.89E-06	7.62E-07	4.00E-04	NA	2.22E-02	--
ARSENIC	5.69E+00	7.27E-05	6.24E-06	3.00E-04	1.50E+00	2.42E-01	9.35E-06
BARIUM	8.35E+01	1.07E-03	9.15E-05	7.00E-02	NA	1.53E-02	--
BERYLLIUM	3.18E-01	4.07E-06	3.48E-07	2.00E-03	NA	2.03E-03	--
CADMIUM	3.37E-01	4.31E-06	3.69E-07	5.00E-04	NA	8.62E-03	--
CHROMIUM	1.91E+01	2.44E-04	2.09E-05	3.00E-03	NA	8.14E-02	--
COBALT	6.78E+00	8.67E-05	7.43E-06	6.00E-02	NA	1.44E-03	--
COPPER	4.73E+01	6.05E-04	5.18E-05	3.70E-02	NA	1.63E-02	--
MANGANESE	2.99E+02	3.82E-03	3.28E-04	2.40E-02	NA	1.59E-01	--
MERCURY	1.03E+00	1.32E-05	1.13E-06	1.00E-04	NA	1.32E-01	--
NICKEL	1.65E+01	2.11E-04	1.81E-05	2.00E-02	NA	1.05E-02	--
SELENIUM	5.85E-01	7.48E-06	6.41E-07	5.00E-03	NA	1.50E-03	--
SILVER	2.14E-01	2.74E-06	2.35E-07	5.00E-03	NA	5.47E-04	--
THALLIUM	9.93E-02	1.27E-06	1.09E-07	6.60E-05	NA	1.92E-02	--
VANADIUM	2.79E+01	3.57E-04	3.06E-05	7.00E-03	NA	5.10E-02	--
ZINC	1.21E+02	1.55E-03	1.33E-04	3.00E-01	NA	5.16E-03	--

Chemical of Concern	EPC (mg/kg)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
PAHs							
ACENAPHTHENE	1.40E-01	1.79E-06	1.53E-07	6.00E-02	NA	2.98E-05	--
ACENAPHTHYLENE	2.42E-01	3.09E-06	2.65E-07	2.00E-02	NA	1.55E-04	--
ANTHRACENE	1.42E-01	1.82E-06	1.56E-07	3.00E-01	NA	6.05E-06	--
BENZ(A)ANTHRACENE	6.54E-01	8.36E-06	7.17E-07	NA	7.30E-01	--	5.23E-07
BENZO[A]PYRENE	8.77E-01	1.12E-05	9.61E-07	NA	7.30E+00	--	7.02E-06
BENZO(B)FLUORANTHENE	1.29E+00	1.65E-05	1.41E-06	NA	7.30E-01	--	1.03E-06
BENZO(G,H,I)PERYLENE	5.69E-01	7.27E-06	6.24E-07	3.00E-02	NA	2.42E-04	--
BENZO(K)FLUORANTHENE	4.30E-01	5.50E-06	4.71E-07	NA	7.30E-02	--	3.44E-08
CHRYSENE	8.25E-01	1.05E-05	9.04E-07	NA	7.30E-03	--	6.60E-09
DIBENZ[A, H]ANTHRACENE	2.04E-01	2.61E-06	2.24E-07	NA	7.30E+00	--	1.63E-06
FLUORANTHENE	1.11E+00	1.42E-05	1.22E-06	4.00E-02	NA	3.55E-04	--
FLUORENE	1.56E-01	1.99E-06	1.71E-07	4.00E-02	NA	4.99E-05	--
INDENO(1,2,3-CD)PYRENE	6.13E-01	7.84E-06	6.72E-07	NA	7.30E-01	--	4.90E-07
2-METHYLNAPHTHALENE	1.39E-01	1.78E-06	1.52E-07	2.00E-02	NA	8.89E-05	--
NAPHTHALENE	1.26E-01	1.61E-06	1.38E-07	2.00E-02	NA	8.05E-05	--
PHENANTHRENE	4.50E-01	5.75E-06	4.93E-07	2.00E-02	NA	2.88E-04	--
PYRENE	1.32E+00	1.69E-05	1.45E-06	3.00E-02	NA	5.63E-04	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	4.20E+00	5.37E-05	4.60E-06	2.00E-02	1.40E-02	2.68E-03	6.44E-08
BUTYLBENZYLPHTHALATE	1.15E-01	1.47E-06	1.26E-07	2.00E-01	NA	7.35E-06	--
CARBAZOLE	1.58E-01	2.02E-06	1.73E-07	NA	2.00E-02	--	3.46E-09
2-CHLOROPHENOL	2.11E-01	2.70E-06	2.31E-07	5.00E-03	NA	5.40E-04	--
4-CHLOROPHENYL PHENYL ETHER	2.09E-01	2.67E-06	2.29E-07	NA	NA	--	--
DIBENZOFURAN	1.56E-01	1.99E-06	1.71E-07	4.00E-03	NA	4.99E-04	--
DIBUTYLPHTHALATE	6.60E-02	8.44E-07	7.23E-08	1.00E-01	NA	8.44E-06	--
DIOCTYLPHTHALATE	2.01E-01	2.57E-06	2.20E-07	2.00E-02	NA	1.28E-04	--
4-METHYLPHENOL	5.50E-02	7.03E-07	6.03E-08	5.00E-03	NA	1.41E-04	--
Volatiles							
2-BUTANONE	4.00E-03	5.11E-08	4.38E-09	6.00E-01	NA	8.52E-08	--
ACETONE	7.29E-02	9.32E-07	7.99E-08	1.00E-01	NA	9.32E-06	--
BENZENE	2.86E-03	3.66E-08	3.13E-09	3.00E-03	5.50E-02	1.22E-05	1.72E-10
CHLOROFORM	1.10E-03	1.41E-08	1.21E-09	1.00E-02	6.10E-03	1.41E-06	7.35E-12
ETHYLBENZENE	2.53E-03	3.23E-08	2.77E-09	1.00E-01	NA	3.23E-07	--
TRICHLOROETHENE	2.20E-03	2.81E-08	2.41E-09	6.00E-03	1.10E-02	4.69E-06	2.65E-11
VINYL CHLORIDE	4.37E-03	5.59E-08	4.79E-09	3.00E-03	1.50E+00	1.86E-05	7.18E-09
Cumulative Risk						**8.71E-01**	**2.02E-05**

TABLE L-5 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURE TO DERMAL CONTACT WITH TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Dermal Contact with Total Soil**

Surface Area for Contact = SA	2,800	cm2/event
Adherence Factor = AF	0.2	mg/cm2
Absorption Factor = ABS	:hemical specific	
Exposure Frequency = EF	350	event/yr
Exposure Duration = ED	6	yr
Body Weight = BW	15	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	7.56E+03	--	--	1.00E+00	NA	--	--
ANTIMONY	6.95E-01	--	--	6.00E-05	NA	--	--
ARSENIC	5.69E+00	6.11E-06	5.24E-07	3.00E-04	1.50E+00	2.04E-02	7.86E-07
BARIUM	8.35E+01	--	--	4.90E-03	NA	--	--
BERYLLIUM	3.18E-01	--	--	1.40E-05	NA	--	--
CADMIUM	3.37E-01	1.21E-08	1.03E-09	1.25E-05	NA	9.65E-04	--
CHROMIUM	1.91E+01	--	--	7.50E-05	NA	--	--
COBALT	6.78E+00	--	--	6.00E-02	NA	--	--
COPPER	4.73E+01	--	--	3.70E-02	NA	--	--
MANGANESE	2.99E+02	--	--	9.60E-04	NA	--	--
MERCURY	1.03E+00	--	--	1.00E-04	NA	--	--
NICKEL	1.65E+01	--	--	8.00E-04	NA	--	--
SELENIUM	5.85E-01	--	--	5.00E-03	NA	--	--
SILVER	2.14E-01	--	--	2.00E-04	NA	--	--
THALLIUM	9.93E-02	--	--	6.60E-05	NA	--	--
VANADIUM	2.79E+01	--	--	1.82E-04	NA	--	--
ZINC	1.21E+02	--	--	3.00E-01	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.40E-01	6.52E-07	5.58E-08	NA	NA	--	--
ACENAPHTHYLENE	2.42E-01	1.13E-06	9.65E-08	NA	NA	--	--
ANTHRACENE	1.42E-01	6.61E-07	5.66E-08	NA	NA	--	--
BENZ(A)ANTHRACENE	6.54E-01	3.04E-06	2.61E-07	NA	NA	--	--
BENZO[A]PYRENE	8.77E-01	4.08E-06	3.50E-07	NA	NA	--	--
BENZO(B)FLUORANTHENE	1.29E+00	6.00E-06	5.15E-07	NA	NA	--	--
BENZO(G,H,I)PERYLENE	5.69E-01	2.65E-06	2.27E-07	NA	NA	--	--
BENZO(K)FLUORANTHENE	4.30E-01	2.00E-06	1.72E-07	NA	NA	--	--
CHRYSENE	8.25E-01	3.84E-06	3.29E-07	NA	NA	--	--
DIBENZ[A, H]ANTHRACENE	2.04E-01	9.49E-07	8.14E-08	NA	NA	--	--
FLUORANTHENE	1.11E+00	5.17E-06	4.43E-07	NA	NA	--	--
FLUORENE	1.56E-01	7.26E-07	6.22E-08	NA	NA	--	--
INDENO(1,2,3-CD)PYRENE	6.13E-01	2.85E-06	2.45E-07	NA	NA	--	--
2-METHYLNAPHTHALENE	1.39E-01	6.47E-07	5.54E-08	NA	NA	--	--
NAPHTHALENE	1.26E-01	5.86E-07	5.03E-08	NA	NA	--	--
PHENANTHRENE	4.50E-01	2.09E-06	1.80E-07	NA	NA	--	--
PYRENE	1.32E+00	6.14E-06	5.27E-07	NA	NA	--	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	4.20E+00	1.50E-05	1.29E-06	2.00E-02	1.40E-02	7.52E-04	1.80E-08
BUTYLBENZYLPHTHALATE	1.15E-01	4.12E-07	3.53E-08	2.00E-01	NA	2.06E-06	--
CARBAZOLE	1.58E-01	5.66E-07	4.85E-08	NA	2.00E-02	--	9.70E-10
2-CHLOROPHENOL	2.11E-01	7.55E-07	6.47E-08	5.00E-03	NA	1.51E-04	--
4-CHLOROPHENYL PHENYL ETHER	2.09E-01	7.48E-07	6.41E-08	NA	NA	--	--
DIBENZOFURAN	1.56E-01	5.58E-07	4.79E-08	4.00E-03	NA	1.40E-04	--
DIBUTYLPHTHALATE	6.60E-02	2.36E-07	2.03E-08	1.00E-01	NA	2.36E-06	--
DIOCTYLPHTHALATE	2.01E-01	7.20E-07	6.17E-08	2.00E-02	NA	3.60E-05	--
4-METHYLPHENOL	5.50E-02	1.97E-07	1.69E-08	5.00E-03	NA	3.94E-05	--
Volatiles							
2-BUTANONE	4.00E-03	--	--	6.00E-01	NA	--	--
ACETONE	7.29E-02	--	--	1.00E-01	NA	--	--
BENZENE	2.86E-03	--	--	3.00E-03	5.50E-02	--	--
CHLOROFORM	1.10E-03	--	--	1.00E-02	6.10E-03	--	--
ETHYLBENZENE	2.53E-03	--	--	1.00E-01	NA	--	--
TRICHLOROETHENE	2.20E-03	--	--	6.00E-03	1.10E-02	--	--
VINYL CHLORIDE	4.37E-03	--	--	3.00E-03	1.50E+00	--	--
Cumulative Risk						**2.25E-02**	**8.05E-07**

TABLE L-6 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO INHALATION OF PARTICULATES FROM TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Inhalation of Particles from Total Soil**

Inhalation Rate = IR	0.417	m3/hr
Exposure Time = ET	24	hr/day
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	6	yr
Body Weight = BW	15	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	5.73E-06	3.66E-06	3.14E-07	1.40E-03	NA	2.62E-03	--
ANTIMONY	5.27E-10	3.37E-10	2.89E-11	NA	NA	--	--
ARSENIC	4.31E-09	2.76E-09	2.36E-10	NA	1.50E+01	--	3.55E-09
BARIUM	6.33E-08	4.05E-08	3.47E-09	1.40E-04	NA	2.89E-04	--
BERYLLIUM	2.41E-10	1.54E-10	1.32E-11	5.70E-06	8.40E+00	2.70E-05	1.11E-10
CADMIUM	2.55E-10	1.63E-10	1.40E-11	NA	6.30E+00	--	8.82E-11
CHROMIUM	1.45E-08	9.26E-09	7.93E-10	NA	2.90E+02	--	2.30E-07
COBALT	5.14E-09	3.29E-09	2.82E-10	NA	NA	--	--
COPPER	3.58E-08	2.29E-08	1.97E-09	NA	NA	--	--
MANGANESE	2.27E-07	1.45E-07	1.24E-08	1.40E-05	NA	1.04E-02	--
MERCURY	7.80E-10	4.99E-10	4.28E-11	NA	NA	--	--
NICKEL	1.25E-08	8.00E-09	6.85E-10	NA	NA	--	--
SELENIUM	4.43E-10	2.84E-10	2.43E-11	NA	NA	--	--
SILVER	1.62E-10	1.04E-10	8.89E-12	NA	NA	--	--
THALLIUM	7.52E-11	4.81E-11	4.13E-12	NA	NA	--	--
VANADIUM	2.11E-08	1.35E-08	1.16E-09	NA	NA	--	--
ZINC	9.17E-08	5.86E-08	5.03E-09	NA	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.06E-10	6.79E-11	5.82E-12	6.00E-02	NA	1.13E-09	--
ACENAPHTHYLENE	1.83E-10	1.17E-10	1.01E-11	8.60E-04	NA	1.36E-07	--
ANTHRACENE	1.08E-10	6.88E-11	5.90E-12	3.00E-01	NA	2.29E-10	--
BENZ(A)ANTHRACENE	4.95E-10	3.17E-10	2.72E-11	NA	3.10E-01	--	8.42E-12
BENZO[A]PYRENE	6.64E-10	4.25E-10	3.64E-11	NA	3.10E+00	--	1.13E-10
BENZO(B)FLUORANTHENE	9.77E-10	6.25E-10	5.36E-11	NA	3.10E-01	--	1.66E-11
BENZO(G,H,I)PERYLENE	4.31E-10	2.76E-10	2.36E-11	3.00E-02	NA	9.19E-09	--
BENZO(K)FLUORANTHENE	3.26E-10	2.08E-10	1.79E-11	NA	3.10E-02	--	5.54E-13
CHRYSENE	6.25E-10	4.00E-10	3.43E-11	NA	3.10E-03	--	1.06E-13
DIBENZ[A, H]ANTHRACENE	1.55E-10	9.89E-11	8.48E-12	NA	3.10E+00	--	2.63E-11
FLUORANTHENE	8.41E-10	5.38E-10	4.61E-11	4.00E-02	NA	1.34E-08	--
FLUORENE	1.18E-10	7.56E-11	6.48E-12	4.00E-02	NA	1.89E-09	--
INDENO(1,2,3-CD)PYRENE	4.64E-10	2.97E-10	2.55E-11	NA	3.10E-01	--	7.89E-12
2-METHYLNAPHTHALENE	1.05E-10	6.74E-11	5.77E-12	NA	NA	--	--
NAPHTHALENE	9.55E-11	6.11E-11	5.23E-12	8.60E-04	NA	7.10E-08	--
PHENANTHRENE	3.41E-10	2.18E-10	1.87E-11	8.60E-04	NA	2.54E-07	--
PYRENE	1.00E-09	6.40E-10	5.48E-11	3.00E-02	NA	2.13E-08	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	3.18E-09	2.04E-09	1.74E-10	2.20E-02	NA	9.25E-08	--
BUTYLBENZYLPHTHALATE	8.71E-11	5.57E-11	4.78E-12	2.00E-01	NA	2.79E-10	--
CARBAZOLE	1.20E-10	7.66E-11	6.56E-12	NA	2.00E-02	--	1.31E-13
2-CHLOROPHENOL	1.60E-10	1.02E-10	8.77E-12	5.00E-03	NA	2.05E-08	--
4-CHLOROPHENYL PHENYL ETHER	1.58E-10	1.01E-10	8.68E-12	NA	NA	--	--
DIBENZOFURAN	1.18E-10	7.56E-11	6.48E-12	4.00E-03	NA	1.89E-08	--
DIBUTYLPHTHALATE	5.00E-11	3.20E-11	2.74E-12	1.00E-01	NA	3.20E-10	--
DIOCTYLPHTHALATE	1.52E-10	9.74E-11	8.35E-12	2.00E-02	NA	4.87E-09	--
4-METHYLPHENOL	4.17E-11	2.67E-11	2.28E-12	5.00E-03	NA	5.33E-09	--
Volatiles							
2-BUTANONE	3.03E-12	1.94E-12	1.66E-13	2.90E-01	NA	6.69E-12	--
ACETONE	5.52E-11	3.53E-11	3.03E-12	1.00E-01	NA	3.53E-10	--
BENZENE	2.17E-12	1.39E-12	1.19E-13	1.70E-03	2.70E-02	8.15E-10	3.21E-15
CHLOROFORM	8.33E-13	5.33E-13	4.57E-14	8.60E-05	8.05E-02	6.20E-09	3.68E-15
ETHYLBENZENE	1.92E-12	1.23E-12	1.05E-13	2.90E-01	NA	4.23E-12	--
TRICHLOROETHENE	1.67E-12	1.07E-12	9.14E-14	6.00E-03	6.00E-03	1.78E-10	5.48E-16
VINYL CHLORIDE	3.31E-12	2.12E-12	1.82E-13	2.90E-02	3.10E-02	7.30E-11	5.63E-15
Cumulative Risk						**1.33E-02**	**2.34E-07**

TABLE L-7 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR RECREATIONAL USERS DUE TO EXPOSURES TO SURFACE SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Incidental Ingestion of Surface Soil**

Ingestion Rate = CR	200	mg/day
Exposure Frequency = EF	141	day/yr
Exposure Duration = ED	9	yr
Body Weight = BW	36	kg
Averaging Time (Noncancer) = AT	3,285	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	7.56E+03	1.62E-02	2.09E-03	1.00E+00	NA	1.62E-02	--
ANTIMONY	6.95E-01	1.49E-06	1.92E-07	4.00E-04	NA	3.73E-03	--
ARSENIC	5.69E+00	1.22E-05	1.57E-06	3.00E-04	1.50E+00	4.07E-02	2.36E-06
BARIUM	8.35E+01	1.79E-04	2.30E-05	7.00E-02	NA	2.56E-03	--
BERYLLIUM	3.18E-01	6.82E-07	8.77E-08	2.00E-03	NA	3.41E-04	--
CADMIUM	3.37E-01	7.23E-07	9.30E-08	5.00E-04	NA	1.45E-03	--
CHROMIUM	1.91E+01	4.10E-05	5.27E-06	3.00E-03	NA	1.37E-02	--
COBALT	6.78E+00	1.46E-05	1.87E-06	6.00E-02	NA	2.43E-04	--
COPPER	4.73E+01	1.02E-04	1.31E-05	3.70E-02	NA	2.74E-03	--
MANGANESE	2.99E+02	6.42E-04	8.25E-05	2.40E-02	NA	2.67E-02	--
MERCURY	1.03E+00	2.21E-06	2.84E-07	1.00E-04	NA	2.21E-02	--
NICKEL	1.65E+01	3.54E-05	4.55E-06	2.00E-02	NA	1.77E-03	--
SELENIUM	5.85E-01	1.26E-06	1.61E-07	5.00E-03	NA	2.51E-04	--
SILVER	2.14E-01	4.59E-07	5.90E-08	5.00E-03	NA	9.19E-05	--
THALLIUM	9.93E-02	2.13E-07	2.74E-08	6.60E-05	NA	3.23E-03	--
VANADIUM	2.79E+01	5.99E-05	7.70E-06	7.00E-03	NA	8.55E-03	--
ZINC	1.21E+02	2.60E-04	3.34E-05	3.00E-01	NA	8.66E-04	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.40E-01	3.00E-07	3.86E-08	6.00E-02	NA	5.01E-06	--
ACENAPHTHYLENE	2.42E-01	5.19E-07	6.68E-08	2.00E-02	NA	2.60E-05	--
ANTHRACENE	1.42E-01	3.05E-07	3.92E-08	3.00E-01	NA	1.02E-06	--
BENZ(A)ANTHRACENE	6.54E-01	1.40E-06	1.80E-07	NA	7.30E-01	--	1.32E-07
BENZO[A]PYRENE	8.77E-01	1.88E-06	2.42E-07	NA	7.30E+00	--	1.77E-06
BENZO(B)FLUORANTHENE	1.29E+00	2.77E-06	3.56E-07	NA	7.30E-01	--	2.60E-07
BENZO(G,H,I)PERYLENE	5.69E-01	1.22E-06	1.57E-07	3.00E-02	NA	4.07E-05	--
BENZO(K)FLUORANTHENE	4.30E-01	9.23E-07	1.19E-07	NA	7.30E-02	--	8.66E-09
CHRYSENE	8.25E-01	1.77E-06	2.28E-07	NA	7.30E-03	--	1.66E-09
DIBENZ[A, H]ANTHRACENE	2.04E-01	4.38E-07	5.63E-08	NA	7.30E+00	--	4.11E-07
FLUORANTHENE	1.11E+00	2.38E-06	3.06E-07	4.00E-02	NA	5.96E-05	--
FLUORENE	1.56E-01	3.35E-07	4.30E-08	4.00E-02	NA	8.37E-06	--
INDENO(1,2,3-CD)PYRENE	6.13E-01	1.32E-06	1.69E-07	NA	7.30E-01	--	1.23E-07
2-METHYLNAPHTHALENE	1.39E-01	2.98E-07	3.84E-08	2.00E-02	NA	1.49E-05	--
NAPHTHALENE	1.26E-01	2.70E-07	3.48E-08	2.00E-02	NA	1.35E-05	--
PHENANTHRENE	4.50E-01	9.66E-07	1.24E-07	2.00E-02	NA	4.83E-05	--
PYRENE	1.32E+00	2.83E-06	3.64E-07	3.00E-02	NA	9.44E-05	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	4.20E+00	9.01E-06	1.16E-06	2.00E-02	1.40E-02	4.51E-04	1.62E-08
BUTYLBENZYLPHTHALATE	1.15E-01	2.47E-07	3.17E-08	2.00E-01	NA	1.23E-06	--
CARBAZOLE	1.58E-01	3.39E-07	4.36E-08	NA	2.00E-02	--	8.72E-10
2-CHLOROPHENOL	2.11E-01	4.53E-07	5.82E-08	5.00E-03	NA	9.06E-05	--
4-CHLOROPHENYL PHENYL ETHER	2.09E-01	4.49E-07	5.77E-08	NA	NA	--	--
DIBENZOFURAN	1.56E-01	3.35E-07	4.30E-08	4.00E-03	NA	8.37E-05	--
DIBUTYLPHTHALATE	6.60E-02	1.42E-07	1.82E-08	1.00E-01	NA	1.42E-06	--
DIOCTYLPHTHALATE	2.01E-01	4.31E-07	5.55E-08	2.00E-02	NA	2.16E-05	--
4-METHYLPHENOL	5.50E-02	1.18E-07	1.52E-08	5.00E-03	NA	2.36E-05	--
Volatiles							
2-BUTANONE	4.00E-03	8.58E-09	1.10E-09	6.00E-01	NA	1.43E-08	--
ACETONE	7.29E-02	1.56E-07	2.01E-08	1.00E-01	NA	1.56E-06	--
BENZENE	2.86E-03	6.14E-09	7.89E-10	3.00E-03	5.50E-02	2.05E-06	4.34E-11
CHLOROFORM	1.10E-03	2.36E-09	3.04E-10	1.00E-02	6.10E-03	2.36E-07	1.85E-12
ETHYLBENZENE	2.53E-03	5.43E-09	6.98E-10	1.00E-01	NA	5.43E-08	--
TRICHLOROETHENE	2.20E-03	4.72E-09	6.07E-10	6.00E-03	1.10E-02	7.87E-07	6.68E-12
VINYL CHLORIDE	4.37E-03	9.38E-09	1.21E-09	3.00E-03	1.50E+00	3.13E-06	1.81E-09
Cumulative Risk						**1.46E-01**	**5.08E-06**

TABLE L-8 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR RECREATIONAL USERS DUE TO EXPOSURE TO DERMAL CONTACT WITH SURFACE SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Dermal Contact with Surface Soil**

Surface Area for Contact = SA	2,900	cm2/event
Adherence Factor = AF	1	mg/cm2
Absorption Factor = ABS	chemical-specific	
Exposure Frequency = EF	0	event/yr
Exposure Duration = ED	9	yr
Body Weight = BW	36	kg
Averaging Time (Noncancer) = AT	3,285	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	7.56E+03	--	--	1.00E+00	NA	--	--
ANTIMONY	6.95E-01	--	--	6.00E-05	NA	--	--
ARSENIC	5.69E+00	1.13E-08	1.45E-09	3.00E-04	1.50E+00	3.77E-05	2.18E-09
BARIUM	8.35E+01	--	--	4.90E-03	NA	--	--
BERYLLIUM	3.18E-01	--	--	1.40E-05	NA	--	--
CADMIUM	3.37E-01	2.23E-11	2.87E-12	1.25E-05	NA	1.79E-06	--
CHROMIUM	1.91E+01	--	--	7.50E-05	NA	--	--
COBALT	6.78E+00	--	--	6.00E-02	NA	--	--
COPPER	4.73E+01	--	--	3.70E-02	NA	--	--
MANGANESE	2.99E+02	--	--	9.60E-04	NA	--	--
MERCURY	1.03E+00	--	--	1.00E-04	NA	--	--
NICKEL	1.65E+01	--	--	8.00E-04	NA	--	--
SELENIUM	5.85E-01	--	--	5.00E-03	NA	--	--
SILVER	2.14E-01	--	--	2.00E-04	NA	--	--
THALLIUM	9.93E-02	--	--	6.60E-05	NA	--	--
VANADIUM	2.79E+01	--	--	1.82E-04	NA	--	--
ZINC	1.21E+02	--	--	3.00E-01	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.40E-01	1.21E-09	1.55E-10	NA	NA	--	--
ACENAPHTHYLENE	2.42E-01	2.08E-09	2.68E-10	NA	NA	--	--
ANTHRACENE	1.42E-01	1.22E-09	1.57E-10	NA	NA	--	--
BENZ(A)ANTHRACENE	6.54E-01	5.63E-09	7.24E-10	NA	NA	--	--
BENZO[A]PYRENE	8.77E-01	7.55E-09	9.71E-10	NA	NA	--	--
BENZO(B)FLUORANTHENE	1.29E+00	1.11E-08	1.43E-09	NA	NA	--	--
BENZO(G,H,I)PERYLENE	5.69E-01	4.90E-09	6.30E-10	NA	NA	--	--
BENZO(K)FLUORANTHENE	4.30E-01	3.70E-09	4.76E-10	NA	NA	--	--
CHRYSENE	8.25E-01	7.10E-09	9.13E-10	NA	NA	--	--
DIBENZ[A, H]ANTHRACENE	2.04E-01	1.76E-09	2.26E-10	NA	NA	--	--
FLUORANTHENE	1.11E+00	9.55E-09	1.23E-09	NA	NA	--	--
FLUORENE	1.56E-01	1.34E-09	1.73E-10	NA	NA	--	--
INDENO(1,2,3-CD)PYRENE	6.13E-01	5.28E-09	6.78E-10	NA	NA	--	--
2-METHYLNAPHTHALENE	1.39E-01	1.20E-09	1.54E-10	NA	NA	--	--
NAPHTHALENE	1.26E-01	1.08E-09	1.39E-10	NA	NA	--	--
PHENANTHRENE	4.50E-01	3.87E-09	4.98E-10	NA	NA	--	--
PYRENE	1.32E+00	1.14E-08	1.46E-09	NA	NA	--	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	4.20E+00	2.78E-08	3.58E-09	2.00E-02	1.40E-02	1.39E-06	5.01E-11
BUTYLBENZYLPHTHALATE	1.15E-01	7.61E-10	9.79E-11	2.00E-01	NA	3.81E-09	--
CARBAZOLE	1.58E-01	1.05E-09	1.35E-10	NA	2.00E-02	--	2.69E-12
2-CHLOROPHENOL	2.11E-01	1.40E-09	1.80E-10	5.00E-03	NA	2.79E-07	--
4-CHLOROPHENYL PHENYL ETHER	2.09E-01	1.38E-09	1.78E-10	NA	NA	--	--
DIBENZOFURAN	1.56E-01	1.03E-09	1.33E-10	4.00E-03	NA	2.58E-07	--
DIBUTYLPHTHALATE	6.60E-02	4.37E-10	5.62E-11	1.00E-01	NA	4.37E-09	--
DIOCTYLPHTHALATE	2.01E-01	1.33E-09	1.71E-10	2.00E-02	NA	6.65E-08	--
4-METHYLPHENOL	5.50E-02	3.64E-10	4.68E-11	5.00E-03	NA	7.28E-08	--
Volatiles							
2-BUTANONE	4.00E-03	--	--	6.00E-01	NA	--	--
ACETONE	7.29E-02	--	--	1.00E-01	NA	--	--
BENZENE	2.86E-03	--	--	3.00E-03	5.50E-02	--	--
CHLOROFORM	1.10E-03	--	--	1.00E-02	6.10E-03	--	--
ETHYLBENZENE	2.53E-03	--	--	1.00E-01	NA	--	--
TRICHLOROETHENE	2.20E-03	--	--	6.00E-03	1.10E-02	--	--
VINYL CHLORIDE	4.37E-03	--	--	3.00E-03	1.50E+00	--	--
Cumulative Risk						**4.15E-05**	**2.23E-09**

TABLE L-9 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR RECREATIONAL USERS DUE TO INHALATION OF PARTICULATES FROM SURFACE SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Inhalation of Particles from Surface Soil**

Inhalation Rate = IR	0.833	m3/hr
Exposure Time = ET	10	hr/day
Exposure Frequency = EF	141	day/yr
Exposure Duration = ED	9	yr
Body Weight = BW	36	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC (mg/m3)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Inorganics							
ALUMINUM	5.73E-06	7.68E-07	6.58E-08	1.40E-03	NA	5.49E-04	--
ANTIMONY	5.27E-10	7.06E-11	6.05E-12	NA	NA	--	--
ARSENIC	4.31E-09	5.78E-10	4.95E-11	NA	1.50E+01	--	7.43E-10
BARIUM	6.33E-08	8.48E-09	7.27E-10	1.40E-04	NA	6.06E-05	--
BERYLLIUM	2.41E-10	3.23E-11	2.77E-12	5.70E-06	8.40E+00	5.67E-06	2.33E-11
CADMIUM	2.55E-10	3.42E-11	2.93E-12	NA	6.30E+00	--	1.85E-11
CHROMIUM	1.45E-08	1.94E-09	1.66E-10	NA	2.90E+02	--	4.82E-08
COBALT	5.14E-09	6.89E-10	5.90E-11	NA	NA	--	--
COPPER	3.58E-08	4.80E-09	4.12E-10	NA	NA	--	--
MANGANESE	2.27E-07	3.04E-08	2.60E-09	1.40E-05	NA	2.17E-03	--
MERCURY	7.80E-10	1.05E-10	8.97E-12	NA	NA	--	--
NICKEL	1.25E-08	1.68E-09	1.44E-10	NA	NA	--	--
SELENIUM	4.43E-10	5.94E-11	5.09E-12	NA	NA	--	--
SILVER	1.62E-10	2.17E-11	1.86E-12	NA	NA	--	--
THALLIUM	7.52E-11	1.01E-11	8.65E-13	NA	NA	--	--
VANADIUM	2.11E-08	2.83E-09	2.43E-10	NA	NA	--	--
ZINC	9.17E-08	1.23E-08	1.05E-09	NA	NA	--	--

Chemical of Concern	EPC (mg/m3)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
PAHs							
ACENAPHTHENE	1.06E-10	1.42E-11	1.22E-12	6.00E-02	NA	2.37E-10	--
ACENAPHTHYLENE	1.83E-10	2.46E-11	2.11E-12	8.60E-04	NA	2.86E-08	--
ANTHRACENE	1.08E-10	1.44E-11	1.24E-12	3.00E-01	NA	4.81E-11	--
BENZ(A)ANTHRACENE	4.95E-10	6.64E-11	5.69E-12	NA	3.10E-01	--	1.77E-12
BENZO[A]PYRENE	6.64E-10	8.91E-11	7.64E-12	NA	3.10E+00	--	2.37E-11
BENZO(B)FLUORANTHENE	9.77E-10	1.31E-10	1.12E-11	NA	3.10E-01	--	3.48E-12
BENZO(G,H,I)PERYLENE	4.31E-10	5.78E-11	4.95E-12	3.00E-02	NA	1.93E-09	--
BENZO(K)FLUORANTHENE	3.26E-10	4.37E-11	3.74E-12	NA	3.10E-02	--	1.16E-13
CHRYSENE	6.25E-10	8.38E-11	7.18E-12	NA	3.10E-03	--	2.23E-14
DIBENZ[A, H]ANTHRACENE	1.55E-10	2.07E-11	1.78E-12	NA	3.10E+00	--	5.51E-12
FLUORANTHENE	8.41E-10	1.13E-10	9.66E-12	4.00E-02	NA	2.82E-09	--
FLUORENE	1.18E-10	1.58E-11	1.36E-12	4.00E-02	NA	3.96E-10	--
INDENO(1,2,3-CD)PYRENE	4.64E-10	6.23E-11	5.34E-12	NA	3.10E-01	--	1.65E-12
2-METHYLNAPHTHALENE	1.05E-10	1.41E-11	1.21E-12	NA	NA	--	--
NAPHTHALENE	9.55E-11	1.28E-11	1.10E-12	8.60E-04	NA	1.49E-08	--
PHENANTHRENE	3.41E-10	4.57E-11	3.92E-12	8.60E-04	NA	5.31E-08	--
PYRENE	1.00E-09	1.34E-10	1.15E-11	3.00E-02	NA	4.47E-09	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	3.18E-09	4.27E-10	3.66E-11	2.20E-02	NA	1.94E-08	--
BUTYLBENZYLPHTHALATE	8.71E-11	1.17E-11	1.00E-12	2.00E-01	NA	5.84E-11	--
CARBAZOLE	1.20E-10	1.60E-11	1.38E-12	NA	2.00E-02	--	2.75E-14
2-CHLOROPHENOL	1.60E-10	2.14E-11	1.84E-12	5.00E-03	NA	4.29E-09	--
4-CHLOROPHENYL PHENYL ETHER	1.58E-10	2.12E-11	1.82E-12	NA	NA	--	--
DIBENZOFURAN	1.18E-10	1.58E-11	1.36E-12	4.00E-03	NA	3.96E-09	--
DIBUTYLPHTHALATE	5.00E-11	6.70E-12	5.75E-13	1.00E-01	NA	6.70E-11	--
DIOCTYLPHTHALATE	1.52E-10	2.04E-11	1.75E-12	2.00E-02	NA	1.02E-09	--
4-METHYLPHENOL	4.17E-11	5.59E-12	4.79E-13	5.00E-03	NA	1.12E-09	--
Volatiles							
2-BUTANONE	3.03E-12	4.06E-13	3.48E-14	2.90E-01	NA	1.40E-12	--
ACETONE	5.52E-11	7.40E-12	6.35E-13	1.00E-01	NA	7.40E-11	--
BENZENE	2.17E-12	2.91E-13	2.49E-14	1.70E-03	2.70E-02	1.71E-10	6.72E-16
CHLOROFORM	8.33E-13	1.12E-13	9.58E-15	8.60E-05	8.05E-02	1.30E-09	7.71E-16
ETHYLBENZENE	1.92E-12	2.57E-13	2.20E-14	2.90E-01	NA	8.86E-13	--
TRICHLOROETHENE	1.67E-12	2.23E-13	1.92E-14	6.00E-03	6.00E-03	3.72E-11	1.15E-16
VINYL CHLORIDE	3.31E-12	4.44E-13	3.80E-14	2.90E-02	3.10E-02	1.53E-11	1.18E-15
Cumulative Risk						**2.78E-03**	**4.90E-08**

TABLE L-10 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR COMMERCIAL WORKERS DUE TO EXPOSURES TO SURFACE SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Incidental Ingestion of Surface Soil**

Ingestion Rate = CR	50	mg/day
Exposure Frequency = EF	250	day/yr
Exposure Duration = ED	25	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	9,125	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	7.56E+03	3.70E-03	1.32E-03	1.00E+00	NA	3.70E-03	--
ANTIMONY	6.95E-01	3.40E-07	1.21E-07	4.00E-04	NA	8.50E-04	--
ARSENIC	5.69E+00	2.78E-06	9.94E-07	3.00E-04	1.50E+00	9.28E-03	1.49E-06
BARIUM	8.35E+01	4.09E-05	1.46E-05	7.00E-02	NA	5.84E-04	--
BERYLLIUM	3.18E-01	1.56E-07	5.56E-08	2.00E-03	NA	7.78E-05	--
CADMIUM	3.37E-01	1.65E-07	5.89E-08	5.00E-04	NA	3.30E-04	--
CHROMIUM	1.91E+01	9.34E-06	3.34E-06	3.00E-03	NA	3.11E-03	--
COBALT	6.78E+00	3.32E-06	1.18E-06	6.00E-02	NA	5.53E-05	--
COPPER	4.73E+01	2.31E-05	8.26E-06	3.70E-02	NA	6.25E-04	--
MANGANESE	2.99E+02	1.46E-04	5.22E-05	2.40E-02	NA	6.10E-03	--
MERCURY	1.03E+00	5.04E-07	1.80E-07	1.00E-04	NA	5.04E-03	--
NICKEL	1.65E+01	8.07E-06	2.88E-06	2.00E-02	NA	4.04E-04	--
SELENIUM	5.85E-01	2.86E-07	1.02E-07	5.00E-03	NA	5.72E-05	--
SILVER	2.14E-01	1.05E-07	3.74E-08	5.00E-03	NA	2.09E-05	--
THALLIUM	9.93E-02	4.86E-08	1.74E-08	6.60E-05	NA	7.36E-04	--
VANADIUM	2.79E+01	1.36E-05	4.87E-06	7.00E-03	NA	1.95E-03	--
ZINC	1.21E+02	5.92E-05	2.11E-05	3.00E-01	NA	1.97E-04	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.40E-01	6.85E-08	2.45E-08	6.00E-02	NA	1.14E-06	--
ACENAPHTHYLENE	2.42E-01	1.18E-07	4.23E-08	2.00E-02	NA	5.92E-06	--
ANTHRACENE	1.42E-01	6.95E-08	2.48E-08	3.00E-01	NA	2.32E-07	--
BENZ(A)ANTHRACENE	6.54E-01	3.20E-07	1.14E-07	NA	7.30E-01	--	8.34E-08
BENZO[A]PYRENE	8.77E-01	4.29E-07	1.53E-07	NA	7.30E+00	--	1.12E-06
BENZO(B)FLUORANTHENE	1.29E+00	6.31E-07	2.25E-07	NA	7.30E-01	--	1.65E-07
BENZO(G,H,I)PERYLENE	5.69E-01	2.78E-07	9.94E-08	3.00E-02	NA	9.28E-06	--
BENZO(K)FLUORANTHENE	4.30E-01	2.10E-07	7.51E-08	NA	7.30E-02	--	5.48E-09
CHRYSENE	8.25E-01	4.04E-07	1.44E-07	NA	7.30E-03	--	1.05E-09
DIBENZ[A, H]ANTHRACENE	2.04E-01	9.98E-08	3.56E-08	NA	7.30E+00	--	2.60E-07
FLUORANTHENE	1.11E+00	5.43E-07	1.94E-07	4.00E-02	NA	1.36E-05	--
FLUORENE	1.56E-01	7.63E-08	2.73E-08	4.00E-02	NA	1.91E-06	--
INDENO(1,2,3-CD)PYRENE	6.13E-01	3.00E-07	1.07E-07	NA	7.30E-01	--	7.82E-08
2-METHYLNAPHTHALENE	1.39E-01	6.80E-08	2.43E-08	2.00E-02	NA	3.40E-06	--
NAPHTHALENE	1.26E-01	6.16E-08	2.20E-08	2.00E-02	NA	3.08E-06	--
PHENANTHRENE	4.50E-01	2.20E-07	7.86E-08	2.00E-02	NA	1.10E-05	--
PYRENE	1.32E+00	6.46E-07	2.31E-07	3.00E-02	NA	2.15E-05	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	4.20E+00	2.05E-06	7.34E-07	2.00E-02	1.40E-02	1.03E-04	1.03E-08
BUTYLBENZYLPHTHALATE	1.15E-01	5.63E-08	2.01E-08	2.00E-01	NA	2.81E-07	--
CARBAZOLE	1.58E-01	7.73E-08	2.76E-08	NA	2.00E-02	--	5.52E-10
2-CHLOROPHENOL	2.11E-01	1.03E-07	3.69E-08	5.00E-03	NA	2.06E-05	--
4-CHLOROPHENYL PHENYL ETHER	2.09E-01	1.02E-07	3.65E-08	NA	NA	--	--
DIBENZOFURAN	1.56E-01	7.63E-08	2.73E-08	4.00E-03	NA	1.91E-05	--
DIBUTYLPHTHALATE	6.60E-02	3.23E-08	1.15E-08	1.00E-01	NA	3.23E-07	--
DIOCTYLPHTHALATE	2.01E-01	9.83E-08	3.51E-08	2.00E-02	NA	4.92E-06	--
4-METHYLPHENOL	5.50E-02	2.69E-08	9.61E-09	5.00E-03	NA	5.38E-06	--
Volatiles							
2-BUTANONE	4.00E-03	1.96E-09	6.99E-10	6.00E-01	NA	3.26E-09	--
ACETONE	7.29E-02	3.57E-08	1.27E-08	1.00E-01	NA	3.57E-07	--
BENZENE	2.86E-03	1.40E-09	5.00E-10	3.00E-03	5.50E-02	4.66E-07	2.75E-11
CHLOROFORM	1.10E-03	5.38E-10	1.92E-10	1.00E-02	6.10E-03	5.38E-08	1.17E-12
ETHYLBENZENE	2.53E-03	1.24E-09	4.42E-10	1.00E-01	NA	1.24E-08	--
TRICHLOROETHENE	2.20E-03	1.08E-09	3.84E-10	6.00E-03	1.10E-02	1.79E-07	4.23E-12
VINYL CHLORIDE	4.37E-03	2.14E-09	7.64E-10	3.00E-03	1.50E+00	7.13E-07	1.15E-09
Cumulative Risk						**3.33E-02**	**3.21E-06**

TABLE L-11 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR COMMERCIAL WORKERS DUE TO EXPOSURE TO DERMAL CONTACT WITH SURFACE SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Dermal Contact with Surface Soil**

Surface Area for Contact = SA	5,700	cm2/event
Adherence Factor = AF	0.1	mg/cm2
Absorption Factor = ABS	chemical-specific	
Exposure Frequency = EF	250	event/yr
Exposure Duration = ED	25	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	9,125	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC (mg/kg)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Inorganics							
ALUMINUM	7.56E+03	--	--	1.00E+00	NA	--	--
ANTIMONY	6.95E-01	--	--	6.00E-05	NA	--	--
ARSENIC	5.69E+00	9.52E-07	3.40E-07	3.00E-04	1.50E+00	3.17E-03	5.10E-07
BARIUM	8.35E+01	--	--	4.90E-03	NA	--	--
BERYLLIUM	3.18E-01	--	--	1.40E-05	NA	--	--
CADMIUM	3.37E-01	1.88E-09	6.71E-10	1.25E-05	NA	1.50E-04	--
CHROMIUM	1.91E+01	--	--	7.50E-05	NA	--	--
COBALT	6.78E+00	--	--	6.00E-02	NA	--	--
COPPER	4.73E+01	--	--	3.70E-02	NA	--	--
MANGANESE	2.99E+02	--	--	9.60E-04	NA	--	--
MERCURY	1.03E+00	--	--	1.00E-04	NA	--	--
NICKEL	1.65E+01	--	--	8.00E-04	NA	--	--
SELENIUM	5.85E-01	--	--	5.00E-03	NA	--	--
SILVER	2.14E-01	--	--	2.00E-04	NA	--	--
THALLIUM	9.93E-02	--	--	6.60E-05	NA	--	--
VANADIUM	2.79E+01	--	--	1.82E-04	NA	--	--
ZINC	1.21E+02	--	--	3.00E-01	NA	--	--

Chemical of Concern	EPC (mg/kg)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
PAHs							
ACENAPHTHENE	1.40E-01	1.02E-07	3.63E-08	NA	NA	--	--
ACENAPHTHYLENE	2.42E-01	1.75E-07	6.27E-08	NA	NA	--	--
ANTHRACENE	1.42E-01	1.03E-07	3.68E-08	NA	NA	--	--
BENZ(A)ANTHRACENE	6.54E-01	4.74E-07	1.69E-07	NA	NA	--	--
BENZO[A]PYRENE	8.77E-01	6.36E-07	2.27E-07	NA	NA	--	--
BENZO(B)FLUORANTHENE	1.29E+00	9.35E-07	3.34E-07	NA	NA	--	--
BENZO(G,H,I)PERYLENE	5.69E-01	4.13E-07	1.47E-07	NA	NA	--	--
BENZO(K)FLUORANTHENE	4.30E-01	3.12E-07	1.11E-07	NA	NA	--	--
CHRYSENE	8.25E-01	5.98E-07	2.14E-07	NA	NA	--	--
DIBENZ[A, H]ANTHRACENE	2.04E-01	1.48E-07	5.28E-08	NA	NA	--	--
FLUORANTHENE	1.11E+00	8.05E-07	2.87E-07	NA	NA	--	--
FLUORENE	1.56E-01	1.13E-07	4.04E-08	NA	NA	--	--
INDENO(1,2,3-CD)PYRENE	6.13E-01	4.44E-07	1.59E-07	NA	NA	--	--
2-METHYLNAPHTHALENE	1.39E-01	1.01E-07	3.60E-08	NA	NA	--	--
NAPHTHALENE	1.26E-01	9.14E-08	3.26E-08	NA	NA	--	--
PHENANTHRENE	4.50E-01	3.26E-07	1.17E-07	NA	NA	--	--
PYRENE	1.32E+00	9.57E-07	3.42E-07	NA	NA	--	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	4.20E+00	2.34E-06	8.37E-07	2.00E-02	1.40E-02	1.17E-04	1.17E-08
BUTYLBENZYLPHTHALATE	1.15E-01	6.41E-08	2.29E-08	2.00E-01	NA	3.21E-07	--
CARBAZOLE	1.58E-01	8.81E-08	3.15E-08	NA	2.00E-02	--	6.29E-10
2-CHLOROPHENOL	2.11E-01	1.18E-07	4.20E-08	5.00E-03	NA	2.35E-05	--
4-CHLOROPHENYL PHENYL ETHER	2.09E-01	1.17E-07	4.16E-08	NA	NA	--	--
DIBENZOFURAN	1.56E-01	8.70E-08	3.11E-08	4.00E-03	NA	2.18E-05	--
DIBUTYLPHTHALATE	6.60E-02	3.68E-08	1.31E-08	1.00E-01	NA	3.68E-07	--
DIOCTYLPHTHALATE	2.01E-01	1.12E-07	4.00E-08	2.00E-02	NA	5.61E-06	--
4-METHYLPHENOL	5.50E-02	3.07E-08	1.10E-08	5.00E-03	NA	6.14E-06	--
Volatiles							
2-BUTANONE	4.00E-03	--	--	6.00E-01	NA	--	--
ACETONE	7.29E-02	--	--	1.00E-01	NA	--	--
BENZENE	2.86E-03	--	--	3.00E-03	5.50E-02	--	--
CHLOROFORM	1.10E-03	--	--	1.00E-02	6.10E-03	--	--
ETHYLBENZENE	2.53E-03	--	--	1.00E-01	NA	--	--
TRICHLOROETHENE	2.20E-03	--	--	6.00E-03	1.10E-02	--	--
VINYL CHLORIDE	4.37E-03	--	--	3.00E-03	1.50E+00	--	--
Cumulative Risk						**3.50E-03**	**5.22E-07**

TABLE L-12 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR COMMERCIAL WORKERS DUE TO INHALATION OF PARTICULATES FROM SURFACE SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Inhalation of Particles from Surface Soil**

Inhalation Rate = IR	0.833	m3/hr
Exposure Time = ET	8	hr/day
Exposure Frequency = EF	250	day/yr
Exposure Duration = ED	25	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	9,125	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	5.73E-06	3.73E-07	1.33E-07	1.40E-03	NA	2.67E-04	--
ANTIMONY	5.27E-10	3.43E-11	1.23E-11	NA	NA	--	--
ARSENIC	4.31E-09	2.81E-10	1.00E-10	NA	1.50E+01	--	1.51E-09
BARIUM	6.33E-08	4.12E-09	1.47E-09	1.40E-04	NA	2.95E-05	--
BERYLLIUM	2.41E-10	1.57E-11	5.61E-12	5.70E-06	8.40E+00	2.76E-06	4.71E-11
CADMIUM	2.55E-10	1.66E-11	5.95E-12	NA	6.30E+00	--	3.75E-11
CHROMIUM	1.45E-08	9.44E-10	3.37E-10	NA	2.90E+02	--	9.77E-08
COBALT	5.14E-09	3.35E-10	1.20E-10	NA	NA	--	--
COPPER	3.58E-08	2.34E-09	8.34E-10	NA	NA	--	--
MANGANESE	2.27E-07	1.48E-08	5.28E-09	1.40E-05	NA	1.06E-03	--
MERCURY	7.80E-10	5.09E-11	1.82E-11	NA	NA	--	--
NICKEL	1.25E-08	8.15E-10	2.91E-10	NA	NA	--	--
SELENIUM	4.43E-10	2.89E-11	1.03E-11	NA	NA	--	--
SILVER	1.62E-10	1.06E-11	3.78E-12	NA	NA	--	--
THALLIUM	7.52E-11	4.91E-12	1.75E-12	NA	NA	--	--
VANADIUM	2.11E-08	1.38E-09	4.92E-10	NA	NA	--	--
ZINC	9.17E-08	5.98E-09	2.13E-09	NA	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.06E-10	6.92E-12	2.47E-12	6.00E-02	NA	1.15E-10	--
ACENAPHTHYLENE	1.83E-10	1.20E-11	4.27E-12	8.60E-04	NA	1.39E-08	--
ANTHRACENE	1.08E-10	7.01E-12	2.51E-12	3.00E-01	NA	2.34E-11	--
BENZ(A)ANTHRACENE	4.95E-10	3.23E-11	1.15E-11	NA	3.10E-01	--	3.58E-12
BENZO[A]PYRENE	6.64E-10	4.33E-11	1.55E-11	NA	3.10E+00	--	4.80E-11
BENZO(B)FLUORANTHENE	9.77E-10	6.37E-11	2.28E-11	NA	3.10E-01	--	7.06E-12
BENZO(G,H,I)PERYLENE	4.31E-10	2.81E-11	1.00E-11	3.00E-02	NA	9.37E-10	--
BENZO(K)FLUORANTHENE	3.26E-10	2.12E-11	7.59E-12	NA	3.10E-02	--	2.35E-13
CHRYSENE	6.25E-10	4.08E-11	1.46E-11	NA	3.10E-03	--	4.51E-14
DIBENZ[A, H]ANTHRACENE	1.55E-10	1.01E-11	3.60E-12	NA	3.10E+00	--	1.12E-11
FLUORANTHENE	8.41E-10	5.48E-11	1.96E-11	4.00E-02	NA	1.37E-09	--
FLUORENE	1.18E-10	7.71E-12	2.75E-12	4.00E-02	NA	1.93E-10	--
INDENO(1,2,3-CD)PYRENE	4.64E-10	3.03E-11	1.08E-11	NA	3.10E-01	--	3.35E-12
2-METHYLNAPHTHALENE	1.05E-10	6.87E-12	2.45E-12	NA	NA	--	--
NAPHTHALENE	9.55E-11	6.22E-12	2.22E-12	8.60E-04	NA	7.24E-09	--
PHENANTHRENE	3.41E-10	2.22E-11	7.94E-12	8.60E-04	NA	2.58E-08	--
PYRENE	1.00E-09	6.52E-11	2.33E-11	3.00E-02	NA	2.17E-09	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	3.18E-09	2.07E-10	7.41E-11	2.20E-02	NA	9.43E-09	--
BUTYLBENZYLPHTHALATE	8.71E-11	5.68E-12	2.03E-12	2.00E-01	NA	2.84E-11	--
CARBAZOLE	1.20E-10	7.80E-12	2.79E-12	NA	2.00E-02	--	5.57E-14
2-CHLOROPHENOL	1.60E-10	1.04E-11	3.72E-12	5.00E-03	NA	2.08E-09	--
4-CHLOROPHENYL PHENYL ETHER	1.58E-10	1.03E-11	3.69E-12	NA	NA	--	--
DIBENZOFURAN	1.18E-10	7.71E-12	2.75E-12	4.00E-03	NA	1.93E-09	--
DIBUTYLPHTHALATE	5.00E-11	3.26E-12	1.16E-12	1.00E-01	NA	3.26E-11	--
DIOCTYLPHTHALATE	1.52E-10	9.93E-12	3.55E-12	2.00E-02	NA	4.96E-10	--
4-METHYLPHENOL	4.17E-11	2.72E-12	9.70E-13	5.00E-03	NA	5.43E-10	--
Volatiles							
2-BUTANONE	3.03E-12	1.98E-13	7.06E-14	2.90E-01	NA	6.81E-13	--
ACETONE	5.52E-11	3.60E-12	1.29E-12	1.00E-01	NA	3.60E-11	--
BENZENE	2.17E-12	1.41E-13	5.05E-14	1.70E-03	2.70E-02	8.31E-11	1.36E-15
CHLOROFORM	8.33E-13	5.43E-14	1.94E-14	8.60E-05	8.05E-02	6.32E-10	1.56E-15
ETHYLBENZENE	1.92E-12	1.25E-13	4.46E-14	2.90E-01	NA	4.31E-13	--
TRICHLOROETHENE	1.67E-12	1.09E-13	3.88E-14	6.00E-03	6.00E-03	1.81E-11	2.33E-16
VINYL CHLORIDE	3.31E-12	2.16E-13	7.71E-14	2.90E-02	3.10E-02	7.44E-12	2.39E-15
Cumulative Risk						**1.35E-03**	**9.94E-08**

TABLE L-13 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CONSTRUCTION WORKERS DUE TO EXPOSURES TO TOTAL SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Incidental Ingestion of Total Soil**

Ingestion Rate = CR	480	mg/day
Exposure Frequency = EF	150	day/yr
Exposure Duration = ED	1	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	365	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	7.56E+03	2.13E-02	3.04E-04	1.00E+00	NA	2.13E-02	--
ANTIMONY	6.95E-01	1.96E-06	2.80E-08	4.00E-04	NA	4.90E-03	--
ARSENIC	5.69E+00	1.60E-05	2.29E-07	3.00E-04	1.50E+00	5.34E-02	3.44E-07
BARIUM	8.35E+01	2.35E-04	3.36E-06	7.00E-02	NA	3.36E-03	--
BERYLLIUM	3.18E-01	8.96E-07	1.28E-08	2.00E-03	NA	4.48E-04	--
CADMIUM	3.37E-01	9.50E-07	1.36E-08	5.00E-04	NA	1.90E-03	--
CHROMIUM	1.91E+01	5.38E-05	7.69E-07	3.00E-03	NA	1.79E-02	--
COBALT	6.78E+00	1.91E-05	2.73E-07	6.00E-02	NA	3.18E-04	--
COPPER	4.73E+01	1.33E-04	1.90E-06	3.70E-02	NA	3.60E-03	--
MANGANESE	2.99E+02	8.43E-04	1.20E-05	2.40E-02	NA	3.51E-02	--
MERCURY	1.03E+00	2.90E-06	4.15E-08	1.00E-04	NA	2.90E-02	--
NICKEL	1.65E+01	4.65E-05	6.64E-07	2.00E-02	NA	2.32E-03	--
SELENIUM	5.85E-01	1.65E-06	2.36E-08	5.00E-03	NA	3.30E-04	--
SILVER	2.14E-01	6.03E-07	8.62E-09	5.00E-03	NA	1.21E-04	--
THALLIUM	9.93E-02	2.80E-07	4.00E-09	6.60E-05	NA	4.24E-03	--
VANADIUM	2.79E+01	7.86E-05	1.12E-06	7.00E-03	NA	1.12E-02	--
ZINC	1.21E+02	3.41E-04	4.87E-06	3.00E-01	NA	1.14E-03	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.40E-01	3.95E-07	5.64E-09	6.00E-02	NA	6.58E-06	--
ACENAPHTHYLENE	2.42E-01	6.82E-07	9.74E-09	2.00E-02	NA	3.41E-05	--
ANTHRACENE	1.42E-01	4.00E-07	5.72E-09	3.00E-01	NA	1.33E-06	--
BENZ(A)ANTHRACENE	6.54E-01	1.84E-06	2.63E-08	NA	7.30E-01	--	1.92E-08
BENZO[A]PYRENE	8.77E-01	2.47E-06	3.53E-08	NA	7.30E+00	--	2.58E-07
BENZO(B)FLUORANTHENE	1.29E+00	3.64E-06	5.19E-08	NA	7.30E-01	--	3.79E-08
BENZO(G,H,I)PERYLENE	5.69E-01	1.60E-06	2.29E-08	3.00E-02	NA	5.34E-05	--
BENZO(K)FLUORANTHENE	4.30E-01	1.21E-06	1.73E-08	NA	7.30E-02	--	1.26E-09
CHRYSENE	8.25E-01	2.32E-06	3.32E-08	NA	7.30E-03	--	2.42E-10
DIBENZ[A, H]ANTHRACENE	2.04E-01	5.75E-07	8.21E-09	NA	7.30E+00	--	6.00E-08
FLUORANTHENE	1.11E+00	3.13E-06	4.47E-08	4.00E-02	NA	7.82E-05	--
FLUORENE	1.56E-01	4.40E-07	6.28E-09	4.00E-02	NA	1.10E-05	--
INDENO(1,2,3-CD)PYRENE	6.13E-01	1.73E-06	2.47E-08	NA	7.30E-01	--	1.80E-08
2-METHYLNAPHTHALENE	1.39E-01	3.92E-07	5.60E-09	2.00E-02	NA	1.96E-05	--
NAPHTHALENE	1.26E-01	3.55E-07	5.07E-09	2.00E-02	NA	1.78E-05	--
PHENANTHRENE	4.50E-01	1.27E-06	1.81E-08	2.00E-02	NA	6.34E-05	--
PYRENE	1.32E+00	3.72E-06	5.31E-08	3.00E-02	NA	1.24E-04	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	4.20E+00	1.18E-05	1.69E-07	2.00E-02	1.40E-02	5.92E-04	2.37E-09
BUTYLBENZYLPHTHALATE	1.15E-01	3.24E-07	4.63E-09	2.00E-01	NA	1.62E-06	--
CARBAZOLE	1.58E-01	4.45E-07	6.36E-09	NA	2.00E-02	--	1.27E-10
2-CHLOROPHENOL	2.11E-01	5.95E-07	8.49E-09	5.00E-03	NA	1.19E-04	--
4-CHLOROPHENYL PHENYL ETHER	2.09E-01	5.89E-07	8.41E-09	NA	NA	--	--
DIBENZOFURAN	1.56E-01	4.40E-07	6.28E-09	4.00E-03	NA	1.10E-04	--
DIBUTYLPHTHALATE	6.60E-02	1.86E-07	2.66E-09	1.00E-01	NA	1.86E-06	--
DIOCTYLPHTHALATE	2.01E-01	5.66E-07	8.09E-09	2.00E-02	NA	2.83E-05	--
4-METHYLPHENOL	5.50E-02	1.55E-07	2.21E-09	5.00E-03	NA	3.10E-05	--
Volatiles							
2-BUTANONE	4.00E-03	1.13E-08	1.61E-10	6.00E-01	NA	1.88E-08	--
ACETONE	7.29E-02	2.05E-07	2.93E-09	1.00E-01	NA	2.05E-06	--
BENZENE	2.86E-03	8.06E-09	1.15E-10	3.00E-03	5.50E-02	2.69E-06	6.33E-12
CHLOROFORM	1.10E-03	3.10E-09	4.43E-11	1.00E-02	6.10E-03	3.10E-07	2.70E-13
ETHYLBENZENE	2.53E-03	7.13E-09	1.02E-10	1.00E-01	NA	7.13E-08	--
TRICHLOROETHENE	2.20E-03	6.20E-09	8.86E-11	6.00E-03	1.10E-02	1.03E-06	9.74E-13
VINYL CHLORIDE	4.37E-03	1.23E-08	1.76E-10	3.00E-03	1.50E+00	4.10E-06	2.64E-10
Cumulative Risk						**1.92E-01**	**7.41E-07**

TABLE L-14 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CONSTRUCTION WORKER DUE TO EXPOSURE TO DERMAL CONTACT WITH TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Dermal Contact with Total Soil**

Surface Area for Contact = SA	3,300	cm2/event
Adherence Factor = AF	0.3	mg/cm2
Absorption Factor = ABS	chemical-specific	
Exposure Frequency = EF	150	event/yr
Exposure Duration = ED	1	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	365	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	7.56E+03	--	--	1.00E+00	NA	--	--
ANTIMONY	6.95E-01	--	--	6.00E-05	NA	--	--
ARSENIC	5.69E+00	9.92E-07	1.42E-08	3.00E-04	1.50E+00	3.31E-03	2.13E-08
BARIUM	8.35E+01	--	--	4.90E-03	NA	--	--
BERYLLIUM	3.18E-01	--	--	1.40E-05	NA	--	--
CADMIUM	3.37E-01	1.96E-09	2.80E-11	1.25E-05	NA	1.57E-04	--
CHROMIUM	1.91E+01	--	--	7.50E-05	NA	--	--
COBALT	6.78E+00	--	--	6.00E-02	NA	--	--
COPPER	4.73E+01	--	--	3.70E-02	NA	--	--
MANGANESE	2.99E+02	--	--	9.60E-04	NA	--	--
MERCURY	1.03E+00	--	--	1.00E-04	NA	--	--
NICKEL	1.65E+01	--	--	8.00E-04	NA	--	--
SELENIUM	5.85E-01	--	--	5.00E-03	NA	--	--
SILVER	2.14E-01	--	--	2.00E-04	NA	--	--
THALLIUM	9.93E-02	--	--	6.60E-05	NA	--	--
VANADIUM	2.79E+01	--	--	1.82E-04	NA	--	--
ZINC	1.21E+02	--	--	3.00E-01	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.40E-01	1.06E-07	1.51E-09	NA	NA	--	--
ACENAPHTHYLENE	2.42E-01	1.83E-07	2.61E-09	NA	NA	--	--
ANTHRACENE	1.42E-01	1.07E-07	1.53E-09	NA	NA	--	--
BENZ(A)ANTHRACENE	6.54E-01	4.94E-07	7.06E-09	NA	NA	--	--
BENZO[A]PYRENE	8.77E-01	6.63E-07	9.47E-09	NA	NA	--	--
BENZO(B)FLUORANTHENE	1.29E+00	9.75E-07	1.39E-08	NA	NA	--	--
BENZO(G,H,I)PERYLENE	5.69E-01	4.30E-07	6.14E-09	NA	NA	--	--
BENZO(K)FLUORANTHENE	4.30E-01	3.25E-07	4.64E-09	NA	NA	--	--
CHRYSENE	8.25E-01	6.23E-07	8.91E-09	NA	NA	--	--
DIBENZ[A, H]ANTHRACENE	2.04E-01	1.54E-07	2.20E-09	NA	NA	--	--
FLUORANTHENE	1.11E+00	8.39E-07	1.20E-08	NA	NA	--	--
FLUORENE	1.56E-01	1.18E-07	1.68E-09	NA	NA	--	--
INDENO(1,2,3-CD)PYRENE	6.13E-01	4.63E-07	6.62E-09	NA	NA	--	--
2-METHYLNAPHTHALENE	1.39E-01	1.05E-07	1.50E-09	NA	NA	--	--
NAPHTHALENE	1.26E-01	9.52E-08	1.36E-09	NA	NA	--	--
PHENANTHRENE	4.50E-01	3.40E-07	4.86E-09	NA	NA	--	--
PYRENE	1.32E+00	9.97E-07	1.42E-08	NA	NA	--	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	4.20E+00	2.44E-06	3.49E-08	2.00E-02	1.40E-02	1.22E-04	4.88E-10
BUTYLBENZYLPHTHALATE	1.15E-01	6.68E-08	9.55E-10	2.00E-01	NA	3.34E-07	--
CARBAZOLE	1.58E-01	9.18E-08	1.31E-09	NA	2.00E-02	--	2.62E-11
2-CHLOROPHENOL	2.11E-01	1.23E-07	1.75E-09	5.00E-03	NA	2.45E-05	--
4-CHLOROPHENYL PHENYL ETHER	2.09E-01	1.21E-07	1.74E-09	NA	NA	--	--
DIBENZOFURAN	1.56E-01	9.07E-08	1.30E-09	4.00E-03	NA	2.27E-05	--
DIBUTYLPHTHALATE	6.60E-02	3.84E-08	5.48E-10	1.00E-01	NA	3.84E-07	--
DIOCTYLPHTHALATE	2.01E-01	1.17E-07	1.67E-09	2.00E-02	NA	5.84E-06	--
4-METHYLPHENOL	5.50E-02	3.20E-08	4.57E-10	5.00E-03	NA	6.39E-06	--
Volatiles							
2-BUTANONE	4.00E-03	--	--	6.00E-01	NA	--	--
ACETONE	7.29E-02	--	--	1.00E-01	NA	--	--
BENZENE	2.86E-03	--	--	3.00E-03	5.50E-02	--	--
CHLOROFORM	1.10E-03	--	--	1.00E-02	6.10E-03	--	--
ETHYLBENZENE	2.53E-03	--	--	1.00E-01	NA	--	--
TRICHLOROETHENE	2.20E-03	--	--	6.00E-03	1.10E-02	--	--
VINYL CHLORIDE	4.37E-03	--	--	3.00E-03	1.50E+00	--	--
Cumulative Risk						**3.65E-03**	**4.16E-05**

TABLE L-15 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CONSTRUCTION WORKERS DUE TO INHALATION OF PARTICULATES FROM TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Other Area

*** RME- Inhalation of Particles from Total Soil**

Inhalation Rate = IR	0.833	m3/hr
Exposure Time = ET	8	hr/day
Exposure Frequency = EF	150	day/yr
Exposure Duration = ED	1	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	365	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Inorganics							
ALUMINUM	5.73E-06	2.24E-07	3.20E-09	1.40E-03	NA	1.60E-04	--
ANTIMONY	5.27E-10	2.06E-11	2.94E-13	NA	NA	--	--
ARSENIC	4.31E-09	1.69E-10	2.41E-12	NA	1.50E+01	--	3.61E-11
BARIUM	6.33E-08	2.47E-09	3.54E-11	1.40E-04	NA	1.77E-05	--
BERYLLIUM	2.41E-10	9.43E-12	1.35E-13	5.70E-06	8.40E+00	1.65E-06	1.13E-12
CADMIUM	2.55E-10	9.99E-12	1.43E-13	NA	6.30E+00	--	8.99E-13
CHROMIUM	1.45E-08	5.66E-10	8.09E-12	NA	2.90E+02	--	2.35E-09
COBALT	5.14E-09	2.01E-10	2.87E-12	NA	NA	--	--
COPPER	3.58E-08	1.40E-09	2.00E-11	NA	NA	--	--
MANGANESE	2.27E-07	8.86E-09	1.27E-10	1.40E-05	NA	6.33E-04	--
MERCURY	7.80E-10	3.05E-11	4.36E-13	NA	NA	--	--
NICKEL	1.25E-08	4.89E-10	6.99E-12	NA	NA	--	--
SELENIUM	4.43E-10	1.73E-11	2.48E-13	NA	NA	--	--
SILVER	1.62E-10	6.34E-12	9.06E-14	NA	NA	--	--
THALLIUM	7.52E-11	2.94E-12	4.20E-14	NA	NA	--	--
VANADIUM	2.11E-08	8.27E-10	1.18E-11	NA	NA	--	--
ZINC	9.17E-08	3.59E-09	5.12E-11	NA	NA	--	--

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
PAHs							
ACENAPHTHENE	1.06E-10	4.15E-12	5.93E-14	6.00E-02	NA	6.92E-11	--
ACENAPHTHYLENE	1.83E-10	7.17E-12	1.02E-13	8.60E-04	NA	8.34E-09	--
ANTHRACENE	1.08E-10	4.21E-12	6.01E-14	3.00E-01	NA	1.40E-11	--
BENZ(A)ANTHRACENE	4.95E-10	1.94E-11	2.77E-13	NA	3.10E-01	--	8.58E-14
BENZO[A]PYRENE	6.64E-10	2.60E-11	3.71E-13	NA	3.10E+00	--	1.15E-12
BENZO(B)FLUORANTHENE	9.77E-10	3.82E-11	5.46E-13	NA	3.10E-01	--	1.69E-13
BENZO(G,H,I)PERYLENE	4.31E-10	1.69E-11	2.41E-13	3.00E-02	NA	5.62E-10	--
BENZO(K)FLUORANTHENE	3.26E-10	1.27E-11	1.82E-13	NA	3.10E-02	--	5.64E-15
CHRYSENE	6.25E-10	2.45E-11	3.49E-13	NA	3.10E-03	--	1.08E-15
DIBENZ[A, H]ANTHRACENE	1.55E-10	6.05E-12	8.64E-14	NA	3.10E+00	--	2.68E-13
FLUORANTHENE	8.41E-10	3.29E-11	4.70E-13	4.00E-02	NA	8.22E-10	--
FLUORENE	1.18E-10	4.62E-12	6.61E-14	4.00E-02	NA	1.16E-10	--
INDENO(1,2,3-CD)PYRENE	4.64E-10	1.82E-11	2.60E-13	NA	3.10E-01	--	8.05E-14
2-METHYLNAPHTHALENE	1.05E-10	4.12E-12	5.89E-14	NA	NA	--	--
NAPHTHALENE	9.55E-11	3.73E-12	5.33E-14	8.60E-04	NA	4.34E-09	--
PHENANTHRENE	3.41E-10	1.33E-11	1.91E-13	8.60E-04	NA	1.55E-08	--
PYRENE	1.00E-09	3.91E-11	5.59E-13	3.00E-02	NA	1.30E-09	--
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	3.18E-09	1.24E-10	1.78E-12	2.20E-02	NA	5.66E-09	--
BUTYLBENZYLPHTHALATE	8.71E-11	3.41E-12	4.87E-14	2.00E-01	NA	1.70E-11	--
CARBAZOLE	1.20E-10	4.68E-12	6.69E-14	NA	2.00E-02	--	1.34E-15
2-CHLOROPHENOL	1.60E-10	6.25E-12	8.93E-14	5.00E-03	NA	1.25E-09	--
4-CHLOROPHENYL PHENYL ETHER	1.58E-10	6.19E-12	8.85E-14	NA	NA	--	--
DIBENZOFURAN	1.18E-10	4.62E-12	6.61E-14	4.00E-03	NA	1.16E-09	--
DIBUTYLPHTHALATE	5.00E-11	1.96E-12	2.79E-14	1.00E-01	NA	1.96E-11	--
DIOCTYLPHTHALATE	1.52E-10	5.96E-12	8.51E-14	2.00E-02	NA	2.98E-10	--
4-METHYLPHENOL	4.17E-11	1.63E-12	2.33E-14	5.00E-03	NA	3.26E-10	--
Volatiles							
2-BUTANONE	3.03E-12	1.19E-13	1.69E-15	2.90E-01	NA	4.09E-13	--
ACETONE	5.52E-11	2.16E-12	3.09E-14	1.00E-01	NA	2.16E-11	--
BENZENE	2.17E-12	8.48E-14	1.21E-15	1.70E-03	2.70E-02	4.99E-11	3.27E-17
CHLOROFORM	8.33E-13	3.26E-14	4.66E-16	8.60E-05	8.05E-02	3.79E-10	3.75E-17
ETHYLBENZENE	1.92E-12	7.50E-14	1.07E-15	2.90E-01	NA	2.59E-13	--
TRICHLOROETHENE	1.67E-12	6.52E-14	9.32E-16	6.00E-03	6.00E-03	1.09E-11	5.59E-18
VINYL CHLORIDE	3.31E-12	1.30E-13	1.85E-15	2.90E-02	3.10E-02	4.47E-12	5.74E-17
Cumulative Risk						**8.12E-04**	**2.39E-09**

TABLE L-16 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURES TO VEGETABLE INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: **Other Area**

Determine Daily intake of COPC from produce:

$$I_{ag} = [((Pd + Pv + Pr) * Crag) + (Pr * CR_{pp}) + (Pr_{bg} * CR_{bg})] * F_{ag}$$

I_{ag} = Daily intake of COPC from produce in mg/kg-day (dry weight).
Pd = Above ground exposed produce concentration due to direct deposition onto plant surface in mg/kg.
Pv = Aboveground exposed produce concentration due to air-to-plant transfer in mg/kg.
Pr = Aboveground exposed and protected produce concetration due to root uptake in mg/kg.
Pr_{bg} = Belowground produce concentration due to root uptake in mg/kg.
CR_{ag} = Consumption rate of exposed aboveground produce in kg/kg-day.
Adult = 0.0003 kg/kg-day
Child = 0.00042 kg/kg-day
CR_{pp} = Consumption rate of protected aboveground produce in kg/kg-day.
Adult = 0.00057 kg/kg-day
Child = 0.00077 kg/kg-day
CR_{bg} = Consumption rate of belowground produce in kg/kg-day.
Adult = 0.00014 kg/kg-day
Child = 0.00022 kg/kg-day
F_{ag} = Fraction of produce that is contaminated (unitless).
Adult Resident = 0.25
Child Resident = 0.25

Exposure Frequency = EF 60 day/yr
Exposure Duration = ED 24 yr
Averaging Time (Noncancer) = AT 8,760 days
Averaging Time (Cancer) = AT 25,550 days

Intake (mg/kg-day) = I_{ag} * EF * ED / (AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	Conc in plant (dw) aboveground (mg/kg)	Conc in plant (dw) belowground (mg/kg)	Protected Vegetative Conc in Plant (dw) (mg/kg)	Daily COPC Intake (I_{ag}) (mg/kg-day)	NCADI	CADI	Chronic RfD	SF	HQ	Risk
PAHs										
ACENAPHTHENE	2.77E-02	7.67E-01	2.77E-02	3.29E-05	5.41E-06	1.85E-06	6.00E-02	NA	9.01E-05	--
ACENAPHTHYLENE	4.16E-02	4.16E-02	4.16E-02	1.05E-05	1.73E-06	5.92E-07	2.00E-02	NA	8.64E-05	--
ANTHRACENE	1.43E-02	3.92E-03	1.43E-02	3.26E-06	5.35E-07	1.84E-07	3.00E-01	NA	1.78E-06	--
BENZ[A]ANTHRACENE	1.32E-02	1.38E-02	1.32E-02	3.36E-06	5.52E-07	1.89E-07	NA	7.30E-01	--	1.38E-07
BENZO[A]PYRENE	9.73E-03	1.11E-02	9.73E-03	2.50E-06	4.12E-07	1.41E-07	NA	7.30E+00	--	1.03E-06
BENZO[B]FLUORANTHENE	1.30E-02	2.14E-02	1.30E-02	3.57E-06	5.88E-07	2.01E-07	NA	7.30E-01	--	1.47E-07
BENZO[G,H,I]PERYLENE	3.47E-03	3.47E-03	3.47E-03	8.75E-07	1.44E-07	4.93E-08	3.00E-02	NA	4.80E-06	--
BENZO[K]FLUORANTHENE	4.34E-03	7.14E-03	4.34E-03	1.19E-06	1.96E-07	6.73E-08	NA	7.30E-02	--	4.91E-09
CHRYSENE	1.54E-02	1.69E-02	1.54E-02	3.94E-06	6.48E-07	2.22E-07	NA	7.30E-03	--	1.62E-09
DIBENZ[A,H]ANTHRACENE	1.30E-03	2.92E-03	1.30E-03	3.84E-07	6.32E-08	2.17E-08	NA	7.30E+00	--	1.58E-07
FLUORANTHENE	4.95E-02	4.33E-02	4.95E-02	1.23E-05	2.02E-06	6.92E-07	4.00E-02	NA	5.05E-05	--
FLUORENE	2.36E-02	7.74E-03	2.36E-02	5.39E-06	8.87E-07	3.04E-07	4.00E-02	NA	2.22E-05	--
INDENO[1,2,3-C,D]PYRENE	2.39E-03	7.29E-03	2.39E-03	7.75E-07	1.27E-07	4.37E-08	NA	7.30E-01	--	3.19E-08
2-METHYLNAPHTHALENE	6.05E-02	1.14E+00	6.05E-02	5.32E-05	8.74E-06	3.00E-06	2.00E-02	NA	4.37E-04	--

Chemical of Concern	Conc in plant (dw) aboveground (mg/kg)	Conc in plant (dw) belowground (mg/kg)	Protected Vegetative Conc in Plant (dw) (mg/kg)	Daily COPC Intake (I_{ag}) (mg/kg-day)	NCADI	CADI	Chronic RfD	SF	HQ	Risk
NAPHTHALENE	5.48E-02	1.04E+00	5.48E-02	4.82E-05	7.93E-06	2.72E-06	2.00E-02	NA	3.96E-04	--
PHENANTHRENE	4.09E-02	6.71E-03	4.09E-02	9.12E-06	1.50E-06	5.14E-07	2.00E-02	NA	7.50E-05	--
PYRENE	6.57E-02	3.22E-02	6.57E-02	1.54E-05	2.54E-06	8.69E-07	3.00E-02	NA	8.45E-05	--
SEMIVOLATILES										
2-CHLOROPHENOL	4.60E-01	9.28E-01	4.60E-01	1.33E-04	2.18E-05	7.47E-06	5.00E-03	NA	4.36E-03	--
4-CHLOROPHENYL PHENYL ETHER	1.42E-02	3.09E-03	1.42E-02	3.20E-06	5.26E-07	1.80E-07	NA	NA	--	--
4-METHYLPHENOL	1.61E-01	1.62E+00	1.61E-01	9.16E-05	1.51E-05	5.17E-06	5.00E-03	NA	3.01E-03	--
BIS(2-ETHYLHEXYL)PHTHALATE	1.60E-01	8.95E-02	1.60E-01	3.78E-05	6.22E-06	2.13E-06	2.00E-02	1.40E-02	3.11E-04	2.99E-08
BUTYLBENZYLPHTHALATE	1.25E-02	4.91E-03	1.25E-02	2.90E-06	4.76E-07	1.63E-07	2.00E-01	NA	2.38E-06	--
CARBAZOLE	4.33E-02	4.33E-02	4.33E-02	1.09E-05	1.80E-06	6.16E-07	NA	2.00E-02	--	1.23E-08
DIBENZOFURAN	2.51E-02	2.51E-02	2.51E-02	6.34E-06	1.04E-06	3.57E-07	4.00E-03	NA	2.61E-04	--
DIBUTYLPHTHALATE	4.78E-03	4.24E-02	4.78E-03	2.52E-06	4.15E-07	1.42E-07	1.00E-01	NA	4.15E-06	--
DIOCTYLPHTHALATE	3.16E-05	7.90E-04	3.16E-05	3.45E-08	5.67E-09	1.95E-09	2.00E-02	NA	2.84E-07	--
VOLATILES										
2-BUTANONE	1.07E-01	1.14E+00	1.07E-01	6.33E-05	1.04E-05	3.57E-06	6.00E-01	NA	1.73E-05	--
ACETONE	3.79E+00	4.96E+01	3.79E+00	2.56E-03	4.21E-04	1.44E-04	1.00E-01	NA	4.21E-03	--
BENZENE	6.44E-03	7.64E-02	6.44E-03	4.07E-06	6.69E-07	2.30E-07	3.00E-03	5.50E-02	2.23E-04	1.26E-08
CHLOROFORM	3.18E-03	2.84E-02	3.18E-03	1.68E-06	2.77E-07	9.50E-08	1.00E-02	6.10E-03	2.77E-05	5.79E-10
ETHYLBENZENE	1.54E-03	8.10E-02	1.54E-03	3.17E-06	5.21E-07	1.79E-07	1.00E-01	NA	5.21E-06	--
TRICHLOROETHENE	3.34E-03	4.66E-02	3.34E-03	2.36E-06	3.88E-07	1.33E-07	6.00E-03	1.10E-02	6.46E-05	1.46E-09
VINYL CHLORIDE	3.68E-02	3.19E-01	3.68E-02	1.92E-05	3.15E-06	1.08E-06	3.00E-03	1.50E+00	1.05E-03	1.62E-06
METALS										
ALUMINUM	3.02E+01	3.02E+01	4.91E+00	4.03E-03	6.62E-04	2.27E-04	1.00E+00	NA	6.62E-04	--
ANTIMONY	2.22E-02	2.09E-02	2.22E-02	5.55E-06	9.13E-07	3.13E-07	4.00E-04	NA	2.28E-03	--
ARSENIC	3.60E-02	4.55E-02	3.60E-02	9.43E-06	1.55E-06	5.31E-07	3.00E-04	1.50E+00	5.17E-03	7.97E-07
BARIUM	2.69E+00	1.25E+00	2.69E+00	6.29E-04	1.03E-04	3.54E-05	7.00E-02	NA	1.48E-03	--
BERYLLIUM	8.20E-04	4.77E-04	8.20E-04	1.95E-07	3.21E-08	1.10E-08	2.00E-03	NA	1.60E-05	--
CADMIUM	4.21E-02	2.16E-02	4.21E-02	9.92E-06	1.63E-06	5.59E-07	5.00E-04	NA	3.26E-03	--
CHROMIUM	9.32E-02	8.60E-02	9.32E-02	2.33E-05	3.83E-06	1.31E-06	3.00E-03	NA	1.28E-03	--
COBALT	1.36E-01	1.36E-01	4.75E-02	2.17E-05	3.56E-06	1.22E-06	6.00E-02	NA	5.94E-05	--
COPPER	8.92E+00	8.92E+00	8.92E+00	2.25E-03	3.70E-04	1.27E-04	3.70E-02	NA	1.00E-02	--
LEAD	3.10E+00	2.05E+00	3.10E+00	7.46E-04	1.23E-04	4.21E-05	NA	NA	--	--
MANGANESE	7.48E+01	7.48E+01	1.50E+01	1.04E-02	1.70E-03	5.83E-04	2.40E-02	NA	7.09E-02	--
MERCURY	1.49E-02	3.71E-02	1.49E-02	4.55E-06	7.47E-07	2.56E-07	1.00E-04	NA	7.47E-03	--
NICKEL	1.54E-01	1.32E-01	1.54E-01	3.80E-05	6.25E-06	2.14E-06	2.00E-02	NA	3.13E-04	--
SELENIUM	9.36E-03	1.14E-02	9.36E-03	2.44E-06	4.00E-07	1.37E-07	5.00E-03	NA	8.01E-05	--
SILVER	2.95E-02	2.14E-02	2.95E-02	7.17E-06	1.18E-06	4.04E-07	5.00E-03	NA	2.36E-04	--
THALLIUM	8.52E-05	3.97E-05	8.52E-05	1.99E-08	3.27E-09	1.12E-09	6.60E-05	NA	4.96E-05	--
VANADIUM	1.53E-01	1.53E-01	8.37E-02	2.88E-05	4.74E-06	1.62E-06	7.00E-03	NA	6.76E-04	--
ZINC	5.57E+00	5.32E+00	5.57E+00	1.40E-03	2.30E-04	7.87E-05	3.00E-01	NA	7.65E-04	--
Cumulative Risk									**1.20E-01**	**3.98E-06**

TABLE L-17 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURES TO VEGETABLE INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: **Other Area**

Determine Daily intake of COPC from produce:

$$I_{ag} = [((Pd + Pv + Pr) * Crag) + (Pr * CR_{pp}) + (Pr_{bg} * CR_{bg})] * F_{ag}$$

I_{ag} = Daily intake of COPC from produce in mg/kg-day (dry weight).
Pd = Above ground exposed produce concentration due to direct deposition onto plant surface in mg/kg.
Pv = Aboveground exposed produce concentration due to air-to-plant transfer in mg/kg.
Pr = Aboveground exposed and protected produce concetration due to root uptake in mg/kg.
Pr_{bg} = Belowground produce concentration due to root uptake in mg/kg.
CR_{ag} = Consumption rate of exposed aboveground produce in kg/kg-day.
Adult = 0.0003 kg/kg-day
Child = 0.00042 kg/kg-day
CR_{pp} = Consumption rate of protected aboveground produce in kg/kg-day.
Adult = 0.00057 kg/kg-day
Child = 0.00077 kg/kg-day
CR_{bg} = Consumption rate of belowground produce in kg/kg-day.
Adult = 0.00014 kg/kg-day
Child = 0.00022 kg/kg-day
F_{ag} = Fraction of produce that is contaminated (unitless).
Adult Resident = 0.25
Child Resident = 0.25

Exposure Frequency = EF 60 day/yr
Exposure Duration = ED 24 yr
Averaging Time (Noncancer) = AT 8,760 days
Averaging Time (Cancer) = AT 25,550 days

Intake (mg/kg-day) = I_{ag} * EF * ED / (AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	Conc in plant (dw) aboveground (mg/kg)	Conc in plant (dw) belowground (mg/kg)	Protected Vegetative Conc in Plant (dw) (mg/kg)	Daily COPC Intake (Iag) (mg/kg-day)	NCADI	CADI	Chronic RfD	SF	HQ	Risk
PAHs										
ACENAPHTHENE	2.77E-02	7.67E-01	2.77E-02	5.58E-05	9.17E-06	3.14E-06	6.00E-02	NA	1.53E-04	--
ACENAPHTHYLENE	4.16E-02	4.16E-02	4.16E-02	2.27E-05	3.73E-06	1.28E-06	2.00E-02	NA	1.86E-04	--
ANTHRACENE	1.43E-02	3.92E-03	1.43E-02	7.24E-06	1.19E-06	4.08E-07	3.00E-01	NA	3.97E-06	--
BENZ[A]ANTHRACENE	1.32E-02	1.38E-02	1.32E-02	7.23E-06	1.19E-06	4.08E-07	NA	7.30E-01	--	2.98E-07
BENZO[A]PYRENE	9.73E-03	1.11E-02	9.73E-03	5.38E-06	8.84E-07	3.03E-07	NA	7.30E+00	--	2.21E-06
BENZO[B]FLUORANTHENE	1.30E-02	2.14E-02	1.30E-02	7.54E-06	1.24E-06	4.25E-07	NA	7.30E-01	--	3.10E-07
BENZO[G,H,I]PERYLENE	3.47E-03	3.47E-03	3.47E-03	1.89E-06	3.11E-07	1.06E-07	3.00E-02	NA	1.04E-05	--
BENZO[K]FLUORANTHENE	4.34E-03	7.14E-03	4.34E-03	2.52E-06	4.14E-07	1.42E-07	NA	7.30E-02	--	1.04E-08
CHRYSENE	1.54E-02	1.69E-02	1.54E-02	8.47E-06	1.39E-06	4.78E-07	NA	7.30E-03	--	3.49E-09
DIBENZ[A,H]ANTHRACENE	1.30E-03	2.92E-03	1.30E-03	7.96E-07	1.31E-07	4.49E-08	NA	7.30E+00	--	3.28E-07
FLUORANTHENE	4.95E-02	4.33E-02	4.95E-02	2.66E-05	4.38E-06	1.50E-06	4.00E-02	NA	1.09E-04	--
FLUORENE	2.36E-02	7.74E-03	2.36E-02	1.20E-05	1.97E-06	6.75E-07	4.00E-02	NA	4.92E-05	--
INDENO[1,2,3-C,D]PYRENE	2.39E-03	7.29E-03	2.39E-03	1.57E-06	2.59E-07	8.86E-08	NA	7.30E-01	--	6.47E-08
2-METHYLNAPHTHALENE	6.05E-02	1.14E+00	6.05E-02	9.25E-05	1.52E-05	5.22E-06	2.00E-02	NA	7.61E-04	--

Chemical of Concern	Conc in plant (dw) aboveground (mg/kg)	Conc in plant (dw) belowground (mg/kg)	Protected Vegetative Conc in Plant (dw) (mg/kg)	Daily COPC Intake (Iag) (mg/kg-day)	NCADI	CADI	Chronic RfD	SF	HQ	Risk
NAPHTHALENE	5.48E-02	1.04E+00	5.48E-02	8.39E-05	1.38E-05	4.73E-06	2.00E-02	NA	6.90E-04	--
PHENANTHRENE	4.09E-02	6.71E-03	4.09E-02	2.04E-05	3.35E-06	1.15E-06	2.00E-02	NA	1.68E-04	--
PYRENE	6.57E-02	3.22E-02	6.57E-02	3.40E-05	5.59E-06	1.92E-06	3.00E-02	NA	1.86E-04	--
SEMIVOLATILES										
2-CHLOROPHENOL	4.60E-01	9.28E-01	4.60E-01	2.76E-04	4.54E-05	1.56E-05	5.00E-03	NA	9.09E-03	--
4-CHLOROPHENYL PHENYL ETHER	1.42E-02	3.09E-03	1.42E-02	7.13E-06	1.17E-06	4.02E-07	NA	NA	--	--
4-METHYLPHENOL	1.61E-01	1.62E+00	1.61E-01	1.68E-04	2.76E-05	9.46E-06	5.00E-03	NA	5.52E-03	--
BIS(2-ETHYLHEXYL)PHTHALATE	1.60E-01	8.95E-02	1.60E-01	8.31E-05	1.37E-05	4.68E-06	2.00E-02	1.40E-02	6.83E-04	6.56E-08
BUTYLBENZYLPHTHALATE	1.25E-02	4.91E-03	1.25E-02	6.41E-06	1.05E-06	3.61E-07	2.00E-01	NA	5.27E-06	--
CARBAZOLE	4.33E-02	4.33E-02	4.33E-02	2.36E-05	3.88E-06	1.33E-06	NA	2.00E-02	--	2.66E-08
DIBENZOFURAN	2.51E-02	2.51E-02	2.51E-02	1.37E-05	2.25E-06	7.71E-07	4.00E-03	NA	5.62E-04	--
DIBUTYLPHTHALATE	4.78E-03	4.24E-02	4.78E-03	4.68E-06	7.69E-07	2.64E-07	1.00E-01	NA	7.69E-06	--
DIOCTYLPHTHALATE	3.16E-05	7.90E-04	3.16E-05	5.89E-08	9.68E-09	3.32E-09	2.00E-02	NA	4.84E-07	--
VOLATILES										
2-BUTANONE	1.07E-01	1.14E+00	1.07E-01	1.15E-04	1.89E-05	6.50E-06	6.00E-01	NA	3.16E-05	--
ACETONE	3.79E+00	4.96E+01	3.79E+00	4.58E-03	7.54E-04	2.58E-04	1.00E-01	NA	7.54E-03	--
BENZENE	6.44E-03	7.64E-02	6.44E-03	7.35E-06	1.21E-06	4.14E-07	3.00E-03	5.50E-02	4.03E-04	2.28E-08
CHLOROFORM	3.18E-03	2.84E-02	3.18E-03	3.12E-06	5.13E-07	1.76E-07	1.00E-02	6.10E-03	5.13E-05	1.07E-09
ETHYLBENZENE	1.54E-03	8.10E-02	1.54E-03	5.21E-06	8.56E-07	2.93E-07	1.00E-01	NA	8.56E-06	--
TRICHLOROETHENE	3.34E-03	4.66E-02	3.34E-03	4.20E-06	6.91E-07	2.37E-07	6.00E-03	1.10E-02	1.15E-04	2.61E-09
VINYL CHLORIDE	3.68E-02	3.19E-01	3.68E-02	3.56E-05	5.84E-06	2.00E-06	3.00E-03	1.50E+00	1.95E-03	3.01E-06
METALS										
ALUMINUM	3.02E+01	3.02E+01	4.91E+00	1.16E-02	1.91E-03	6.54E-04	1.00E+00	NA	1.91E-03	--
ANTIMONY	2.22E-02	2.09E-02	2.22E-02	1.20E-05	1.97E-06	6.77E-07	4.00E-04	NA	4.94E-03	--
ARSENIC	3.60E-02	4.55E-02	3.60E-02	2.02E-05	3.31E-06	1.14E-06	3.00E-04	1.50E+00	1.10E-02	1.70E-06
BARIUM	2.69E+00	1.25E+00	2.69E+00	1.39E-03	2.28E-04	7.81E-05	7.00E-02	NA	3.26E-03	--
BERYLLIUM	8.20E-04	4.77E-04	8.20E-04	4.28E-07	7.04E-08	2.41E-08	2.00E-03	NA	3.52E-05	--
CADMIUM	4.21E-02	2.16E-02	4.21E-02	2.18E-05	3.59E-06	1.23E-06	5.00E-04	NA	7.18E-03	--
CHROMIUM	9.32E-02	8.60E-02	9.32E-02	5.04E-05	8.28E-06	2.84E-06	3.00E-03	NA	2.76E-03	--
COBALT	1.36E-01	1.36E-01	4.75E-02	5.69E-05	9.36E-06	3.21E-06	6.00E-02	NA	1.56E-04	--
COPPER	8.92E+00	8.92E+00	8.92E+00	4.86E-03	7.99E-04	2.74E-04	3.70E-02	NA	2.16E-02	--
LEAD	3.10E+00	2.05E+00	3.10E+00	1.63E-03	2.68E-04	9.20E-05	NA	NA	--	--
MANGANESE	7.48E+01	7.48E+01	1.50E+01	2.92E-02	4.80E-03	1.65E-03	2.40E-02	NA	2.00E-01	--
MERCURY	1.49E-02	3.71E-02	1.49E-02	9.36E-06	1.54E-06	5.27E-07	1.00E-04	NA	1.54E-02	--
NICKEL	1.54E-01	1.32E-01	1.54E-01	8.25E-05	1.36E-05	4.65E-06	2.00E-02	NA	6.78E-04	--
SELENIUM	9.36E-03	1.14E-02	9.36E-03	5.21E-06	8.57E-07	2.94E-07	5.00E-03	NA	1.71E-04	--
SILVER	2.95E-02	2.14E-02	2.95E-02	1.56E-05	2.57E-06	8.82E-07	5.00E-03	NA	5.14E-04	--
THALLIUM	8.52E-05	3.97E-05	8.52E-05	4.39E-08	7.22E-09	2.48E-09	6.60E-05	NA	1.09E-04	--
VANADIUM	1.53E-01	1.53E-01	8.37E-02	7.02E-05	1.15E-05	3.96E-06	7.00E-03	NA	1.65E-03	--
ZINC	5.57E+00	5.32E+00	5.57E+00	3.02E-03	4.96E-04	1.70E-04	3.00E-01	NA	1.65E-03	--
Cumulative Risk									**3.01E-01**	**8.05E-06**

Appendix M

Risk Assessment Calculations
Pesticide Area

TABLE M-1 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURES TO TOTAL SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Incidental Ingestion of Total Soil**

Ingestion Rate = CR	100	mg/day			
Exposure Frequency = EF	350	day/yr			
Exposure Duration = ED	24	yr	for cancer	30 yr	for noncancer
Body Weight = BW	70	kg			
Averaging Time (Noncancer) = AT	10,950	days			
Averaging Time (Cancer) = AT	25,550	days			
Conversion Factor = CF	1.00E-06	kg/mg			

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	7.10E-02	9.73E-08	3.33E-08	NA	2.40E-01	--	8.00E-09
DDE	4.40E-02	6.03E-08	2.07E-08	NA	3.40E-01	--	7.03E-09
DDT	9.87E-01	1.35E-06	4.64E-07	5.00E-04	3.40E-01	2.70E-03	1.58E-07
ENDRIN ALDEHYDE	8.20E-03	1.12E-08	3.85E-09	3.00E-04	NA	3.74E-05	--
ENDRIN KETONE	3.20E-02	4.38E-08	1.50E-08	3.00E-04	NA	1.46E-04	--
GAMMA-CHLORDANE	8.70E-03	1.19E-08	4.09E-09	5.00E-04	3.50E-01	2.38E-05	1.43E-09
GAMMA-BHC	5.20E-03	7.12E-09	2.44E-09	3.00E-04	1.30E+00	2.37E-05	3.17E-09
HEPTACHLOR EPOXIDE	9.91E-02	1.36E-07	4.65E-08	1.30E-05	9.10E+00	1.04E-02	4.24E-07
Cumulative Risk						**1.34E-02**	**6.01E-07**

TABLE M-2 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURE TO DERMAL CONTACT WITH TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Dermal Contact with Total Soil**

Surface Area for Contact = SA	5,700	cm2/event
Adherence Factor = AF	0.07	mg/cm2
Absorption Factor = ABS	chemical-specific	
Exposure Frequency = EF	350	event/yr
Exposure Duration = ED	24	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	8,760	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	7.10E-02	3.88E-08	1.33E-08	NA	2.40E-01	--	3.19E-09
DDE	4.40E-02	2.40E-08	8.25E-09	NA	3.40E-01	--	2.80E-09
DDT	9.87E-01	5.39E-07	1.85E-07	5.00E-04	3.40E-01	1.08E-03	6.29E-08
ENDRIN ALDEHYDE	8.20E-03	4.48E-09	1.54E-09	3.00E-04	NA	1.49E-05	--
ENDRIN KETONE	3.20E-02	1.75E-08	6.00E-09	3.00E-04	NA	5.83E-05	--
GAMMA-CHLORDANE	8.70E-03	1.90E-09	6.52E-10	5.00E-04	3.50E-01	3.80E-06	2.28E-10
GAMMA-BHC	5.20E-03	2.84E-09	9.74E-10	3.00E-04	1.30E+00	9.47E-06	1.27E-09
HEPTACHLOR EPOXIDE	9.91E-02	5.42E-08	1.86E-08	1.30E-05	9.10E+00	4.17E-03	1.69E-07
Cumulative Risk						**5.33E-03**	**2.39E-07**

TABLE M-3 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO INHALATION OF PARTICULATES FROM TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Inhalation of Particles from Total Soil**

Inhalation Rate = IR	0.833	m3/hr
Exposure Time = ET	24	hr/day
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	24	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	8,760	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	5.38E-11	1.47E-11	5.05E-12	NA	2.40E-01	--	1.21E-12
DDE	3.33E-11	9.13E-12	3.13E-12	NA	3.40E-01	--	1.06E-12
DDT	7.48E-10	2.05E-10	7.02E-11	5.00E-04	3.40E-01	4.10E-07	2.39E-11
ENDRIN ALDEHYDE	6.21E-12	1.70E-12	5.83E-13	3.00E-04	NA	5.67E-09	--
ENDRIN KETONE	2.42E-11	6.64E-12	2.28E-12	3.00E-04	NA	2.21E-08	--
GAMMA-CHLORDANE	6.59E-12	1.81E-12	6.19E-13	5.00E-04	3.50E-01	3.61E-09	2.17E-13
GAMMA-BHC	3.94E-12	1.08E-12	3.70E-13	3.00E-04	1.30E+00	3.60E-09	4.81E-13
HEPTACHLOR EPOXIDE	7.51E-11	2.06E-11	7.05E-12	1.30E-05	9.10E+00	1.58E-06	6.41E-11
Cumulative Risk						**2.03E-06**	**9.10E-11**

TABLE M-4 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURES TO TOTAL SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Incidental Ingestion of Total Soil**

Ingestion Rate = CR	200	mg/day
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	6	yr
Body Weight = BW	15	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	7.10E-02	9.08E-07	7.78E-08	NA	2.40E-01	--	1.87E-08
DDE	4.40E-02	5.63E-07	4.82E-08	NA	3.40E-01	--	1.64E-08
DDT	9.87E-01	1.26E-05	1.08E-06	5.00E-04	3.40E-01	2.52E-02	3.68E-07
ENDRIN ALDEHYDE	8.20E-03	1.05E-07	8.99E-09	3.00E-04	NA	3.49E-04	--
ENDRIN KETONE	3.20E-02	4.09E-07	3.51E-08	3.00E-04	NA	1.36E-03	--
GAMMA-CHLORDANE	8.70E-03	1.11E-07	9.53E-09	5.00E-04	3.50E-01	2.22E-04	3.34E-09
GAMMA-BHC	5.20E-03	6.65E-08	5.70E-09	3.00E-04	1.30E+00	2.22E-04	7.41E-09
HEPTACHLOR EPOXIDE	9.91E-02	1.27E-06	1.09E-07	1.30E-05	9.10E+00	9.75E-02	9.88E-07
Cumulative Risk						**1.25E-01**	**1.40E-06**

TABLE M-5 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURE TO DERMAL CONTACT WITH TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Dermal Contact with Total Soil**

Surface Area for Contact = SA	2,800	cm2/event
Adherence Factor = AF	0.2	mg/cm2
Absorption Factor = ABS	chemical specific	
Exposure Frequency = EF	350	event/yr
Exposure Duration = ED	6	yr
Body Weight = BW	15	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	7.10E-02	2.54E-07	2.18E-08	NA	2.40E-01	--	5.23E-09
DDE	4.40E-02	1.58E-07	1.35E-08	NA	3.40E-01	--	4.59E-09
DDT	9.87E-01	3.53E-06	3.03E-07	5.00E-04	3.40E-01	7.07E-03	1.03E-07
ENDRIN ALDEHYDE	8.20E-03	2.94E-08	2.52E-09	3.00E-04	NA	9.79E-05	--
ENDRIN KETONE	3.20E-02	1.15E-07	9.82E-09	3.00E-04	NA	3.82E-04	--
GAMMA-CHLORDANE	8.70E-03	1.25E-08	1.07E-09	5.00E-04	3.50E-01	2.49E-05	3.74E-10
GAMMA-BHC	5.20E-03	1.86E-08	1.60E-09	3.00E-04	1.30E+00	6.21E-05	2.07E-09
HEPTACHLOR EPOXIDE	9.91E-02	3.55E-07	3.04E-08	1.30E-05	9.10E+00	2.73E-02	2.77E-07
Cumulative Risk						**3.49E-02**	**3.92E-07**

TABLE M-6 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO INHALATION OF PARTICULATES FROM TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Inhalation of Particles from Total Soil**

Inhalation Rate = IR	0.417	m3/hr
Exposure Time = ET	24	hr/day
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	6	yr
Body Weight = BW	15	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	5.38E-11	3.44E-11	2.95E-12	NA	2.40E-01	--	7.08E-13
DDE	3.33E-11	2.13E-11	1.83E-12	NA	3.40E-01	--	6.22E-13
DDT	7.48E-10	4.78E-10	4.10E-11	5.00E-04	3.40E-01	9.57E-07	1.39E-11
ENDRIN ALDEHYDE	6.21E-12	3.97E-12	3.41E-13	3.00E-04	NA	1.32E-08	--
ENDRIN KETONE	2.42E-11	1.55E-11	1.33E-12	3.00E-04	NA	5.17E-08	--
GAMMA-CHLORDANE	6.59E-12	4.22E-12	3.61E-13	2.00E-04	3.50E-01	2.11E-08	1.27E-13
GAMMA-BHC	3.94E-12	2.52E-12	2.16E-13	3.00E-04	1.30E+00	8.40E-09	2.81E-13
HEPTACHLOR EPOXIDE	7.51E-11	4.80E-11	4.12E-12	1.30E-05	9.10E+00	3.69E-06	3.75E-11
Cumulative Risk						**4.75E-06**	**5.31E-11**

TABLE M-7 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR RECREATIONAL USERS DUE TO EXPOSURES TO SURFACE SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Incidental Ingestion of Surface Soil**

Ingestion Rate = CR	200	mg/day
Exposure Frequency = EF	141	day/yr
Exposure Duration = ED	9	yr
Body Weight = BW	36	kg
Averaging Time (Noncancer) = AT	3,285	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	7.10E-02	1.52E-07	1.96E-08	NA	2.40E-01	--	4.70E-09
DDE	4.40E-02	9.44E-08	1.21E-08	NA	3.40E-01	--	4.13E-09
DDT	9.87E-01	2.12E-06	2.72E-07	5.00E-04	3.40E-01	4.24E-03	9.26E-08
ENDRIN ALDEHYDE	8.20E-03	1.76E-08	2.26E-09	3.00E-04	NA	5.87E-05	--
ENDRIN KETONE	3.20E-02	6.87E-08	8.83E-09	3.00E-04	NA	2.29E-04	--
GAMMA-CHLORDANE	8.70E-03	1.87E-08	2.40E-09	5.00E-04	3.50E-01	3.73E-05	8.40E-10
GAMMA-BHC	5.20E-03	1.12E-08	1.43E-09	3.00E-04	1.30E+00	3.72E-05	1.87E-09
HEPTACHLOR EPOXIDE	9.91E-02	2.13E-07	2.73E-08	1.30E-05	9.10E+00	1.64E-02	2.49E-07
Cumulative Risk						**2.10E-02**	**3.53E-07**

TABLE M-8 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR RECREATIONAL USERS DUE TO EXPOSURE TO DERMAL CONTACT WITH SURFACE SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Dermal Contact with Surface Soil**

Surface Area for Contact = SA	2,900	cm2/event
Adherence Factor = AF	1	mg/cm2
Absorption Factor = ABS	chemical-specific	
Exposure Frequency = EF	0	event/yr
Exposure Duration = ED	9	yr
Body Weight = BW	36	kg
Averaging Time (Noncancer) = AT	3,285	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	7.10E-02	4.70E-10	6.04E-11	NA	2.40E-01	--	1.45E-11
DDE	4.40E-02	2.91E-10	3.75E-11	NA	3.40E-01	--	1.27E-11
DDT	9.87E-01	6.53E-09	8.40E-10	5.00E-04	3.40E-01	1.31E-05	2.86E-10
ENDRIN ALDEHYDE	8.20E-03	5.43E-11	6.98E-12	3.00E-04	NA	1.81E-07	--
ENDRIN KETONE	3.20E-02	2.12E-10	2.72E-11	3.00E-04	NA	7.06E-07	--
GAMMA-CHLORDANE	8.70E-03	2.30E-11	2.96E-12	5.00E-04	3.50E-01	4.61E-08	1.04E-12
GAMMA-BHC	5.20E-03	3.44E-11	4.43E-12	3.00E-04	1.30E+00	1.15E-07	5.75E-12
HEPTACHLOR EPOXIDE	9.91E-02	6.56E-10	8.44E-11	1.30E-05	9.10E+00	5.05E-05	7.68E-10
Cumulative Risk						**6.46E-05**	**1.09E-09**

TABLE M-9 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR RECREATIONAL USERS DUE TO INHALATION OF PARTICULATES FROM SURFACE SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Inhalation of Particles from Surface Soil**

Inhalation Rate = IR	0.833	m3/hr
Exposure Time = ET	10	hr/day
Exposure Frequency = EF	141	day/yr
Exposure Duration = ED	9	yr
Body Weight = BW	36	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	5.38E-11	7.21E-12	6.18E-13	NA	2.40E-01	--	1.48E-13
DDE	3.33E-11	4.47E-12	3.83E-13	NA	3.40E-01	--	1.30E-13
DDT	7.48E-10	1.00E-10	8.59E-12	5.00E-04	3.40E-01	2.01E-07	2.92E-12
ENDRIN ALDEHYDE	6.21E-12	8.33E-13	7.14E-14	3.00E-04	NA	2.78E-09	--
ENDRIN KETONE	2.42E-11	3.25E-12	2.79E-13	3.00E-04	NA	1.08E-08	--
GAMMA-CHLORDANE	6.59E-12	8.84E-13	7.57E-14	2.00E-04	3.50E-01	4.42E-09	2.65E-14
GAMMA-BHC	3.94E-12	5.28E-13	4.53E-14	3.00E-04	1.30E+00	1.76E-09	5.89E-14
HEPTACHLOR EPOXIDE	7.51E-11	1.01E-11	8.63E-13	1.30E-05	9.10E+00	7.74E-07	7.85E-12
Cumulative Risk						**9.95E-07**	**1.11E-11**

TABLE M-10 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR COMMERCIAL WORKERS DUE TO EXPOSURES TO SURFACE SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Incidental Ingestion of Surface Soil**

Ingestion Rate = CR	50	mg/day
Exposure Frequency = EF	250	day/yr
Exposure Duration = ED	25	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	9,125	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	7.10E-02	3.47E-08	1.24E-08	NA	2.40E-01	--	2.98E-09
DDE	4.40E-02	2.15E-08	7.69E-09	NA	3.40E-01	--	2.61E-09
DDT	9.87E-01	4.83E-07	1.72E-07	5.00E-04	3.40E-01	9.66E-04	5.86E-08
ENDRIN ALDEHYDE	8.20E-03	4.01E-09	1.43E-09	3.00E-04	NA	1.34E-05	--
ENDRIN KETONE	3.20E-02	1.57E-08	5.59E-09	3.00E-04	NA	5.22E-05	--
GAMMA-CHLORDANE	8.70E-03	4.26E-09	1.52E-09	5.00E-04	3.50E-01	8.51E-06	5.32E-10
GAMMA-BHC	5.20E-03	2.54E-09	9.09E-10	3.00E-04	1.30E+00	8.48E-06	1.18E-09
HEPTACHLOR EPOXIDE	9.91E-02	4.85E-08	1.73E-08	1.30E-05	9.10E+00	3.73E-03	1.58E-07
Cumulative Risk						**4.78E-03**	**2.24E-07**

TABLE M-11 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR COMMERCIAL WORKERS DUE TO EXPOSURE TO DERMAL CONTACT WITH SURFACE SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Dermal Contact with Surface Soil**

Surface Area for Contact = SA	5,700	cm2/event
Adherence Factor = AF	0.1	mg/cm2
Absorption Factor = ABS	chemical-specific	
Exposure Frequency = EF	250	event/yr
Exposure Duration = ED	25	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	9,125	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	7.10E-02	3.96E-08	1.41E-08	NA	2.40E-01	--	3.39E-09
DDE	4.40E-02	2.45E-08	8.76E-09	NA	3.40E-01	--	2.98E-09
DDT	9.87E-01	5.50E-07	1.97E-07	5.00E-04	3.40E-01	1.10E-03	6.68E-08
ENDRIN ALDEHYDE	8.20E-03	4.57E-09	1.63E-09	3.00E-04	NA	1.52E-05	--
ENDRIN KETONE	3.20E-02	1.78E-08	6.37E-09	3.00E-04	NA	5.95E-05	--
GAMMA-CHLORDANE	8.70E-03	1.94E-09	6.93E-10	5.00E-04	3.50E-01	3.88E-06	2.43E-10
GAMMA-BHC	5.20E-03	2.90E-09	1.04E-09	3.00E-04	1.30E+00	9.67E-06	1.35E-09
HEPTACHLOR EPOXIDE	9.91E-02	5.53E-08	1.97E-08	1.30E-05	9.10E+00	4.25E-03	1.80E-07
Cumulative Risk						**5.44E-03**	**2.54E-07**

TABLE M-12 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR COMMERCIAL WORKERS DUE TO INHALATION OF PARTICULATES FROM SURFACE SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Inhalation of Particles from Surface Soil**

Inhalation Rate = IR	0.833	m3/hr
Exposure Time = ET	8	hr/day
Exposure Frequency = EF	250	day/yr
Exposure Duration = ED	25	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = A	9,125	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	5.38E-11	3.51E-12	1.25E-12	NA	2.40E-01	--	3.01E-13
DDE	3.33E-11	2.17E-12	7.76E-13	NA	3.40E-01	--	2.64E-13
DDT	7.48E-10	4.88E-11	1.74E-11	5.00E-04	3.40E-01	9.75E-08	5.92E-12
ENDRIN ALDEHYDE	6.21E-12	4.05E-13	1.45E-13	3.00E-04	NA	1.35E-09	--
ENDRIN KETONE	2.42E-11	1.58E-12	5.65E-13	3.00E-04	NA	5.27E-09	--
GAMMA-CHLORDANE	6.59E-12	4.30E-13	1.53E-13	2.00E-04	3.50E-01	2.15E-09	5.37E-14
GAMMA-BHC	3.94E-12	2.57E-13	9.17E-14	3.00E-04	1.30E+00	8.56E-10	1.19E-13
HEPTACHLOR EPOXIDE	7.51E-11	4.90E-12	1.75E-12	1.30E-05	9.10E+00	3.77E-07	1.59E-11
Cumulative Risk						**4.84E-07**	**2.26E-11**

TABLE M-13 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CONSTRUCTION WORKERS DUE TO EXPOSURES TO TOTAL SOIL INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Incidental Ingestion of Total Soil**

Ingestion Rate = CR	480	mg/day
Exposure Frequency = EF	150	day/yr
Exposure Duration = ED	1	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	365	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * CR * EF * ED *CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	7.10E-02	2.00E-07	2.86E-09	NA	2.40E-01	--	6.86E-10
DDE	4.40E-02	1.24E-07	1.77E-09	NA	3.40E-01	--	6.02E-10
DDT	9.87E-01	2.78E-06	3.97E-08	5.00E-04	3.40E-01	5.56E-03	1.35E-08
ENDRIN ALDEHYDE	8.20E-03	2.31E-08	3.30E-10	3.00E-04	NA	7.70E-05	--
ENDRIN KETONE	3.20E-02	9.02E-08	1.29E-09	3.00E-04	NA	3.01E-04	--
GAMMA-CHLORDANE	8.70E-03	2.45E-08	3.50E-10	5.00E-04	3.50E-01	4.90E-05	1.23E-10
GAMMA-BHC	5.20E-03	1.47E-08	2.09E-10	3.00E-04	1.30E+00	4.88E-05	2.72E-10
HEPTACHLOR EPOXIDE	9.91E-02	2.79E-07	3.99E-09	1.30E-05	9.10E+00	2.15E-02	3.63E-08
Cumulative Risk						**2.75E-02**	**5.15E-08**

TABLE M-14 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CONSTRUCTION WORKER DUE TO EXPOSURE TO DERMAL CONTACT WITH TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Dermal Contact with Total Soil**

Surface Area for Contact = SA	3,300	cm2/event
Adherence Factor = AF	0.3	mg/cm2
Absorption Factor = ABS	chemical-specific	
Exposure Frequency = EF	150	event/yr
Exposure Duration = ED	1	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	365	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	1.00E-06	kg/mg

Intake (mg/kg-day) = Conc * SA * AF * ABS * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/kg)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
ALDRIN	0.00E+00	0.00E+00	0.00E+00	3.00E-05	1.70E+01	0.00E+00	0.00E+00
ALPHA-BHC	0.00E+00	0.00E+00	0.00E+00	NA	6.30E+00	--	0.00E+00
AROCHLOR 1016	0.00E+00	0.00E+00	0.00E+00	7.00E-05	7.00E-02	0.00E+00	0.00E+00
AROCHLOR 1260	0.00E+00	0.00E+00	0.00E+00	NA	2.00E+00	--	0.00E+00
DDD	7.10E-02	4.13E-08	5.90E-10	NA	2.40E-01	--	1.41E-10
DDE	4.40E-02	2.56E-08	3.65E-10	NA	3.40E-01	--	1.24E-10
DDT	9.87E-01	5.74E-07	8.20E-09	5.00E-04	3.40E-01	1.15E-03	2.79E-09
BETA-BHC	0.00E+00	0.00E+00	0.00E+00	NA	1.80E+00	--	0.00E+00
ENDRIN ALDEHYDE	8.20E-03	4.77E-09	6.81E-11	3.00E-04	NA	1.59E-05	--
ENDRIN KETONE	3.20E-02	1.86E-08	2.66E-10	3.00E-04	NA	6.20E-05	--
GAMMA-CHLORDANE	8.70E-03	2.02E-09	2.89E-11	5.00E-04	3.50E-01	4.05E-06	1.01E-11
GAMMA-BHC	5.20E-03	3.02E-09	4.32E-11	3.00E-04	1.30E+00	1.01E-05	5.61E-11
HEPTACHLOR	0.00E+00	0.00E+00	0.00E+00	5.00E-04	4.50E+00	0.00E+00	0.00E+00
HEPTACHLOR EPOXIDE	9.91E-02	5.76E-08	8.23E-10	1.30E-05	9.10E+00	4.43E-03	7.49E-09
Cumulative Risk						**5.67E-03**	**3.76E-06**

TABLE M-15 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CONSTRUCTION WORKERS DUE TO INHALATION OF PARTICULATES FROM TOTAL SOIL -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: Pesticide Area

*** RME- Inhalation of Particles from Total Soil**

Inhalation Rate = IR	0.833	m3/hr
Exposure Time = ET	8	hr/day
Exposure Frequency = EF	150	day/yr
Exposure Duration = ED	1	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	365	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * IR * ET * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC	NCADI	CADI	Chronic RfD	SF	HQ	Risk
	(mg/m3)	(mg/kg-day)	(mg/kg-day)	(mg/kg-day)	per (mg/kg-day)		
Pesticides/PCBs							
DDD	5.38E-11	2.10E-12	3.01E-14	NA	2.40E-01	--	7.21E-15
DDE	3.33E-11	1.30E-12	1.86E-14	NA	3.40E-01	--	6.33E-15
DDT	7.48E-10	2.93E-11	4.18E-13	5.00E-04	3.40E-01	5.85E-08	1.42E-13
ENDRIN ALDEHYDE	6.21E-12	2.43E-13	3.47E-15	3.00E-04	NA	8.10E-10	--
ENDRIN KETONE	2.42E-11	9.48E-13	1.35E-14	3.00E-04	NA	3.16E-09	--
GAMMA-CHLORDANE	6.59E-12	2.58E-13	3.68E-15	2.00E-04	3.50E-01	1.29E-09	1.29E-15
GAMMA-BHC	3.94E-12	1.54E-13	2.20E-15	3.00E-04	1.30E+00	5.14E-10	2.86E-15
HEPTACHLOR EPOXIDE	7.51E-11	2.94E-12	4.20E-14	1.30E-05	9.10E+00	2.26E-07	3.82E-13
Cumulative Risk						**2.90E-07**	**5.42E-13**

TABLE M-16 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS D
EXPOSURES TO VEGETABLE INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: **Pesticide Area**

Determine Daily intake of COPC from produce:

$$I_{ag} = [((Pd + Pv + Pr) * Crag) + (Pr * CR_{pp}) + (Pr_{bg} * CR_{bg})] * F_{ag}$$

I_{ag} = Daily intake of COPC from produce in mg/kg-day (dry weight).
Pd = Above ground exposed produce concentration due to direct deposition onto plant surface in mg/kg.
Pv = Aboveground exposed produce concentration due to air-to-plant transfer in mg/kg.
Pr = Aboveground exposed and protected produce concetration due to root uptake in mg/kg.
Pr_{bg} = Belowground produce concentration due to root uptake in mg/kg.
CR_{ag} = Consumption rate of exposed aboveground produce in kg/kg-day.
Adult = 0.0003 kg/kg-day
Child = 0.00042 kg/kg-day
CR_{pp} = Consumption rate of protected aboveground produce in kg/kg-day.
Adult = 0.00057 kg/kg-day
Child = 0.00077 kg/kg-day
CR_{bg} = Consumption rate of belowground produce in kg/kg-day.
Adult = 0.00014 kg/kg-day
Child = 0.00022 kg/kg-day
F_{ag} = Fraction of produce that is contaminated (unitless).
Adult Resident = 0.25
Child Resident = 0.25

Exposure Frequency = EF 60 day/yr
Exposure Duration = ED 24 yr
Averaging Time (Noncancer) = AT 8,760 days
Averaging Time (Cancer) = AT 25,550 days

Intake (mg/kg-day) = I_{ag} * EF * ED / (AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	Conc in plant (dw) aboveground (mg/kg)	Conc in plant (dw) belowground (mg/kg)	Daily COPC Intake (I_{ag}) (mg/kg-day)	NCADI	CADI	Chronic RfD	SF	HQ	Risk
Pesticides									
DDD	7.95E-04	1.86E-02	8.24E-07	1.35E-07	4.64E-08	NA	2.40E-01	--	1.11E-08
DDE	4.12E-04	7.79E-03	3.62E-07	5.95E-08	2.04E-08	NA	3.40E-01	--	6.94E-09
DDT	1.18E-03	1.60E-02	8.17E-07	1.34E-07	4.61E-08	5.00E-04	3.40E-01	2.69E-04	1.57E-08
ENDRIN ALDEHYDE	4.72E-05	1.03E-03	4.64E-08	7.63E-09	2.62E-09	3.00E-04	NA	2.54E-05	--
ENDRIN KETONE	1.84E-04	4.03E-03	1.81E-07	2.98E-08	1.02E-08	3.00E-04	NA	9.93E-05	--
GAMMA-CHLORDANE	1.24E-04	1.47E-03	7.85E-08	1.29E-08	4.43E-09	NA	3.50E-01	--	1.55E-09
GAMMA-HCH (LINDANE)	1.28E-03	5.98E-02	2.37E-06	3.90E-07	1.34E-07	3.00E-04	1.30E+00	1.30E-03	1.74E-07
HEPTACHLOR EPOXIDE	6.90E-03	1.47E-02	2.01E-06	3.31E-07	1.13E-07	1.30E-05	9.10E+00	2.55E-02	1.03E-06
Cumulative Risk								**2.72E-02**	**1.24E-06**

TABLE M-17 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURES TO VEGETABLE INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: **Pesticide Area**

Determine Daily intake of COPC from produce:

$$I_{ag} = [((Pd + Pv + Pr) * Crag) + (Pr * CR_{pp}) + (Pr_{bg} * CR_{bg})] * F_{ag}$$

I_{ag} = Daily intake of COPC from produce in mg/kg-day (dry weight).

Pd = Above ground exposed produce concentration due to direct deposition onto plant surface in mg/kg.

Pv = Aboveground exposed produce concentration due to air-to-plant transfer in mg/kg.

Pr = Aboveground exposed and protected produce concetration due to root uptake in mg/kg.

Pr_{bg} = Belowground produce concentration due to root uptake in mg/kg.

CR_{ag} = Consumption rate of exposed aboveground produce in kg/kg-day.

Adult =	0.0003	kg/kg-day
Child =	0.00042	kg/kg-day

CR_{pp} = Consumption rate of protected aboveground produce in kg/kg-day.

Adult =	0.00057	kg/kg-day
Child =	0.00077	kg/kg-day

CR_{bg} = Consumption rate of belowground produce in kg/kg-day.

Adult =	0.00014	kg/kg-day
Child =	0.00022	kg/kg-day

F_{ag} = Fraction of produce that is contaminated (unitless).

Adult Resident =	0.25
Child Resident =	0.25

Exposure Frequency = EF	60	day/yr
Exposure Duration = ED	24	yr
Averaging Time (Noncancer) = AT	8,760	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = I_{ag} * EF * ED / (AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	Conc in plant (dw) aboveground (mg/kg)	Conc in plant (dw) belowground (mg/kg)	Daily COPC Intake (I_{ag}) (mg/kg-day)	NCADI	CADI	Chronic RfD	SF	HQ	Risk
Pesticides									
DDD	7.95E-04	1.86E-02	1.26E-06	2.07E-07	7.10E-08	NA	2.40E-01	--	1.70E-08
DDE	4.12E-04	7.79E-03	5.51E-07	9.06E-08	3.11E-08	NA	3.40E-01	--	1.06E-08
DDT	1.18E-03	1.60E-02	1.23E-06	2.02E-07	6.94E-08	5.00E-04	3.40E-01	4.05E-04	2.36E-08
ENDRIN ALDEHYDE	4.72E-05	1.03E-03	7.09E-08	1.17E-08	3.99E-09	3.00E-04	NA	3.88E-05	--
ENDRIN KETONE	1.84E-04	4.03E-03	2.77E-07	4.55E-08	1.56E-08	3.00E-04	NA	1.52E-04	--
GAMMA-CHLORDANE	1.24E-04	1.47E-03	1.18E-07	1.94E-08	6.64E-09	NA	3.50E-01	--	2.33E-09
GAMMA-HCH (LINDANE)	1.28E-03	5.98E-02	3.67E-06	6.03E-07	2.07E-07	3.00E-04	1.30E+00	2.01E-03	2.69E-07
HEPTACHLOR EPOXIDE	6.90E-03	1.47E-02	2.86E-06	4.70E-07	1.61E-07	1.30E-05	9.10E+00	3.61E-02	1.47E-06
Cumulative Risk								**3.88E-02**	**1.79E-06**

Appendix N

Risk Assessment Calculations
Groundwater

TABLE N-1 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURES TO GROUNDWATER INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: **Groundwater**

*** RME- Ingestion of Groundwater**

Ingestion Rate = CR	2	L/day
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	24	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	8,760	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * CR * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC (mg/L)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Inorganics							
ALUMINUM	7.97E-01	2.18E-02	7.48E-03	1.00E+00	NA	2.18E-02	--
ANTIMONY	1.34E-03	3.67E-05	1.26E-05	4.00E-04	NA	9.18E-02	--
BARIUM	1.48E-01	4.06E-03	1.39E-03	7.00E-02	NA	5.81E-02	--
CADMIUM	2.11E-04	5.78E-06	1.98E-06	5.00E-04	NA	1.16E-02	--
CHROMIUM	5.10E-02	1.40E-03	4.79E-04	3.00E-03	NA	4.66E-01	--
COBALT	3.00E-03	8.22E-05	2.82E-05	6.00E-02	NA	1.37E-03	--
COPPER	4.72E-03	1.29E-04	4.43E-05	3.70E-02	NA	3.50E-03	--
MANGANESE	6.05E-02	1.66E-03	5.68E-04	2.40E-02	NA	6.91E-02	--
NICKEL	1.91E-01	5.23E-03	1.79E-03	2.00E-02	NA	2.62E-01	--
SELENIUM	1.98E-03	5.42E-05	1.86E-05	5.00E-03	NA	1.08E-02	--
VANADIUM	9.00E-04	2.47E-05	8.45E-06	7.00E-03	NA	3.52E-03	--
ZINC	1.31E-02	3.59E-04	1.23E-04	3.00E-01	NA	1.20E-03	--
PAHs							
ACENAPHTHENE	8.00E-04	2.19E-05	7.51E-06	6.00E-02	NA	3.65E-04	--
ANTHRACENE	1.60E-03	4.38E-05	1.50E-05	3.00E-01	NA	1.46E-04	--
BENZ(A)ANTHRACENE	2.84E-03	7.78E-05	2.67E-05	NA	7.30E-01	--	1.95E-05
BENZO[A]PYRENE	1.00E-02	2.74E-04	9.39E-05	NA	7.30E+00	--	6.86E-04
BENZO(B)FLOURANTHENE	5.56E-03	1.52E-04	5.22E-05	NA	7.30E-01	--	3.81E-05
BENZO(G,H,I)PERYLENE	2.94E-03	8.05E-05	2.76E-05	3.00E-02	NA	2.68E-03	--
BENZO(K)FLOURANTHENE	1.72E-03	4.71E-05	1.62E-05	NA	7.30E-02	--	1.18E-06
CHRYSENE	3.95E-03	1.08E-04	3.71E-05	NA	7.30E-03	--	2.71E-07
DIBENZ[A, H]ANTHRACENE	2.00E-03	5.48E-05	1.88E-05	NA	7.30E+00	--	1.37E-04
FLUORANTHENE	9.56E-03	2.62E-04	8.98E-05	4.00E-02	NA	6.55E-03	--
FLUORENE	9.00E-04	2.47E-05	8.45E-06	4.00E-02	NA	6.16E-04	--
INDENO(1,2,3-CD)PYRENE	2.84E-03	7.78E-05	2.67E-05	NA	7.30E-01	--	1.95E-05
2-METHYLNAPHTHALENE	6.70E-03	1.84E-04	6.29E-05	2.00E-02	NA	9.18E-03	--
NAPHTHALENE	9.00E-04	2.47E-05	8.45E-06	2.00E-02	NA	1.23E-03	--
PHENANTHRENE	5.28E-03	1.45E-04	4.96E-05	2.00E-02	NA	7.23E-03	--
PYRENE	7.34E-03	2.01E-04	6.89E-05	3.00E-02	NA	6.70E-03	--
Pesticides/PCBs							
DIELDRIN	4.00E-04	1.10E-05	3.76E-06	5.00E-05	1.60E+01	2.19E-01	6.01E-05
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	1.40E-02	3.84E-04	1.32E-04	2.00E-02	1.40E-02	1.92E-02	1.84E-06
BUTYLBENZYLPHTHALATE	5.00E-04	1.37E-05	4.70E-06	2.00E-01	NA	6.85E-05	--
DI(2-ETHYLHEXYL)ADIPATE	1.00E-04	2.74E-06	9.39E-07	6.00E-01	1.20E-03	4.57E-06	1.13E-09
DIBENZOFURAN	9.00E-04	2.47E-05	8.45E-06	4.00E-03	NA	6.16E-03	--
DIBUTYLPHTHALATE	4.00E-03	1.10E-04	3.76E-05	1.00E-01	NA	1.10E-03	--
DIETHYLPHTHALATE	3.00E-03	8.22E-05	2.82E-05	8.00E-01	NA	1.03E-04	--
DIMETHYLPHTHALATE	1.00E-04	2.74E-06	9.39E-07	1.00E+01	NA	2.74E-07	--
Volatiles							
ACETONE	5.05E-03	1.38E-04	4.74E-05	1.00E-01	NA	1.38E-03	--
BROMOFORM	3.00E-03	8.22E-05	2.82E-05	2.00E-02	7.90E-03	4.11E-03	2.23E-07
CHLOROETHANE	6.00E-04	1.64E-05	5.64E-06	4.00E-01	2.90E-03	4.11E-05	1.63E-08
CHLOROFORM	2.30E-02	6.30E-04	2.16E-04	1.00E-02	6.10E-03	6.30E-02	1.32E-06
CHLOROMETHANE	2.42E-03	6.62E-05	2.27E-05	NA	1.30E-02	--	2.95E-07
DIBROMOCHLOROMETHANE	5.00E-04	1.37E-05	4.70E-06	2.00E-02	8.40E-02	6.85E-04	3.95E-07
M&P XYLENES	3.00E-04	8.22E-06	2.82E-06	2.00E+00	NA	4.11E-06	--
METHYL-T-BUTYL ETHER	1.03E-03	2.81E-05	9.65E-06	NA	4.00E-03	--	3.86E-08
METHYLENE CHLORIDE	2.00E-04	5.48E-06	1.88E-06	6.00E-02	7.50E-03	9.13E-05	1.41E-08
N-BUTYLBENZENE	1.00E-04	2.74E-06	9.39E-07	4.00E-02	NA	6.85E-05	--
P-ISOPROPYLTOLUENE	2.00E-04	5.48E-06	1.88E-06	NA	NA	--	--
TERT-BUTYLALCOHOL	5.10E-03	1.40E-04	4.79E-05	NA	NA	--	--
XYLENES	3.00E-04	8.22E-06	2.82E-06	2.00E+00	NA	4.11E-06	--
Cumulative Risk						1.35E+00	0.00096564

TABLE N-2 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO EXPOSURE TO DERMAL CONTACT WITH GROUNDWATER -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: **Groundwater**

*** RME- Dermal Contact with Groundwater**

Surface Area Available for Contact = SA	18,000	cm2
Event Time = ET	0.58	hr/day
Permeability Constant = PC	chemical-specific	cm/hr
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	24	yr
Body Weight = BW	70	kg
Averaging Time (Noncancer) = AT	8,760	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	0.001	L/cm3

Intake (mg/kg-day) = Conc * SA * PC * ET * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC (mg/L)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Inorganics							
ALUMINUM	7.97E-01	1.14E-04	3.91E-05	1.00E+00	NA	1.14E-04	--
ANTIMONY	1.34E-03	1.92E-07	6.57E-08	6.00E-05	NA	3.19E-03	--
BARIUM	1.48E-01	2.12E-05	7.27E-06	4.90E-03	NA	4.33E-03	--
CADMIUM	2.11E-04	3.32E-08	1.14E-08	1.25E-05	NA	2.66E-03	--
CHROMIUM	5.10E-02	7.29E-06	2.50E-06	7.50E-05	NA	9.72E-02	--
COBALT	3.00E-03	4.29E-07	1.47E-07	6.00E-02	NA	7.15E-06	--
COPPER	4.72E-03	6.75E-07	2.31E-07	3.70E-02	NA	1.82E-05	--
MANGANESE	6.05E-02	8.65E-06	2.97E-06	9.60E-04	NA	9.01E-03	--
NICKEL	1.91E-01	7.38E-06	2.53E-06	8.00E-04	NA	9.22E-03	--
SELENIUM	1.98E-03	2.83E-07	9.71E-08	5.00E-03	NA	5.66E-05	--
VANADIUM	9.00E-04	1.29E-07	4.41E-08	1.82E-04	NA	7.07E-04	--
ZINC	1.31E-02	1.87E-06	6.42E-07	3.00E-01	NA	6.24E-06	--
PAHs							
ACENAPHTHENE	8.00E-04	2.86E-05	9.81E-06	NA	NA	--	--
ANTHRACENE	1.60E-03	5.03E-05	1.73E-05	NA	NA	--	--
BENZ(A)ANTHRACENE	2.84E-03	2.11E-04	7.24E-05	NA	NA	--	--
BENZO[A]PYRENE	1.00E-02	1.10E-03	3.78E-04	NA	NA	--	--
BENZO(B)FLOURANTHENE	5.56E-03	6.20E-04	2.13E-04	NA	NA	--	--
BENZO(G,H,I)PERYLENE	2.94E-03	7.57E-04	2.59E-04	NA	NA	--	--
BENZO(K)FLOURANTHENE	1.72E-03	1.48E-04	5.06E-05	NA	NA	--	--
CHRYSENE	3.95E-03	2.94E-04	1.01E-04	NA	NA	--	--
DIBENZ[A, H]ANTHRACENE	2.00E-03	4.86E-04	1.67E-04	NA	NA	--	--
FLUORANTHENE	9.56E-03	3.28E-04	1.13E-04	NA	NA	--	--
FLUORENE	9.00E-04	3.22E-05	1.10E-05	NA	NA	--	--
INDENO(1,2,3-CD)PYRENE	2.84E-03	4.87E-04	1.67E-04	NA	NA	--	--
2-METHYLNAPHTHALENE	6.70E-03	1.44E-04	4.93E-05	2.00E-02	NA	7.19E-03	--
NAPHTHALENE	9.00E-04	6.31E-06	2.16E-06	NA	NA	--	--
PHENANTHRENE	5.28E-03	1.13E-04	3.88E-05	NA	NA	--	--
PYRENE	7.34E-03	3.36E-04	1.15E-04	NA	NA	--	--
Pesticides/PCBs							
DIELDRIN	4.00E-04	7.44E-07	2.55E-07	5.00E-05	1.60E+01	1.49E-02	4.08E-06
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	1.40E-02	4.61E-05	1.58E-05	2.00E-02	1.40E-02	2.30E-03	2.21E-07
BUTYLBENZYLPHTHALATE	5.00E-04	5.08E-06	1.74E-06	2.00E-01	NA	2.54E-05	--
DI(2-ETHYLHEXYL)ADIPATE	1.00E-04	5.15E-05	1.77E-05	6.00E-01	1.20E-03	8.58E-05	2.12E-08
DIBENZOFURAN	9.00E-04	1.93E-05	6.62E-06	4.00E-03	NA	4.83E-03	--
DIBUTYLPHTHALATE	4.00E-03	1.49E-05	5.10E-06	1.00E-01	NA	1.49E-04	--
DIETHYLPHTHALATE	3.00E-03	1.76E-06	6.03E-07	8.00E-01	NA	2.20E-06	--
DIMETHYLPHTHALATE	1.00E-04	2.00E-08	6.86E-09	1.00E+01	NA	2.00E-09	--
Volatiles							
ACETONE	5.05E-03	4.12E-07	1.41E-07	1.00E-01	NA	4.12E-06	--
BROMOFORM	3.00E-03	1.03E-06	3.53E-07	2.00E-02	7.90E-03	5.15E-05	2.79E-09
CHLOROETHANE	6.00E-04	5.41E-07	1.85E-07	4.00E-01	2.90E-03	1.35E-06	5.38E-10
CHLOROFORM	2.30E-02	2.34E-05	8.01E-06	1.00E-02	6.10E-03	2.34E-03	4.88E-08
CHLOROMETHANE	2.42E-03	1.18E-06	4.03E-07	NA	1.30E-02	--	5.24E-09
DIBROMOCHLOROMETHANE	5.00E-04	2.79E-07	9.56E-08	2.00E-02	8.40E-02	1.39E-05	8.03E-09
M&P XYLENES	3.00E-04	3.43E-06	1.18E-06	2.00E+00	NA	1.72E-06	--
METHYL-T-BUTYL ETHER	1.03E-03	3.82E-07	1.31E-07	NA	4.00E-03	--	5.24E-10
METHYLENE CHLORIDE	2.00E-04	1.03E-07	3.53E-08	6.00E-02	7.50E-03	1.72E-06	2.65E-10
N-BUTYLBENZENE	1.00E-04	NA	NA	4.00E-02	NA	--	--
P-ISOPROPYLTOLUENE	2.00E-04	NA	NA	NA	NA	--	--
TERT-BUTYLALCOHOL	5.10E-03	NA	NA	NA	NA	--	--
XYLENES	3.00E-04	4.08E-06	1.40E-06	2.00E+00	NA	2.04E-06	--
Cumulative Risk						1.58E-01	4.388E-06

TABLE N-3 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR ADULT RESIDENTS DUE TO INHALATION OF VOLATILES FROM GROUNDWATER -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: **Groundwater**

*** RME- Inhalation of Volatiles from Groundwater**

Air Exchange Rate = AER	1.67E-02	min-1
Body Weight = BW	70	kg
Duration in Shower Room = DSR	1	min
Ventillation Rate = VR	20	L/min
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	30	yr
Averaging Time (Non-Cancer) = AT	10,950	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * EF * ED * SD / AT

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC (mg/kg/shower)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Volatiles							
ACETONE	2.22E-05	2.13E-05	9.13E-06	1.00E-01	NA	2.13E-04	--
BROMOFORM	3.12E-05	3.00E-05	1.28E-05	NA	3.90E-03	--	5.01E-08
CHLOROETHANE	1.36E-05	1.30E-05	5.57E-06	2.90E+00	NA	4.48E-06	--
CHLOROFORM	4.04E-04	3.88E-04	1.66E-04	8.60E-05	8.05E-02	4.51E+00	1.34E-05
CHLOROMETHANE	5.96E-05	5.72E-05	2.45E-05	2.60E-02	3.50E-03	2.20E-03	8.58E-08
DIBROMOCHLOROMETHANE	5.98E-06	5.73E-06	2.46E-06	NA	NA	--	--
M&P XYLENES	5.71E-06	5.47E-06	2.35E-06	2.00E-01	NA	2.74E-05	--
METHYL-T-BUTYL ETHER	1.65E-05	1.58E-05	6.76E-06	8.57E-01	NA	1.84E-05	--
METHYLENE CHLORIDE	3.87E-06	3.71E-06	1.59E-06	8.60E-01	1.65E-03	4.31E-06	2.62E-09
N-BUTYLBENZENE	1.76E-06	1.69E-06	7.24E-07	NA	NA	--	--
P-ISOPROPYLTOLUENE	0.00E+00	0.00E+00	0.00E+00	NA	NA	--	--
TERT-BUTYLALCOHOL	0.00E+00	0.00E+00	0.00E+00	NA	NA	--	--
XYLENES	5.71E-06	5.47E-06	2.35E-06	NA	NA	--	--
Cumulative Risk						4.51E+00	1.352E-05

TABLE N-4 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURES TO GROUNDWATER INGESTION -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: **Groundwater**

*** RME- Ingestion of Groundwater**

Ingestion Rate = CR	1	L/day
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	6	yr
Body Weight = BW	15	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days

Intake (mg/kg-day) = Conc * CR * EF * ED / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC (mg/L)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Inorganics							
ALUMINUM	7.97E-01	5.09E-02	4.36E-03	1.00E+00	NA	5.09E-02	--
ANTIMONY	1.34E-03	8.57E-05	7.34E-06	4.00E-04	NA	2.14E-01	--
BARIUM	1.48E-01	9.48E-03	8.13E-04	7.00E-02	NA	1.35E-01	--
CADMIUM	2.11E-04	1.35E-05	1.16E-06	5.00E-04	NA	2.70E-02	--
CHROMIUM	5.10E-02	3.26E-03	2.79E-04	3.00E-03	NA	1.09E+00	--
COBALT	3.00E-03	1.92E-04	1.64E-05	6.00E-02	NA	3.20E-03	--
COPPER	4.72E-03	3.02E-04	2.59E-05	3.70E-02	NA	8.16E-03	--
MANGANESE	6.05E-02	3.87E-03	3.32E-04	2.40E-02	NA	1.61E-01	--
NICKEL	1.91E-01	1.22E-02	1.05E-03	2.00E-02	NA	6.11E-01	--
SELENIUM	1.98E-03	1.27E-04	1.08E-05	5.00E-03	NA	2.53E-02	--
VANADIUM	9.00E-04	5.75E-05	4.93E-06	7.00E-03	NA	8.22E-03	--
ZINC	1.31E-02	8.37E-04	7.18E-05	3.00E-01	NA	2.79E-03	--
PAHs							
ACENAPHTHENE	8.00E-04	5.11E-05	4.38E-06	6.00E-02	NA	8.52E-04	--
ANTHRACENE	1.60E-03	1.02E-04	8.77E-06	3.00E-01	NA	3.41E-04	--
BENZ(A)ANTHRACENE	2.84E-03	1.82E-04	1.56E-05	NA	7.30E-01	--	1.14E-05
BENZO[A]PYRENE	1.00E-02	6.39E-04	5.48E-05	NA	7.30E+00	--	4.00E-04
BENZO(B)FLOURANTHENE	5.56E-03	3.55E-04	3.05E-05	NA	7.30E-01	--	2.22E-05
BENZO(G,H,I)PERYLENE	2.94E-03	1.88E-04	1.61E-05	3.00E-02	NA	6.26E-03	--
BENZO(K)FLOURANTHENE	1.72E-03	1.10E-04	9.42E-06	NA	7.30E-02	--	6.88E-07
CHRYSENE	3.95E-03	2.53E-04	2.16E-05	NA	7.30E-03	--	1.58E-07
DIBENZ[A, H]ANTHRACENE	2.00E-03	1.28E-04	1.10E-05	NA	7.30E+00	--	8.00E-05
FLUORANTHENE	9.56E-03	6.11E-04	5.24E-05	4.00E-02	NA	1.53E-02	--
FLUORENE	9.00E-04	5.75E-05	4.93E-06	4.00E-02	NA	1.44E-03	--
INDENO(1,2,3-CD)PYRENE	2.84E-03	1.82E-04	1.56E-05	NA	7.30E-01	--	1.14E-05
2-METHYLNAPHTHALENE	6.70E-03	4.28E-04	3.67E-05	2.00E-02	NA	2.14E-02	--
NAPHTHALENE	9.00E-04	5.75E-05	4.93E-06	2.00E-02	NA	2.88E-03	--
PHENANTHRENE	5.28E-03	3.38E-04	2.89E-05	2.00E-02	NA	1.69E-02	--
PYRENE	7.34E-03	4.69E-04	4.02E-05	3.00E-02	NA	1.56E-02	--
Pesticides/PCBs							
DIELDRIN	4.00E-04	2.56E-05	2.19E-06	5.00E-05	1.60E+01	5.11E-01	3.51E-05
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	1.40E-02	8.95E-04	7.67E-05	2.00E-02	1.40E-02	4.47E-02	1.07E-06
BUTYLBENZYLPHTHALATE	5.00E-04	3.20E-05	2.74E-06	2.00E-01	NA	1.60E-04	--
DI(2-ETHYLHEXYL)ADIPATE	1.00E-04	6.39E-06	5.48E-07	6.00E-01	1.20E-03	1.07E-05	6.58E-10
DIBENZOFURAN	9.00E-04	5.75E-05	4.93E-06	4.00E-03	NA	1.44E-02	--
DIBUTYLPHTHALATE	4.00E-03	2.56E-04	2.19E-05	1.00E-01	NA	2.56E-03	--
DIETHYLPHTHALATE	3.00E-03	1.92E-04	1.64E-05	8.00E-01	NA	2.40E-04	--
DIMETHYLPHTHALATE	1.00E-04	6.39E-06	5.48E-07	1.00E+01	NA	6.39E-07	--
Volatiles							
ACETONE	5.05E-03	3.23E-04	2.77E-05	1.00E-01	NA	3.23E-03	--
BROMOFORM	3.00E-03	1.92E-04	1.64E-05	2.00E-02	7.90E-03	9.59E-03	1.30E-07
CHLOROETHANE	6.00E-04	3.84E-05	3.29E-06	4.00E-01	2.90E-03	9.59E-05	9.53E-09
CHLOROFORM	2.30E-02	1.47E-03	1.26E-04	1.00E-02	6.10E-03	1.47E-01	7.69E-07
CHLOROMETHANE	2.42E-03	1.55E-04	1.32E-05	NA	1.30E-02	--	1.72E-07
DIBROMOCHLOROMETHANE	5.00E-04	3.20E-05	2.74E-06	2.00E-02	8.40E-02	1.60E-03	2.30E-07
M&P XYLENES	3.00E-04	1.92E-05	1.64E-06	2.00E+00	NA	9.59E-06	--
METHYL-T-BUTYL ETHER	1.03E-03	6.57E-05	5.63E-06	NA	4.00E-03	--	2.25E-08
METHYLENE CHLORIDE	2.00E-04	1.28E-05	1.10E-06	6.00E-02	7.50E-03	2.13E-04	8.22E-09
N-BUTYLBENZENE	1.00E-04	6.39E-06	5.48E-07	4.00E-02	NA	1.60E-04	--
P-ISOPROPYLTOLUENE	2.00E-04	1.28E-05	1.10E-06	NA	NA	--	--
TERT-BUTYLALCOHOL	5.10E-03	3.26E-04	2.79E-05	NA	NA	--	--
XYLENES	3.00E-04	1.92E-05	1.64E-06	2.00E+00	NA	9.59E-06	--
Cumulative Risk						3.15E+00	0.00056329

TABLE N-5 FORT TOTTEN HUMAN HEALTH RISK ASSESSMENT CALCULATIONS, ESTIMATES OF CANCER AND NONCANCER RISKS FOR CHILD RESIDENTS DUE TO EXPOSURE TO DERMAL CONTACT WITH GROUNDWATER -- REASONABLE MAXIMUM SCENARIO (RME)

Site Number: **Groundwater**

*** RME- Dermal Contact with Groundwater**

Surface Area Available for Contact = SA	6,600	cm2
Event Time = ET	1	hr/day
Permeability Constant = PC	chemical-specific	cm/hr
Exposure Frequency = EF	350	day/yr
Exposure Duration = ED	6	yr
Body Weight = BW	15	kg
Averaging Time (Noncancer) = AT	2,190	days
Averaging Time (Cancer) = AT	25,550	days
Conversion Factor = CF	0.001	L/cm3

Intake (mg/kg-day) = Conc * SA * PC * ET * EF * ED * CF / (BW * AT)

NCADI = Daily intake - Noncarcinogens
CADI = Daily Intake - Carcinogens
HQ = Hazard Quotient - Noncarcinogens = NCADI / RfD
Risk = Cancer Risk = CADI * SF

Chemical of Concern	EPC (mg/L)	NCADI (mg/kg-day)	CADI (mg/kg-day)	Chronic RfD (mg/kg-day)	SF per (mg/kg-day)	HQ	Risk
Inorganics							
ALUMINUM	7.97E-01	3.36E-04	2.88E-05	1.00E+00	NA	3.36E-04	--
ANTIMONY	1.34E-03	5.65E-07	4.85E-08	6.00E-05	NA	9.42E-03	--
BARIUM	1.48E-01	6.26E-05	5.36E-06	4.90E-03	NA	1.28E-02	--
CADMIUM	2.11E-04	9.79E-08	8.39E-09	1.25E-05	NA	7.83E-03	--
CHROMIUM	5.10E-02	2.15E-05	1.84E-06	7.50E-05	NA	2.87E-01	--
COBALT	3.00E-03	1.27E-06	1.08E-07	6.00E-02	NA	2.11E-05	--
COPPER	4.72E-03	1.99E-06	1.71E-07	3.70E-02	NA	5.38E-05	--
MANGANESE	6.05E-02	2.55E-05	2.19E-06	9.60E-04	NA	2.66E-02	--
NICKEL	1.91E-01	2.18E-05	1.87E-06	8.00E-04	NA	2.72E-02	--
SELENIUM	1.98E-03	8.35E-07	7.16E-08	5.00E-03	NA	1.67E-04	--
VANADIUM	9.00E-04	3.80E-07	3.25E-08	1.82E-04	NA	2.09E-03	--
ZINC	1.31E-02	5.53E-06	4.74E-07	3.00E-01	NA	1.84E-05	--
PAHs							
ACENAPHTHENE	8.00E-04	8.44E-05	7.23E-06	NA	NA	--	--
ANTHRACENE	1.60E-03	1.49E-04	1.27E-05	NA	NA	--	--
BENZ(A)ANTHRACENE	2.84E-03	6.23E-04	5.34E-05	NA	NA	--	--
BENZO[A]PYRENE	1.00E-02	3.25E-03	2.78E-04	NA	NA	--	--
BENZO(B)FLOURANTHENE	5.56E-03	1.83E-03	1.57E-04	NA	NA	--	--
BENZO(G,H,I)PERYLENE	2.94E-03	2.23E-03	1.91E-04	NA	NA	--	--
BENZO(K)FLOURANTHENE	1.72E-03	4.35E-04	3.73E-05	NA	NA	--	--
CHRYSENE	3.95E-03	8.67E-04	7.43E-05	NA	NA	--	--
DIBENZ[A, H]ANTHRACENE	2.00E-03	1.43E-03	1.23E-04	NA	NA	--	--
FLUORANTHENE	9.56E-03	9.68E-04	8.30E-05	NA	NA	--	--
FLUORENE	9.00E-04	9.49E-05	8.14E-06	NA	NA	--	--
INDENO(1,2,3-CD)PYRENE	2.84E-03	1.44E-03	1.23E-04	NA	NA	--	--
2-METHYLNAPHTHALENE	6.70E-03	4.24E-04	3.63E-05	2.00E-02	NA	2.12E-02	--
NAPHTHALENE	9.00E-04	1.86E-05	1.59E-06	NA	NA	--	--
PHENANTHRENE	5.28E-03	3.34E-04	2.86E-05	NA	NA	--	--
PYRENE	7.34E-03	9.91E-04	8.49E-05	NA	NA	--	--
Pesticides/PCBs							
DIELDRIN	4.00E-04	2.19E-06	1.88E-07	5.00E-05	1.60E+01	4.39E-02	3.01E-06
Semivolatiles							
BIS(2-ETHYLHEXYL)PHTHALATE	1.40E-02	1.36E-04	1.16E-05	2.00E-02	1.40E-02	6.79E-03	1.63E-07
BUTYLBENZYLPHTHALATE	5.00E-04	1.50E-05	1.28E-06	2.00E-01	NA	7.49E-05	--
DI(2-ETHYLHEXYL)ADIPATE	1.00E-04	1.52E-04	1.30E-05	6.00E-01	1.20E-03	2.53E-04	1.56E-08
DIBENZOFURAN	9.00E-04	5.70E-05	4.88E-06	4.00E-03	NA	1.42E-02	--
DIBUTYLPHTHALATE	4.00E-03	4.39E-05	3.76E-06	1.00E-01	NA	4.39E-04	--
DIETHYLPHTHALATE	3.00E-03	5.19E-06	4.45E-07	8.00E-01	NA	6.49E-06	--
DIMETHYLPHTHALATE	1.00E-04	5.91E-08	5.06E-09	1.00E+01	NA	5.91E-09	--
Volatiles							
ACETONE	5.05E-03	1.21E-06	1.04E-07	1.00E-01	NA	1.21E-05	--
BROMOFORM	3.00E-03	3.04E-06	2.60E-07	2.00E-02	7.90E-03	1.52E-04	2.06E-09
CHLOROETHANE	6.00E-04	1.59E-06	1.37E-07	4.00E-01	2.90E-03	3.99E-06	3.96E-10
CHLOROFORM	2.30E-02	6.89E-05	5.91E-06	1.00E-02	6.10E-03	6.89E-03	3.60E-08
CHLOROMETHANE	2.42E-03	3.47E-06	2.97E-07	NA	1.30E-02	--	3.86E-09
DIBROMOCHLOROMETHANE	5.00E-04	8.23E-07	7.05E-08	2.00E-02	8.40E-02	4.11E-05	5.92E-09
M&P XYLENES	3.00E-04	1.01E-05	8.68E-07	2.00E+00	NA	5.06E-06	--
METHYL-T-BUTYL ETHER	1.03E-03	1.13E-06	9.66E-08	NA	4.00E-03	--	3.86E-10
METHYLENE CHLORIDE	2.00E-04	3.04E-07	2.60E-08	6.00E-02	7.50E-03	5.06E-06	1.95E-10
N-BUTYLBENZENE	1.00E-04	NA	NA	4.00E-02	NA	--	--
P-ISOPROPYLTOLUENE	2.00E-04	NA	NA	NA	NA	--	--
TERT-BUTYLALCOHOL	5.10E-03	NA	NA	NA	NA	--	--
XYLENES	3.00E-04	1.20E-05	1.03E-06	2.00E+00	NA	6.01E-06	--
Cumulative Risk						4.67E-01	3.2364E-06

Appendix O

Lead Risk Spreadsheets

Table O-1 IEUBK Model Output for Residential Children, Fill Area
LEAD MODEL Version 0.99d

AIR CONCENTRATION: 0.100 ug Pb/m3 DEFAULT
Indoor AIR Pb Conc: 30.0 percent of outdoor.
Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 4.00 ug Pb/L DEFAULT
WATER Consumption: DEFAULT

SOIL & DUST:
Soil: constant conc.
Dust: constant conc.

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	331.0	200.0
1-2	331.0	200.0
2-3	331.0	200.0
3-4	331.0	200.0
4-5	331.0	200.0
5-6	331.0	200.0
6-7	331.0	200.0

Additional Dust Sources: None DEFAULT

PAINT Intake: 0.00 ug Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model
Maternal Blood Conc: 2.50 ug Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
0.5-1:	4.8	8.85	5.97
1-2:	5.3	12.87	9.36
2-3:	5.0	13.42	9.49
3-4:	4.7	13.52	9.62
4-5:	4.0	11.23	7.31
5-6:	3.4	10.84	6.64

6-7:	3.1	10.85	6.29	

YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	2.50	0.36	0.00	0.02
1-2:	2.58	0.89	0.00	0.03
2-3:	2.94	0.94	0.00	0.06
3-4:	2.86	0.97	0.00	0.07
4-5:	2.83	1.03	0.00	0.07
5-6:	3.01	1.10	0.00	0.09
6-7:	3.34	1.12	0.00	0.09
6-7:	3.31	1.12	0.00	0.09

Lead Exposure Model

EQUATION:

$$PbB_{final} = PbB_{initial} + \frac{C_s \times BKSF \times IR \times AF \times EF}{AT}$$

where:	PbB_{final}	=		Final lead concentration in plasma (µg/dL)
	$PbB_{initial}$	=	2.2	Initial lead concentration in plasma (µg/dL)
	$C_{s\ tot}$	=	331	Concentration of lead in total soil (µg/g)
	$C_{s\ surf}$	=	331	Concentration of lead in surface soil (µg/g)
	BKSF	=	0.40	Biokinetic Slope Factor (µg.day/µg.dL)
	IR	=	*	Ingestion rate (g/day)
	AF	=	0.12	Absorption fraction (unitless)
	EF	=	*	Exposure frequency (days/yr)
	AT	=	365	Averaging time (days/yr)

* Scenario/Receptor dependent

SCENARIO	RECEPTOR: RME			RECEPTOR: AE		
Construction/ Excavation Workers	PbB_{final} =	5.3	µg/dL	PbB_{final} =	2.6	µg/dL
Trespassers	PbB_{final} =	2.5	µg/dL	PbB_{final} =	2.3	µg/dL
Maintenance Workers	PbB_{final} =	2.5	µg/dL	PbB_{final} =	2.3	µg/dL
Commercial Workers	PbB_{final} =	2.7	µg/dL	PbB_{final} =	2.4	µg/dL

Table O-3 IEUBK Model Output for Resident Children, Other Area
LEAD MODEL Version 0.99d

AIR CONCENTRATION: 0.100 ug Pb/m3 DEFAULT
Indoor AIR Pb Conc: 30.0 percent of outdoor.
Other AIR Parameters:

Age	Time Outdoors (hr)	Vent. Rate (m3/day)	Lung Abs. (%)
0-1	1.0	2.0	32.0
1-2	2.0	3.0	32.0
2-3	3.0	5.0	32.0
3-4	4.0	5.0	32.0
4-5	4.0	5.0	32.0
5-6	4.0	7.0	32.0
6-7	4.0	7.0	32.0

DIET: DEFAULT

DRINKING WATER Conc: 4.00 ug Pb/L DEFAULT
WATER Consumption: DEFAULT

SOIL & DUST:
Soil: constant conc.
Dust: constant conc.

Age	Soil (ug Pb/g)	House Dust (ug Pb/g)
0-1	195.0	195.0
1-2	195.0	195.0
2-3	195.0	195.0
3-4	195.0	195.0
4-5	195.0	195.0
5-6	195.0	195.0
6-7	195.0	195.0

Additional Dust Sources: None DEFAULT

PAINT Intake: 0.00 ug Pb/day DEFAULT

MATERNAL CONTRIBUTION: Infant Model
Maternal Blood Conc: 2.50 ug Pb/dL

CALCULATED BLOOD Pb and Pb UPTAKES:

YEAR	Blood Level (ug/dL)	Total Uptake (ug/day)	Soil+Dust Uptake (ug/day)
0.5-1:	4.1	7.49	4.57
1-2:	4.5	10.76	7.18
2-3:	4.2	11.26	7.26
3-4:	4.0	11.31	7.35
4-5:	3.4	9.52	5.55
5-6:	2.9	9.27	5.04

6-7:	2.7	9.36	4.77	

YEAR	Diet Uptake (ug/day)	Water Uptake (ug/day)	Paint Uptake (ug/day)	Air Uptake (ug/day)
0.5-1:	2.54	0.37	0.00	0.02
1-2:	2.63	0.91	0.00	0.03
2-3:	2.98	0.96	0.00	0.06
3-4:	2.90	0.99	0.00	0.07
4-5:	2.85	1.04	0.00	0.07
5-6:	3.03	1.11	0.00	0.09
6-7:	3.36	1.13	0.00	0.09

Lead Exposure Model

EQUATION:

$$PbB_{final} = PbB_{initial} + \frac{C_s \times BKSF \times IR \times AF \times EF}{AT}$$

where:	PbB_{final}	=		Final lead concentration in plasma (µg/dL)
	$PbB_{initial}$	=	2.2	Initial lead concentration in plasma (µg/dL)
	$C_{s\ tot}$	=	195	Concentration of lead in total soil (µg/g)
	$C_{s\ surf}$	=	195	Concentration of lead in surface soil (µg/g)
	BKSF	=	0.40	Biokinetic Slope Factor (µg.day/µg.dL)
	IR	=	*	Ingestion rate (g/day)
	AF	=	0.12	Absorption fraction (unitless)
	EF	=	*	Exposure frequency (days/yr)
	AT	=	365	Averaging time (days/yr)

* Scenario/Receptor dependent

SCENARIO	RECEPTOR RME			RECEPTOR AE		
Construction/ Excavation Workers	PbB_{final} =	4.0	µg/dL	PbB_{final} =	2.5	µg/dL
Trespassers	PbB_{final} =	2.4	µg/dL	PbB_{final} =	2.3	µg/dL
Maintenance Workers	PbB_{final} =	2.4	µg/dL	PbB_{final} =	2.3	µg/dL
Commercial Workers	PbB_{final} =	2.5	µg/dL	PbB_{final} =	2.3	µg/dL

Appendix P

Showering Model Spreadsheets

TABLE P-1 SHOWERING MODEL INPUT PARAMETERS

Parameter Code	Parameter Definition	Units	Adult Resident Value
VR	Ventillation Rate	L/min	20
BW	Body Weight	kg	70
EF	Exposure Frequency	event/yr	350
ED	Exposure Duration	yr	30
AT-NC	Averaging time - Noncancer	days	10,950
AT-C	Averaging Time - Cancer	days	25,550
	Parameters in the Shower Model		**Value**
	Liquid Phase t.c. CO2	cm/h	20
	Gas Phase t.c. H2O	cm/h	3,000
	Water Viscosity at 20C	cp	1.002
	Water Viscosity at 45C	cp	0.596
	Shower Temp	K	318
	Droplet Diameter	mm	1
	Drop Time	s	2
	Shower Flow Rate	L/min	20
	Shower Stall Volume	m^3	6
	Shower Duration	min	12
	Air Exchange Rate	min^{-1}	0.0166667
	Body Weight	kg	70
	RT	atm-m^3/mol	0.024
	Duration in Shower Room	min	20
	Ventillation Rate	L/min	14

TABLE P-2 CHEMICAL PARAMETERS FOR SHOWERING MODEL

Chemical	Henry's Law	Molecular Weight	Gas Phase Transfer Coefficient	Liquid Phase Transfer Coefficient	Overall Mass Transfer Coefficient	Adjusted Overall Mass Transfer Coefficient
	atm-m3/mol-K	g/mol	cm/hr	cm/hr	cm/hr	cm/hr
ACETONE	3.90E-05	5.80E+01	1.67E+03	1.74E+01	2.35E+00	3.17E+00
BROMOFORM	6.50E-04	2.53E+02	8.01E+02	8.34E+00	6.03E+00	8.14E+00
CHLOROETHANE	1.10E-02	6.50E+01	1.58E+03	1.65E+01	1.61E+01	2.17E+01
CHLOROFORM	3.70E-03	1.19E+02	1.17E+03	1.22E+01	1.14E+01	1.54E+01
CHLOROMETHANE	2.40E-02	5.10E+01	1.78E+03	1.86E+01	1.84E+01	2.48E+01
DIBROMOCHLOROMETHANE	8.50E-04	2.10E+02	8.78E+02	9.15E+00	7.07E+00	9.55E+00
M&P XYLENES	7.30E+03	1.10E+02	1.21E+03	1.26E+01	1.26E+01	1.71E+01
METHYL-T-BUTYL ETHER	5.90E-04	8.50E+01	1.38E+03	1.44E+01	1.01E+01	1.36E+01
METHYLENE CHLORIDE	2.20E-03	8.50E+01	1.38E+03	1.44E+01	1.29E+01	1.75E+01
N-BUTYLBENZENE	1.30E-02	1.30E+02	1.12E+03	1.16E+01	1.14E+01	1.54E+01
P-ISOPROPYLTOLUENE	NA	NA	#VALUE!	#VALUE!	#VALUE!	#VALUE!
TERT-BUTYLALCOHOL	NA	NA	#VALUE!	#VALUE!	#VALUE!	#VALUE!
XYLENES	7.30E+03	1.10E+02	1.21E+03	1.26E+01	1.26E+01	1.71E+01

Henry's Law and Molecular Weight information from www.epa.gov/region09/waste/sfund/prg/s5_02.htm

TABLE P-3 SHOWERING CALCULATIONS FOR VOLATILE ORGANICS

Chemical	RME Groundwater Concentration ug/L	Concentration Leaving Shower Droplet ug/L	Indoor VOC Generation Rate ug/m3-min	Inhalation Exposure Per Shower mg/kg/shower
ACETONE	5.05E+00	5.07E-01	8.45E-01	2.22E-05
BROMOFORM	3.00E+00	7.13E-01	1.19E+00	3.12E-05
CHLOROETHANE	6.00E-01	3.09E-01	5.15E-01	1.36E-05
CHLOROFORM	2.30E+01	9.23E+00	1.54E+01	4.04E-04
CHLOROMETHANE	2.42E+00	1.36E+00	2.27E+00	5.96E-05
DIBROMOCHLOROMETHANE	5.00E-01	1.36E-01	2.27E-01	5.98E-06
M&P XYLENES	3.00E-01	1.30E-01	2.17E-01	5.71E-06
METHYL-T-BUTYL ETHER	1.03E+00	3.76E-01	6.26E-01	1.65E-05
METHYLENE CHLORIDE	2.00E-01	8.82E-02	1.47E-01	3.87E-06
N-BUTYLBENZENE	1.00E-01	4.02E-02	6.70E-02	1.76E-06
P-ISOPROPYLTOLUENE	2.00E-01	#VALUE!	#VALUE!	#VALUE!
TERT-BUTYLALCOHOL	5.10E+00	#VALUE!	#VALUE!	#VALUE!
XYLENES	3.00E-01	1.30E-01	2.17E-01	5.71E-06