U.S. Army Corps of Engineers
Louisville District

Defense Environmental Restoration Program
For
Formerly Used Defense Sites

Limited Site Investigation

Final Report

for
the former

Plum Brook Ordnance Works

Waste Water Treatment Plants No. 1 and 3

Sandusky, Ohio
Project Number G05OH001807

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List of Acronyms

ASTM	American Standards for Testing Materials
BTEX	benzene, toluene, ethylbenzene, xylene
bgs	below ground surface
CERCLA	Comprehensive Environmental Response, Compensation, Liability Act of 1980
CERCLIS	Comprehensive Environmental Response, Compensation, and Liability Information System
CLP	Contract Laboratory Program
COC	Chain of Custody
CRL	Central Regional Laboratory
D&D	Decontamination & Decommissioning
DERP	Defense Environmental Restoration Program
DNT	dinitrotoluene
DOD	U.S. Department of Defense
DQO	Data Quality Objective
EPA	U.S. Environmental Protection Agency
ERIIS	Environmental Risk Information & Imaging Services
ERNS	Emergency Response Notification System
FSP	Field Sampling Plan
FUDS	Formerly Used Defense Sites
gpm	gallons per minute
GSA	General Services Administration
HNO_3	acetic acid
IDW	Investigation-Derived Waste
INPR	Inventory Project Request
IT	IT Corporation
LeRC	Lewis Research Center
MDL	Method Detection Limit
MRL	Method Reporting Limit
MS/MSD	Matrix Spike/Matrix Spike Duplicate
MSDS	Material Safety Data Sheet
msl	mean sea level
NACA	National Advisory Committee for Aeronautics
NASA	National Aeronautical and Space Administration
NIST	National Institute of Standard Technology
NPL	National Priorities Lists
OEPA	Ohio Environmental Protection Agency
PA	Preliminary Assessment
PAWL	Pentolite Area Waste Lagoons
PBOW	Plum Brook Ordnance Works
PBRF	Plum Brook Reactor Facility
PBS	Plum Brook Station

PE	Pentaerythritol
PETN	Pentaerythritol tetranitrate
PID	Photoionization Detector
ppb	parts per billion
PRGs	Preliminary Remediation Goals
QA	Quality Assurance
QAPP	Quality Assurance Project Plan
QC	Quality Control
SAIC	Science Applications International Corporation
SAP	Sampling and Analysis Plan
SARA	Superfund Amendments and Reauthorization Act
SAS	Spectial Analytical Services
SI	Sight Investigation
SOP	Standard Operating Procedure
SVOC	Semi-Volatile Organic Compound
SW846	Test Methods for Evaluating Solid Waste 1986
TAL	Target Analyte List
TCL	Target Compound List
TOC	Total Organic Carbon
TNT	trinitrotoluene
USACE	U.S. Army Corp of Engineers
USCS	Unified Soil Classification System
USEPA	U.S. Environmental Protection Agency
VOA	Volatile Organic Analysis
VOC	Volatile Organic Compound
WWTP	Waste Water Treatment Plant

1.0 Introduction

Located south of Sandusky, Ohio, the former Plum Brook Ordnance Works (PBOW) installation was operated from 1941 to 1945 by the Army for the manufacturing of trinitrotoluene (TNT), dinitrotoluene (DNT) and pentolite. Contamination has been detected at several sites within the facility that is potentially related to past Army activities. These sites are being addressed by the DOD under the Defense Environmental Restoration Program (DERP), Formerly Used Defense Sites (FUDS).

A limited Site Investigation (SI) of the former Wastewater Treatment Plants Nos. 1 and 3, (WWTP1) and (WWTP3) respectively, was conducted and is reported herein. The potential for contamination of the former WWTP sites was identified in an Inventory Project Request (INPR) (Huntington District U.S. Army Corps of Engineers (USACE), 1998). The purpose of this limited SI is to evaluate the potential contamination of the former WWTPs resulting from past Department of Defense (DOD) activities.. Historical information was reviewed to identify the environmental media and locations most likely affected. The References section of this report identifies the guidance documents and information used to evaluate the site history, the environmental media, and the site-specific locations. Field sampling and chemical laboratory analyses were performed to evaluate the environmental media at the site. Results of the laboratory analyses were then compared to risk-based, media specific screening criteria. USEPA Region 9 Preliminary Remediation Goals (PRGs) have been used for the screening criteria.

This project is one of several limited SI projects simultaneously undertaken by the U.S. Army Corps of Engineers to be executed by the Louisville District (CELRL) in cooperation with the Huntington District (CELRH).

The sampling and chemical laboratory analyses were performed in accordance with the Quality Assurance Project Plan (QAPP) prepared by the Corps of Engineers, Louisville District, dated June 1999. The Data Quality Objectives (DQOs) were defined for this site investigation to choose the sampling and analysis methods that would properly characterize the site at the SI level of work. A non-statistical sampling approach was used to locate the samples and to select the number of samples. This process was implemented because this was a limited SI. The sampling was both purposeful and biased to locations that were most likely contaminated. The detection limits presented by the analytical laboratory were appropriate for the site investigation. The Data Review and Validation Report presented herein gives a detailed examination of the usability of the analytical results. The Waste Water Treatment Plants 1 & 3 were recommended for further action based on the information collected from the site investigation.

2.0 Site Description

2.1 WWTP Site Locations

The WWTP sites are located within the Plum Brook Station (PBS) facility in Erie County, Ohio (Figure 1). The PBS facility, formerly Plum Brook Ordnance Works (PBOW) occupies 6,400 acres of land belonging to Perkins, Huron, Milan and Oxford Townships, and is located approximately four miles south of Sandusky, Ohio. PBS is operated by the National Aeronautical and Space Administration (NASA). The WWTPs, for this SI, include two of the three plants of the PBOW (Wastewater Treatment Plants Nos. 1 and 3 hereafter referred to as WWTP1 and WWTP3, respectively) which were used during the operation of that facility to reduce the volume of wastewater flowing to the waste water ponds. The plants covered approximately 2 acres each and are located on the northern portion of the PBOW. (Figure 3).

2.2.1 WWTP1

The WWTP1 site is located northeast and across Maintenance Road from Power Station #1. The site is bound by Pentolite Road approximately 1800 feet north, by Maintenance Road approximately 200 feet south, by Taylor Road approximately 600 feet east, and by an unnamed ditch approximately 800 feet west. The WWTP1 site is relatively flat and grass covered. Reservoir #1 is located approximately 800 feet northeast and the waste water basin (Pentolite Road Red Water Pond) is located approximately 1500 feet northwest of the subject site. Photographs of the WWTP1 site are provided in Appendix A.

2.2.2 WWTP3

The WWTP3 site is located north of Power Station #3 and is the current location of the NASA K Site control building. The site is bound by Maintenance Road approximately 200 feet north, by Ash Pit #2 approximately 600 feet south, by Ransom Road approximately 500 feet east, and by Campbell Street approximately 3200 feet west. The WWTP3 site is relatively flat and grass covered. The former Power House #3 is located approximately 600 feet southeast and Reservoir #2 is located approximately 1500 feet southwest of the subject site. Photographs of the WWTP3 site are provided in Appendix A.

2.2 Climate

Erie County is characterized by continental climate. Winters are cold and cloudy and summers are warm and humid. The county's first freezing temperature is typically in October, and its last freezing temperature is normally in April. Average annual precipitation for Sandusky from 1961 to 1990 was 34.05 inches. Wind is from the southwest 55 percent of the time (Dames & Moore 1997).

2.3 Topography

The WWTP1 site is essentially flat with a slight sloping, topographic gradient, of less than 5 feet toward the north and west. The local relief is low, moderately sloping to nearly level at an average elevation of approximately 638 feet above mean sea level (msl). The WWTP3 site is essentially flat with a slight sloping, topographic gradient, of less than 5 feet to the west and depression of less than 5 feet to the north. The local relief is low, moderately sloping to nearly level at an elevation of approximately 635 feet above msl.

At the WWTP1 site the foundation slabs of the demolished structures were left in-place and were still at ground level at the time of our investigation. At WWTP3, the former Neutral Waste Storage Tank is currently being utilized as the NASA K site control building. There are indications that the surface elevations of the WWTP sites have not changed significantly since 1959. This fact is confirmed by the topographic quadrangles (USGS, 1959, 1969 and 1979). A copy of these topographic quadrangles is provided in Appendix B.

2.4 Hydrology

Surface water runoff in the WWTP1 area generally flows north/northwest, draining into unnamed ditches that ultimately discharge into Plum Brook, which flows northeast, off the installation, and eventually discharges into Lake Erie. Based on published hydrologic information (U.S. Department of the Interior, 1987), the closest wetland to WWTP1 is Reservoir #1, located approximately 800 feet to the north/northeast. At the WWTP3 site, area surface water runoff flows north/northeast, draining into an unnamed ditch, flowing west, that discharges into Pipe Creek that runs north and eventually empties into Lake Erie. Based on published hydrologic information (U.S. Department of the Interior, 1987), the closest wetlands to WWTP3 are Ash Pit #3 and Reservoir #2, located approximately 500 feet south and 1500 feet southwest, respectively, of the subject site. A wetlands map of the area is included in Appendix C.

2.5 Geology

Based on the Site Wide Groundwater Study (IT Corporation, 1997-1998), three formations, all of the Devonian Age, underlie the PBOW installation. The Delaware Limestone is the lowermost formation. It is characterized as a hard, dense, finely crystalline limestone and dolomite. Dissolution of this unit has produced solution channels along bedding planes and joints, and in severe dissolution condition, has even produced caverns in some areas. The unit is typically buff colored and usually described as fossiliferous. In the vicinity of PBOW, benzene, toluene, ethyl benzene, and xylene (BTEX) and hydrogen sulfide are common in area quarries. Overlying the Delaware Limestone is the Olentangy Formation. Two members of the Olentangy Formation have been characterized at the PBOW installation, the Plumbrook Shale and the overlying

Prout Limestone. The Plum Brook Shale is interpreted to consist of approximately 35 feet of bluish-gray, soft, fossiliferous shale containing thin layers of dark, hard, fossiliferous limestone. The Prout Limestone has been interpreted to be a unit approximately 15 feet thick which outcrops occasionally in a 1,000 to 2,000 foot-wide, northeast striking band across the middle portion of the PBOW installation. It has been described as a dark-gray to blue, very hard, siliceous, fossiliferous limestone or dolomitic mudstone. The uppermost formation at the PBOW installation is the Ohio Shale. Only the Huron Shale, member of the Ohio Shale formation, is present in the PBOW installation. This unit has been described as black, thinly bedded, with pyrite and abundant carbonaceous matter with some large pyrite/carbonate concretions of up to 6 feet in diameter.

The bedrock overburden in Erie County is predominantly glacial till, outwash or lacustrine (lake) deposits. In the vicinity of PBOW installation, the glacial soil has been interpreted to be lacustrine. In many areas, the overburden also consists of highly weathered bedrock. The thickness of the overburden ranges from approximately 5 feet or less for most of PBOW to greater than 25 feet. The overburden is thickest on the northern portion of the installation.

2.5.1 WWTP1

Based on review of soil boring records from the vicinity of the WWTP1 site, overburden soils generally consist of an upper layer of silty fine sand, clayey silts, and silty clays at depths ranging from 5 to 12 feet below ground surface (bgs). This material was typically classified as clayey silts (ML) or sandy clays (CL) in accordance with the Unified Soil Classification System (USCS). This upper, silty fine sand, layer is generally underlain by silty clay soils (CL or CH (fat clays) in accordance with USCS) extending to bedrock. Bedrock was encountered in this area at depths ranging from about 12 to 25 feet bgs. Bedrock encountered consists of weathered shale underlain by limestone. Groundwater is generally encountered within the bedrock.

2.5.2 WWTP3

Based on review of soil boring records from the vicinity of the site, overburden soils generally consist of an upper layer of silty fine sands and silts or silty clays to a depth of 10 to 15 feet bgs. This material was typically classified as ML or CL in accordance with the USCS. This upper, silty fine sand layer is generally underlain by silty clay soils extending to bedrock. This silty clay material was typically classified as CL in accordance with the USCS. Limestone bedrock in the vicinity is generally at about 25 feet bgs. Groundwater is generally encountered within the bedrock.

2.6 Hydrogeology

Based on the Site Wide Groundwater Study (IT Corporation, 1997-1998), potable groundwater is encountered in the bedrock units underlying the PBOW installation.

Generally this groundwater migrates northward toward Lake Erie. Based on the hydrogeologic information given in Appendix D (Groundwater Resources of Erie County, 1986), the PBOW installation includes three distinct hydrogeologic regions. Groundwater yields from these regions range from limited in the northeast and south regions, to more than 500 gallons per minute (gpm) in the northwest region.

WWTP1 is located in a hydrogeologic region, which seldom yields groundwater at more than 3 gpm. Groundwater in the overburden soils is generally expected to be perched or trapped water. Limited quantities of groundwater are obtained from thin, discontinuous sand and gravel deposits interbedded in fine, sandy clay or from the underlying shale. Perched water sources contain widely varying quantities of water depending on recent precipitation and other site-specific factors. Based on the expected soil types, overburden groundwater quantities should be minimal. Drilling deeper than 30 feet into the shale is not recommended. Occasional gas or salt may be encountered in the eastern half of the county.

WWTP3 is located in a hydrogeologic region, where groundwater yields ranging from 5 to 25 gpm may be developed. Groundwater yields of 15 gpm, or less, are developed from wells drilled into the underlying limestone. Hydrogen sulfide may be present in varying amounts. Groundwater in the overburden soils is generally expected to be perched or trapped water. Perched water typically occurs in irregular, discontinuous granular zones within the soil overburden. Perched water sources contain widely varying quantities of water depending on recent precipitation and other site-specific factors. Based on the expected soil types, overburden groundwater quantities should be minimal.

3.0 Operational History and Waste Characteristics

3.1 Plum Brook Station (Installation Wide)

Land for the original site was acquired by Department of War in 1938 and consisted of approximately 9,010 acres of land. In the early 1940s, the U.S. Army contracted with Trojan Powder Company to manufacture 2,4,6-TNT, dinitrotoluene and pentolite at PBOW. Production began on December 16, 1941 and continued through late 1945, ceasing two weeks after V-J Day (September 2, 1945), having manufactured in excess of one billion pounds of explosives during the four-year period.

By September 1945, the entire Ordnance Inspection Department was abolished. Decontamination of TNT, acid, pentolite and DNT manufacturing lines was completed during the last quarter of 1945. PBOW was placed in standby status from 1945 to 1946. On December 17, 1945, the physical custody of the plant was transferred from Trojan to the U.S. Army Ordnance Department. The U.S. Army Corps of Engineers assumed responsibility for maintenance and custodial duties until September 1946. During this time, decontamination and decommissioning (D&D) procedures were performed on many structures associated with the manufacturing process. D&D included the removal and relocation of all explosives to burn grounds for destruction by open burning. Where possible, remaining structures and buildings were burned in place. Drain lines and steam lines were flushed and dismantled. The property was subsequently transferred to the War Assets Administration (predecessor to the Government Services Administration (GSA)), after it was certified by the U.S. Army to be decontaminated.

In 1956 the National Advisory Committee for Aeronautics (NACA) began leasing sections of PBOW from the War Assets Administration. An agreement was made in 1956 to lease 500 acres in the northern portion of PBOW to construct and operate the Plum Brook Reactor Facility (PBRF). In 1958 NACA changed its name to National Aeronautics and Space Administration (NASA). By 1963, approximately 6,400 acres of the PBOW was acquired by NASA for various aerospace research activities. An additional 2,000 acres were acquired to serve as a buffer zone between the facility and the adjacent community. Research and test activities were conducted by NASA throughout the 1960s and have continued until today.

NASA declared approximately 2,150 acres as excess in 1978. Much of the remaining excess property was reclaimed as farmland. The PBS site currently lies in an area that is primarily rural and agricultural with a low population density. The NASA Lewis Research Center occupies a majority of the former ordnance works. The Department of the Army maintains a reserve center on the westernmost portion of the facility. The remainder of the former installation is in private ownership with the vast majority being cultivated primarily with various vegetable and fruit crops. Specific crops are unknown at this time. A tract on the northern boundary is owned by the Perkins Board of Education and is utilized as a bus maintenance facility. A 1980/1983 land use map and an 1865 historic land ownership map of the PBOW vicinity is included in Appendix E.

Review of historical drawings indicated that wastewater from the plants was disposed of into open ditches. A May 21, 1963 U.S. Army Ammunition Procurement and Supply letter states that the dismantled TNT wastewater disposal plants "will be shipped to Ravenna Arsenal", indicating that these referenced plants were dismantled prior to 1963.

3.2 Waste Water Treatment Plants (Site Specific)

The wastewater treatment plants were used during PBOW installation operation to reduce the volume of wastewater flowing to the wastewater ponds. A total of three WWTP were located at PBOW (see figure 3). Each WWTP consisted of a Neutral Storage Tank, an Equalization Tank, a Condensate Storage Tank, an Evaporator Building, an Incinerator, and a Thick Liquid storage tank. The WWTP1 also included a Caustic Storage and a Raw Waste Storage Tank. These structures occupied an area of approximately 2 acres (Figures 6 and 8). The plants received wastewater from the settling tanks at TNT Areas 1 and 3, neutralized it through a chemical depuration process, and disposed of it in open ditches surrounding the area (See Section 2.4, Figures 4 and 5) or thickened it by evaporation and the resultant thick liquid was incinerated. The incinerators were located to the east of the storage tanks at WWTP #1 (See Figure 4) and to the north of the storage tanks at WWTP #3 (See Figure 5). Ash from the incinerator was disposed of in nearby ash pits associated with the WWTPs.

Inspection of the aerial photographs available for the sites show that all the structures (buildings and tanks) on both sites were in-place in 1956 and had been demolished by 1969 with the exception of the Neutral Storage Tank on WWTP3 (Figures 8 and 9). The U.S. Geological Service topographic quadrangle of 1959 indicated that only one structure remained at WWTP1 and two structures remained at WWTP3. The U.S. Geological Service topographic quadrangle, dated 1969 and photorevised 1979, indicated that all structures at WWTP1 had been demolished and that one structure (the Neutral Storage Tank) remained at WWTP3.

3.2.1 WWTP1

Review of historical drawings (Dames & Moore, 1995) indicates that the raw waste storage tank at WWTP1 received waste water from the settling basins at TNT Area A and TNT Area B. During a March 1999 field reconnaissance of the former WWTP1, bare areas and the remains of concrete foundations were observed where the buildings or storage tanks were formerly located. Morrison Knudsen took one sample in the area that did not show any significant contamination.

3.2.2 WWTP3

PBS employees reported that the control building was formerly a storage tank (the disposal plant's neutralized wastewater tank was located at this same location). Review of the historical aerial photograph, dated 1950, indicated that a bermed square-shaped

depression was present north of WWTP3 and south of Maintenance Road (Dames & Moore, 1995). The berm was not present during a field reconnaissance of this site, in March 1995, although the depression was observed (Dames & Moore, 1995). It is possible that this depression could have been used as an ash-settling basin for WWTP3 (Dames & Moore, 1995). During a March 1999 field reconnaissance of the former WWTP3, an open ditch was observed west of the control building.

Based on topographic quadrangles dated 1959 and 1969 (Appendix B), historical aerial photographs dated 1956, 1969, 1977 and 1995 (Appendix F), and a previous site reconnaissance performed by Dames & Moore in 1995, it appears that the WWTP sites have been unchanged since the decommissioning of these facilities.

Environmental Information and Imaging Services (ERIIS) performed a database search of the PBOW vicinity. The data base search included those sites within close proximity to the PBOW that are currently listed under the following database records:

- National Priorities List (NPL)
- Resource Conservation and Recovery Information System-TSDs: Subject to Corrective Action (RCRIS_CA)
- Resource Conservation and Recovery Information System- Non-Corrective Action TSD Facilities (RCRIS_TS)
- Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS)
- No Further Remedial Action Planned Sites (NFRAP)
- Resource Conservation and Recovery Information System-Large Quantity Generators (RCRIS_LG)
- Resource Conservation and Recovery Information System-Small Quantity Generators (RCRIS_SG)
- Emergency Response Notification System (ERNS)
- Ohio Master Sites List (HWS)
- Ohio Leaking Underground Storage Tank Report (LRST)
- Ohio Solid Waste Facility List (SWF)
- Ohio Underground Storage Tank Report (RST)

A description of each of these records is presented in Appendix G. Within the radii on the ERIIS figure in Appendix G, the search revealed 25 LRST sites, 18 RST sites, 3 SWF sites, 1 RCRIS_TS sites, 1 NFRAP site, 5 RCRIS_SG sites, 1 ERNS site, and 3 HWS sites. Of these sites, 6 LRST sites, 9 RST sites, 1 RCRIS_SG site, 1 RCRIS_TS site, 1 NFRAP site, and 1 HWS site are located on the PBOW installation. The remainder of the listed sites is located outside the installation boundary. Information concerning each of these listed facilities and their location is included in Appendix G. Based on the proximity of these sites and/or their status, the potential for any of these listed facilities to negatively impact either of the WWTP sites is minimal.

4.0 Soil Sampling

4.1 Sampling Activities

The rationales for the design of the sampling process was discussed in the Field Sampling Plan (FSP), paragraph 4.0. Field activities closely followed the FSP, with the exception of the location of the samples. The FSP indicated collection of the sample inside the perimeter of the structure's (buildings or tanks) footprint but, due to the fact that most of the foundations had not been excavated, it was impossible to obtain all soil samples at the planned locations. Therefore, soil sampling, when necessary, was relocated adjacent to the structure's foundation and at the discretion of the field professional.

Field screening was not used on WWTP3 because the idea behind field screening was to guide the location of the sample within the perimeter of the structures, and the samples were collected outside of the structure's foundation. Furthermore, the field screening on WWTP1 was negative.

4.1.1 WWTP1

Nine surface soil samples were collected with a hand auger at the six-inch to one-foot interval. The hand auger boring locations were surveyed to the nearest 0.01 foot and referenced to the Ohio State Plane Coordinate System. One hand auger boring was advanced adjacent to or within the footprint of each identified foundation of the former WWTP1 structures. In addition to the surface soil samples, sediment samples were collected in the unnamed ditches located, within 300 feet, to the north and west of the subject site. The actual surface soil and sediment sample locations are illustrated in Figure 4. At the time of the field effort, both ditches were dry, with an approximate one-foot, decaying organic layer on the surface. Sediment samples obtained from the unnamed ditches were collected beneath the organic surface layer in the underlying silty fine sand.

4.1.2 WWTP3

Fourteen surface soil samples were collected, with a hand auger, at depths between the six-inch and one-foot interval. The actual hand auger boring locations were determined, by an engineer, using tape measured distances and turning right angles relative to landmarks (the standing Neutral Storage Tank) at the site. One hand auger boring was located within the footprint of or adjacent to each identified foundation of a former WWTP3 structure. The actual surface soil sample locations should be considered accurate only to the degree implied by the method used and are illustrated in Figure 5. In addition to the surface soil samples collected around the former WWTP3 structures, two surface soil samples were obtained from a depression just north of the former WWTP3 site. In addition to the surface soil samples, two sediment samples were collected in an unnamed ditch, located within 300 feet, to the west of the subject site. At the time of the field effort, the ditch was dry, with an approximate one-foot, decaying organic layer on

the surface. Sediment samples obtained from the unnamed ditch were collected beneath the organic surface layer in the underlying silty fine sand.

All borings were advanced using a stainless-steel hand auger. To minimize cross-contamination between borings and maximize the quality of the field sampling effort, decontamination and sampling procedures were performed in accordance with the site-specific QAPP, dated May 1999. Collected surface soil and sediment samples were placed in appropriate containers, labeled, and preserved on ice. At the field base station, the samples were processed and packaged for shipment. A chain-of-custody record was generated and custody seals were placed on the sample coolers. The samples were shipped overnight, via Federal Express, to Quanterra Laboratory located in North Canton, Ohio for chemical analyses. Surface soil and sediment samples were analyzed for volatile organic compounds (VOCs), semi-volatile organic compounds (SVOCs), polychlorinated biphenyls (PCBs), nitroaromatics, target analyte list (TAL) metals, Resource Conservation and Recovery Act (RCRA) metals, asbestos, total organic carbon (TOC), pH, and geotechnical parameters (Sieve/Atterberg tests). Tables 1.1 and 1.2 identify the sample numbers, sample locations, media type, and analyses performed on each sample. The results of the laboratory analyses are presented in the subsequent section of this report.

The following field quality control samples were collected to monitor sampling precision, cross-contamination, and decontamination procedures:

- Duplicates - One field duplicate was collected for every 10 primary samples. Duplicate samples were used to monitor sampling precision in the field. Duplicate analysis was performed for VOCs, metals and explosives analyses.

- Two duplicate samples (SSW110 and SDW105), were collected at WWTP1 and one duplicate sample (SSW308) was collected at WWTP3. The duplicate sample was collected at the same time and in the same analytical sequence than the original.

- Rinsate - Rinsate samples (SWW101 and SWW301) were collected by rinsing sampling equipment with deionized water after decontamination was performed. The water used to rinse the equipment was collected in the appropriate sample container. At least one rinsate was collected for every 20 samples. These samples were used to monitor field-sampling procedures for decontamination completeness. Metals and explosives analyses were performed on rinsates.

- Field Blanks – Field blank samples (SWW102 and SWW302) were collected by pouring deionized water, used in the decontamination process of field equipment, directly into prepared sample bottles. The field blank samples were handled and analyzed in the same manner as environmental samples obtained at the subject site. Field blank analyses are used to indicate the baseline contamination that may be introduced during each sampling event by the use of deionized water in the field effort.

- Temperature Blanks - These samples were provided by the laboratory. These samples were added in every cooler prepared for shipment to the analytical laboratory to monitor temperature of the samples while in transit from the field to the laboratory.

4.2 Field Screening and Analytical Results

Field screening with the PID meter revealed insignificant levels of organic vapors. Field screening results are provided in Table 6.1. The results of the laboratory chemical analysis sheets are provided in Appendix H. An independent, chemical data validation report will be provided, at a later date as an addendum for Appendix I.

Analytical test results are presented on tables 2.1 through 5.1(WWTP1) and 2.2 through 6.2 (WWTP3). Those analytes that indicated levels above the detection limits are included in these tables. A summary of findings is discussed hereafter.

4.2.1 VOCs (Table 6.2): No VOCs were found at WWTP1 above laboratory detection levels. At WWTP3 only traces of methylene chloride, which is commonly found as a laboratory artifact, were detected.

4.2.2 SVOCs: The results of the SVOC analyses are presented in Tables 3.1 and 3.2 for WWTP1 and WWTP3 respectively. At WWTP1, one sample (SSW102) indicated a concentration of 420 ppb benzo(a)pyrene which is above the Region 9 PRG of 56 ppb. Sample SSW102 detected phenanthrene, which there are no available Region 9 PRG screening level criteria. Phenanthrene is an analyte for which risk-based parameters do not exist and for which PRGs are not developed. All other SVOC results were within the acceptable Region 9 PRG screening levels at WWTP1. At WWTP3, one sample (SSW302) located near the former incinerator building, indicated concentrations of benzo(a)anthracene, benzo(a)pyrene, benzo(b)fluoranthene, and ideno(1,2,3-cd)pyrene at levels which are above the Region 9 PRG screening criteria.

4.2.3 Explosives: The results of the explosive analyses are presented in tables 2.1 and 2.2 for WWTP1 and WWTP3 respectively. At WWTP1, in sample SSW104, 2,4,6-trinitrotoluene (2,4,6-TNT) was identified at concentrations of 130 parts per million (ppm) and in sample SSW110 at a concentration of 170,000 ppm. The Region 9 PRG for 2,4,6-TNT is 15 ppm. SSW110 is the duplicate sample, obtained at the Thick Liquid Tank #1, at the same location as sample SSW108. The laboratory results for SSW108 indicated only traces (0.6 ppm) of 2,4,6-TNT. In view of these conflicting results, the analytical laboratory performed a second nitroaromatics analysis of samples SSW108 and SSW110. The second run showed no difference in the analysis of SSW108 and still significant amounts of 2,4,6,trinitrotoluene (4900ppm) in SSW110, although much

lower than initially reported. All other explosive results indicated trace levels and were within the acceptable Region 9 PRG screening levels at WWTP1. No significant amount of explosives was detected at WWTP3.

4.2.4 Metals: The results of the metals analyses are presented in tables 4.1 and 4.2 for WWTP1 and WWTP3 respectively. At WWTP1, laboratory results indicated concentrations of arsenic at levels ranging from 3 ppm to 11 ppm. The Region 9 PRG screening level for arsenic is .38 ppm. However, based on the referenced report entitled, "Site Investigations of the Reservoir No.2....Ash Pit" (IT Corporation, 1997), the arsenic detected is consistent with background levels identified at the PBOW installation. Sample SSW110, a duplicate sample for SSW108, indicated a lead concentration of 149 ppm, which is slightly above the Region 9 PRG screening criteria (130 ppm) for lead. However, this lead concentration is well below the 400 ppm action level value utilized by USEPA Region 5 and the Department of Housing and Urban Development (HUD). Three samples (SSW102, SSW103, and SSW106) indicated concentration of magnesium at levels ranging between 1180 ppm, in sample SSW103, to 2080 ppm, in sample SSW106. The Region 9 PRGs do not provide screening level criteria for magnesium. Magnesium is an analyte for which risk-based parameters do not exist and for which PRGs are not developed. At WWTP3, the same situation was identified, where the maximum concentration of arsenic was detected at 6.7 ppm. Calcium, magnesium, and potassium were identified in both sediment samples and in surface soil samples SSW301 through SSW305. Only calcium and magnesium were identified in surface soil samples SSW306 through SSW310. The Region 9 PRGs do not provide screening level criteria for calcium magnesium, and potassium. These are analytes for which risk based parameters do not exist and for which PRGs are not developed. All other metals indicated concentrations below their respective Region 9 PRG screening criteria.

4.2.5 PCBs: The results of the PCBs analyses are presented in tables 5.1 and 5.2 for WWTP1 and WWTP3 respectively. At WWTP1, surface soil samples SSW102, SSW103, and SSW106 identified concentrations of PCBs, Aroclor 1254 and 1260, however, analytical results were below the Region 9 PRG screening level criteria of 970 ppb and 200 ppb, respectively. At WWTP3, surface soil samples SSW302 and SSW303 indicated concentrations of Aroclor 1254. Soil sample SSW302 indicated an Aroclor 1254 concentration of 1000ppb, which is above the Region 9 PRG screening level of 970ppb.

4.2.6 Asbestos: Asbestos samples were analyzed by polarized light microscopy (PLM) utilizing the point counting method. No asbestos fibers were detected in any of the soil samples at either of the WWTPs.

5.0 Summary, Conclusions and Recommendations

The Site Investigation of the WWTPs was conducted to gather information to evaluate the degree of contamination of the sites left by past DOD activities. Historical information was reviewed, surface soil and sediment samples were collected and analyzed, to evaluate the subject site's environmental media and potential migration pathways. In addition, information gathered was used to identify potential environmental concerns and targets that may be affected by the site.

- Wastewater from the manufacturing process was treated in the wastewater treatment plants to reduce the volume of wastewater sent to the wastewater ponds.

- The wastewater was potentially contaminated by metals, VOCs, SVOCs, PCBs, asbestos, and explosives.

- Two wastewater treatment plants were identified for this study: Wastewater Treatment Plants Nos. 1 and 3 (WWTP1 and WWTP3).

- Based on historical aerial photographs and topographic quadrangles, the WWTPs were still in place in 1956 and were demolished around 1959.

Soil and sediment samples were collected at both plants and analyzed for VOCs, SVOCs, PCBs, explosives, asbestos and metals. At WWTP1 and WWTP3, no VOCs were detected, PCBs identified were either below or only slightly above the Region 9 PRG screening level criteria, and metals, notably arsenic, were found at levels consistent with the background concentration for the PBOW installation. However, there were indications of SVOCs at concentrations above the Region 9 PRG screening levels in the surface soil at both of the WWTPs. In addition, explosives were detected at concentrations above the Region 9 PRG screening levels at WWTP1.

The concentrations of TNT in sample SSW110, and sample SSW108, taken at the same location, shows that there are concentrations of explosives in the area. It is recommended that the presence of TNT in sample SSW110 be further investigated by laboratory testing of grab samples around the location of SSW110 and over a broaden area of the former WWTP1.

Based on the analytical results of this SI, the operation and decommissioning of the WWTPs has impacted the environmental conditions of the site. Due to the TNT encountered at WWTP1 (sample SSW110) and PCB and SVOC encountered at WWTP3 (sample SSW301), the Corps of Engineers, Louisville District, recommends that the nature and extent of the contaminants encountered be further evaluated in a Remedial Investigation (RI) study. The RI efforts will be coordinated, from the beginning with the OEPA.

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United States Geological Survey (USGS), 1979, "Sandusky, Ohio", N4122.5-W8237.5/ 7.5 minute series.

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Table 1.1 WWTP1 Sampling List.

SAMPLE NO.	LOCATION	ANALYTES
PBOW99SSW101	neutralization tank	Nitroaromatics, SVOCs, RCRA Mtls, TOC, pH, Siev/Att
PBOW99SSW102	incinerator building	Nitroaromatics, VOCs, SVOCs, PCBs, TAL Metals
PBOW99SSW103	evaporator building	Nitroaromatics, VOCs, SVOCs, PCBs, TAL Metals
PBOW99SSW104	raw waste holding tank	Nitroaromatics, RCRA Metals
PBOW99SSW105	equalization tank	Nitroaromatics, RCRA Metals
PBOW99SSW106	caustic house	Nitroaromatics, VOCs, SVOCs, PCBs, TAL Metals
PBOW99SSW107	condensate tank	Nitroaromatics, RCRA Metals
PBOW99SSW108	thick liquor tank 1	Nitroaromatics, RCRA Metals
PBOW99SSW109	thick liquor tank 2	Nitroaromatics, RCRA Metals
PBOW99SSW110	duplicate	Nitroaromatics, TAL Metals
PBOW99SSW111	incinerator building	Asbestos
PBOW99SSW112	incinerator building	Asbestos
PBOW99SSW113	evaporator building	Asbestos
PBOW99SSW114	evaporator building	Asbestos
PBOW99SSW115	caustic house	Asbestos
PBOW99SSW116	caustic house	Asbestos
PBOW99SDW101	north ditch	Nitroaromatics, SVOCs, RCRA Metals
PBOW99SDW102	north ditch	Nitroaromatics, SVOCs, RCRA Metals
PBOW99SDW103	west ditch	Nitroaromatics, SVOCs, RCRA Metals
PBOW99SDW104	west ditch	Nitroaromatics, SVOCs, RCRA Metals
PBOW99SDW105	duplicate	Nitroaromatics, SVOCs, RCRA Metals
PBOW99SWW101	rinsate	Nitroaromatics, SVOCs, PCBs, RCRA Metals
PBOW99SWW102	field blank	Nitroaromatics, VOCs, SVOCs, PCBs, RCRA Metals
PBOW99SWW103	temperature blank	

Sample No. Code:
PBOW: Plum Brook Ordnance Works
99: year
SS: Surface Soil; SD: Sediment; WW: Surface Water
W1: Wastewater Treatment Plant 1
nn: ordinal number

Table 2.1 WWTP1 Test Results. Explosives

	SEDIMENT	SEDIMENT SAMPLES					SOIL	SOIL SAMPLES							
COMPOUND	R IX PRG	SDW101	SDW102	SDW103	SDW104	SDW105	R IX PRG	SSW101	SSW102	SSW103	SSW104	SSW105	SSW106	SSW107	SSW108
2-amino-4,6-dinitrotoluene	NL	U	U	U	U	U	NL	U	U	U	0.29	U	U	U	2.3
4-amino-2,6-dinitrotoluene	NL	U	U	U	U	U	NL	U	U	U	0.33	U	U	U	1.2
2,4-dinitrotoluene	110	U	U	U	U	U	110	U	U	U	U	U	U	U	U
2,4,6-trinitrotoluene	15	U	U	U	U	U	15	U	U	U	0.66	130	U	U	0.6

	SOIL	SOIL SAMPLES		WATER	WATER SAMPLES	
COMPOUND	R IX PRG	SSW109	SSW110	R IX PRG	SWW101	SWW102
2-amino-4,6-dinitrotoluene	NL	0.74	U	NL	U	U
4-amino-2,6-dinitrotoluene	NL	0.66	U	NL	U	U
2,4-dinitrotoluene	110	U	U	73	U	U
2,4,6-trinitrotoluene	15	1.4	170,000	NL	U	U

Table 3.1 WWTP1 Semivolatiles

	SEDIMENT	SEDIMENT SAMPLES					SOIL	SOIL SAMPLE			WATER	WATER SAMPLES			
COMPOUND	R IX PRGs	SDW101	SDW102	SDW103	SDW104	SDW105	R IX PRG	SSW102	SSW103	SSW106	R IX PRG	SWW101	SWW102	SWW101	SWW102
benzo(a)anthracene	560	U	U	U	U	U	560	510	U	U	0.09	U	U	U	U
benzo(a)pyrene	56	U	U	U	U	U	56	420	U	U	0.0092	U	U	U	U
benzo(b)fluoranthene	560	U	U	U	U	U	560	550	U	U	0.092	U	U	U	U
benzo(g,h,i)perylene	NL	U	U	U	U	U	NL	U	U	U	NL	U	U	U	U
benzo(k)fluoranthene	5,600	U	U	U	U	U	5,600	U	U	U	0.92	U	U	U	U
bis(2-ethylhexyl)phthalate	32,000	U	U	U	U	U	32,000	U	U	U	5	U	U	U	U
chrysene	56,000	U	U	U	U	U	56,000	450	U	U	9.2	U	U	U	U
fluoranthene	2,000,000	U	U	U	U	U	2,000,000	1200	U	U	1500	U	U	U	U
indeno(1,2,3-cd)pyrene	560	U	U	U	U	U	560	U	U	U	0.092	U	U	U	U
1-methylnaphthalene	NL	U	U	U	U	U	NL	U	U	U	NL	U	U	U	U
2-methylnaphthalene	NL	U	U	U	U	U	NL	U	U	U	NL	U	U	U	U
naphthalene	55,000	U	U	U	U	U	55,000	U	U	U	6.2	U	U	U	U
phenanthrene	NL	U	U	U	U	U	NL	940	U	U	NL	U	U	U	U
pyrene	1,500,000	U	U	U	U	U	1,500,000	860	U	U	180	U	U	U	U

Sample Code:
SS: Surface Soil; SD: Sediment; WW: Surface Water
W1: Wastewater Treatment Plant 1
nn: ordinal number

Region IX PRG: Uints (Media Guideline)
Sediment: mg/kg (Residential Soil)
Soil : mg/kg (Residential Soil)
Water: mg/L (Tap Water)

NL: Not Listed U: Undetected

Table 4.1 WWTP1 Metals

	SEDIMENT	SEDIMENT SAMPLES					SOIL	SOIL SAMPLES									
COMPOUND	R IX PRGs	SDW101	SDW102	SDW103	SDW104	SDW105	R IX PRG	SSW101	SSW102	SSW103	SSW104	SSW105	SSW106	SSW107	SSW108	SSW109	SSW110
aluminum	75,000						75,000		4,340	5,560			4,960				8,020
antimony	30.00						30.00		U	U							3.90
arsenic	0.38	3.70	11.00	12.20	3.60	7.70	0.38	3.20	4.20	3.00	4.00	4.10	3.20	4.50	3.80	3.80	4.90
barium	5,200	U	47	28	39	U	5,200	25	27	U	23	30	25	32	27	28	45
beryllium	150						150		U	U			U				U
cadmium	37.00	U	0.26	U	U	U	37.00	U	U	U	U	U	U	U	U	U	U
calcium	NL						NL		9030	3380			7770				20100
chromium	210	8.2	14	13.9	15.3	12	210	9.9	7.8	6.8	9.9	14.9	7.6	15.9	11.5	12.4	14.2
cobalt	3,300						3,300		U	U			U				U
copper	2,800						2,800		10	5			5				10
iron	22,000						22,000		10,500	8,110			10,100				16,400
lead	130	2.8	8.9	8.5	5.3	4.8	130	56.9	19.8	12	25.4	107	28	115	43.1	39.7	149
magnesium	NL						NL		1710	1180			2080				2380
manganese	3,100						3,100		202	118			166				257
mercury	5.50	U	U	U	U	U	5.50	U	1.30	U	0.15	U	U	0.16	0.32	U	0.22
nickel	1,500						1,500		7	6			7				9
potassium	NL						NL		U	U			U				U
selenium	370.00		0.85	0.73	U	U	370.00	0.76	U	U	U	U	U	U	0.89	U	U
silver	370.00	U	U	U	U	U	370.00	U	U	U	U	U	U	U	U	U	U
sodium	55.00						55.00		U	U			U				U
thallium	6.00						6.00		U	U			U				U
vanadium	520.00						520.00		14.60	12.60			13.80				26.50
zinc	22,000						22,000		59	26			31				51

Sample Code:
SS: Surface Soil; SD: Sediment; WW: Surface Water
W1: Wastewater Treatment Plant 1
nn: ordinal number

Region IX PRG: Uints (Media Guideline)
Sediment: mg/kg (Residential Soil)
Soil : mg/kg (Residential Soil)
Water: mg/L (Tap Water)

NL: Not Listed U: Undetected

Table 5.1 WWTP1 PCBs

		SOIL SAMPLES		
COMPOUND	R IX PRGs	SSW102	SSW103	SSW106
Aroclor 1254	970	180	85	74
Aroclor 1260	200	110	50	47

Table 6.1 WWTP1 PID Test Results (parts per million)

BUILDING	**1**	**2**	**3**	**4**	**5**
Evaporator Building	11.5	17.6	21.8	20.6	21.2
Incinarator Building	15.0	14.3	13.9	20.4	9.5
Caustic Storage Building	14.6	11.1	16.0	10.3	11.0

Sample Code:
SS: Surface Soil; SD: Sediment; WW: Surface Water
W1: Wastewater Treatment Plant 1
nn: ordinal number

Region IX PRG:	Uints (Media Guideline)
Sediment:	mg/kg (Residential Soil)
Soil :	mg/kg (Residential Soil)
Water:	mg/L (Tap Water)

Table 1.2 WWTP3 Sampling List.

SAMPLE NO.	LOCATION	ANALYTES
PBOW99SSW301	neutralization tank	Nitroaromatics, TAL Metals, pH
PBOW99SSW302	incinerator building	Nitroaromatics, TAL Metals, VOCs, SVOCs, PCBs
PBOW99SSW303	evaporator building	Nitroaromatics, TAL Metals, VOCs, SVOCs, PCBs
PBOW99SSW304	Equalization tank	Nitroaromatics, TAL Metals
PBOW99SSW305	condensate tank	Nitroaromatics, TAL Metals
PBOW99SSW306	thick liquor tank 1	Nitroaromatics, TAL Metals
PBOW99SSW307	thick liquor tank 2	Nitroaromatics, TAL Metals
PBOW99SSW308	duplicate	Nitroaromatics, TAL Metals
PBOW99SSW309	depression	Nitroaromatics, TAL Metals
PBOW99SSW310	depression	Nitroaromatics, TAL Metals
PBOW99SSW311	incinerator building	asbestos
PBOW99SSW312	incinerator building	asbestos
PBOW99SSW313	evaporator building	asbestos
PBOW99SSW314	evaporator building	asbestos
PBOW99SDW301	west ditch	Nitroaromatics, TAL Metals, SVOCs
PBOW99SDW302	west ditch	Nitroaromatics, TAL Metals, SVOCs
PBOW99SWW301	rinsate	Nitroaromatics, TAL Metals, SVOCs, PCBs
PBOW99SWW302	field blank	Nitroaromatics, TAL Metals, SVOCs, PCBs

Sample No. Code:
PBOW: Plum Brook Ordnance Works
99: year
SS: Surface Soil; SD: Sediment; WW: Surface Water
W3: Wastewater Treatment Plant 3
nn: ordinal number

Table 2.2 WWTP3 Test Results. Explosives

	SEDIMENT	SEDIMENT		SOIL	SOIL SAMPLES										WATER	WATER SAMPLES	
COMPOUND	R IX PRG	SDW301	SDW302	R IX PRG	SSW301	SSW302	SSW303	SSW304	SSW305	SSW306	SSW307	SSW308	SSW309	SSW310	R IX PRG	SWW301	SWW302
4-amino-2,6-dinitrotoluene	NL	U	U	NL	U	U	U	U	U	0.26	0.33	U	U	U	NL	U	U
1,3-Dinitrobenzene	5.5	U	U	5.5	U	U	U	U	U	U	U	U	U	U	NL	3.00E-04	U
2,6-Dinitrotoluene	55	U	U	55	U	U	U	U	U	U	U	U	U	U	37	2.60E-04	U
4-Nitrotoluene	NL	U	U	NL	U	U	U	U	U	U	U	U	U	U	NL	3.70E-04	2.50E-04
2,4,6-trinitrotoluene	15	U	U	15	U	U	U	U	U	0.88	U	U	U	U	NL	U	U

Table 3.2 WWTP3 Semivolatiles

	SEDIMENT	SEDIMENT		SOIL	SOIL SAMPLES		WATER	WATER SAMPLES	
COMPOUND	R IX PRGs	SDW301	SDW302	R IX PRG	SSW302	SSW303	R IX PRG	SWW301	SWW302
benzo(a)anthracene	560	U	U	560	1200	U	0.09	U	U
benzo(a)pyrene	56	U	U	56	1300	U	0.0092	U	U
benzo(b)fluoranthene	560	U	U	560	1200	U	0.092	U	U
benzo(g,h,i)perylene	NL	U	U	NL	690	U	NL	U	U
benzo(k)fluoranthene	5,600	U	U	5,600	1100	U	0.92	U	U
chrysene	56,000	U	U	56,000	1200	U	9.2	U	U
fluoranthene	2,000,000	U	U	2,000,000	2100	U	1500	U	U
indeno(1,2,3-cd)pyrene	560	U	U	560	870	U	0.092	U	U
pyrene	1,500,000	U	U	1,500,000	1900	U	180	U	U

Sample Code:
SS: Surface Soil; SD: Sediment; WW: Surface Water
W3: Wastewater Treatment Plant 3
nn: ordinal number

Region IX PRG: Uints (Media Guideline)
Sediment: mg/kg (Residential Soil)
Soil : mg/kg (Residential Soil)
Water: mg/L (Tap Water)

NL: Not Listed U: Undetected

Table 4.2 WWTP3 Metals

	SEDIMENT	SEDIMENT		SOIL	SOIL SAMPLES										WATER	WATER SAMPLES	
COMPOUND	R IX PRGs	SDW301	SDW302	R IX PRG	SSW301	SSW302	SSW303	SSW304	SSW305	SSW306	SSW307	SSW308	SSW309	SSW310	R IX PRG	SWW301	SWW302
aluminum	75,000	7,850	9,150	75,000	8,320	7,000	6,870	7,170	7,030	4,850	5,040	9,850	8,860	7,890	37,000	U	U
antimony	30.00	U	U	30.00	U	U	U	U	U	U	U	U	U	U	15	U	U
arsenic	0.38	6.50	6.00	0.38	6.50	6.70	5.40	6.70	6.20	3.60	3.70	6.20	5.80	6.10	0.045	U	U
barium	5,200	55	64	5,200	64	57	46	48	61	28	30	73	71	56	2,600	U	U
beryllium	150	U	U	150	0.61	U	U	U	U	U	U	U	U	U	73	U	U
cadmium	37.00	U	U	37.00	U	U	U	U	U	U	U	U	U	U	18	U	U
calcium	NL	31400	6,870	NL	4010	36300	56900	7550	38400	14100	4930	6530	5670	12600	NL	U	U
chromium	210	13.1	13.6	210	12.3	13.2	11.8	10.5	11.5	8	9.5	15.6	13.8	12.5	180	U	U
cobalt	3,300	8	7	3,300	7	6	U	6	8	U	U	8	7	7	2,200	U	U
copper	2,800	16	18	2,800	13	14	14	13	3	7	7	15	13	13	1,400	U	U
iron	22,000	17500	17500	22,000	15,600	14,700	13,200	15,200	11	9,750	10,100	17,400	15,900	15,700	11,000	U	U
lead	130	9.1	18.2	130	11.2	67.3	32.2	57.2	12.2	9.2	11.6	16.3	14	11.2	4	U	U
magnesium	NL	10200	3540	NL	2090	7160	7340	3100	554	3890	1760	3010	2650	4730	NL	U	U
manganese	3,100	370	136	3,100	331	296	264	267	580	161	164	392	425	335	1,700	U	U
mercury *	5.50	U	0.05	5.50	0.05	0.11	0.16	0.04	0.04	U	0.04	0.06	0.05	0.04	11	U	U
nickel	1,500	21	19	1,500	16	17	14	15	18	8	10	18	17	17	730	U	U
potassium	NL	957	842	NL	691	807	745	675	554	U	U	877	765	729	NL	U	U
selenium	370.00	U	0.70	370.00	0.68	U	U	U	U	U	U	U	U	0.67	180	U	U
silver	370.00	U	U	370.00	U	U	U	U	U	U	U	U	U	U	180	U	U
sodium	55.00	U	U	55.00	U	U	U	U	U	U	U	U	U	U	NL	U	U
thallium	6.00	U	U	6.00	U	U	U	U	U	U	U	U	U	U	NL	U	U
vanadium	520.00	20.10	22.50	520.00	19.70	17.80	17.70	18.20	17.80	13.40	13.70	22.20	20.00	19.40	2,600	U	U
zinc	22,000	50	62	22,000	46	96	63	42	40	32	33	57	52	45	11,000	U	U

Sample Code:
SS: Surface Soil; SD: Sediment; WW: Surface Water
W3: Wastewater Treatment Plant 3
nn: ordinal number

Region IX PRG: Uints (Media Guideline)
Sediment: mg/kg (Residential Soil)
Soil : mg/kg (Residential Soil)
Water: mg/L (Tap Water)

NL: Not Listed U: Undetected
* Mercury in Solid Waste (Manual Cold-Vapor)

Table 5.2 WWTP3 PCBs

	SOIL	SOIL SAMPLES		WATER	WATER SAMPLES	
COMPOUND	R IX PRGs	SSW302	SSW303	R IX PRG	SWCL01	SWCL02
Aroclor 1016	3400	U	U	2.600	U	U
Aroclor 1221[1]	200	U	U	0.034	U	U
Aroclor 1232[1]	200	U	U	0.034	U	U
Aroclor 1242[1]	200	U	U	0.034	U	U
Aroclor 1248[1]	200	U	U	0.034	U	U
Aroclor 1254	970	1000	250	0.730	U	U
Aroclor 1260[1]	200	U	U	0.034	U	U

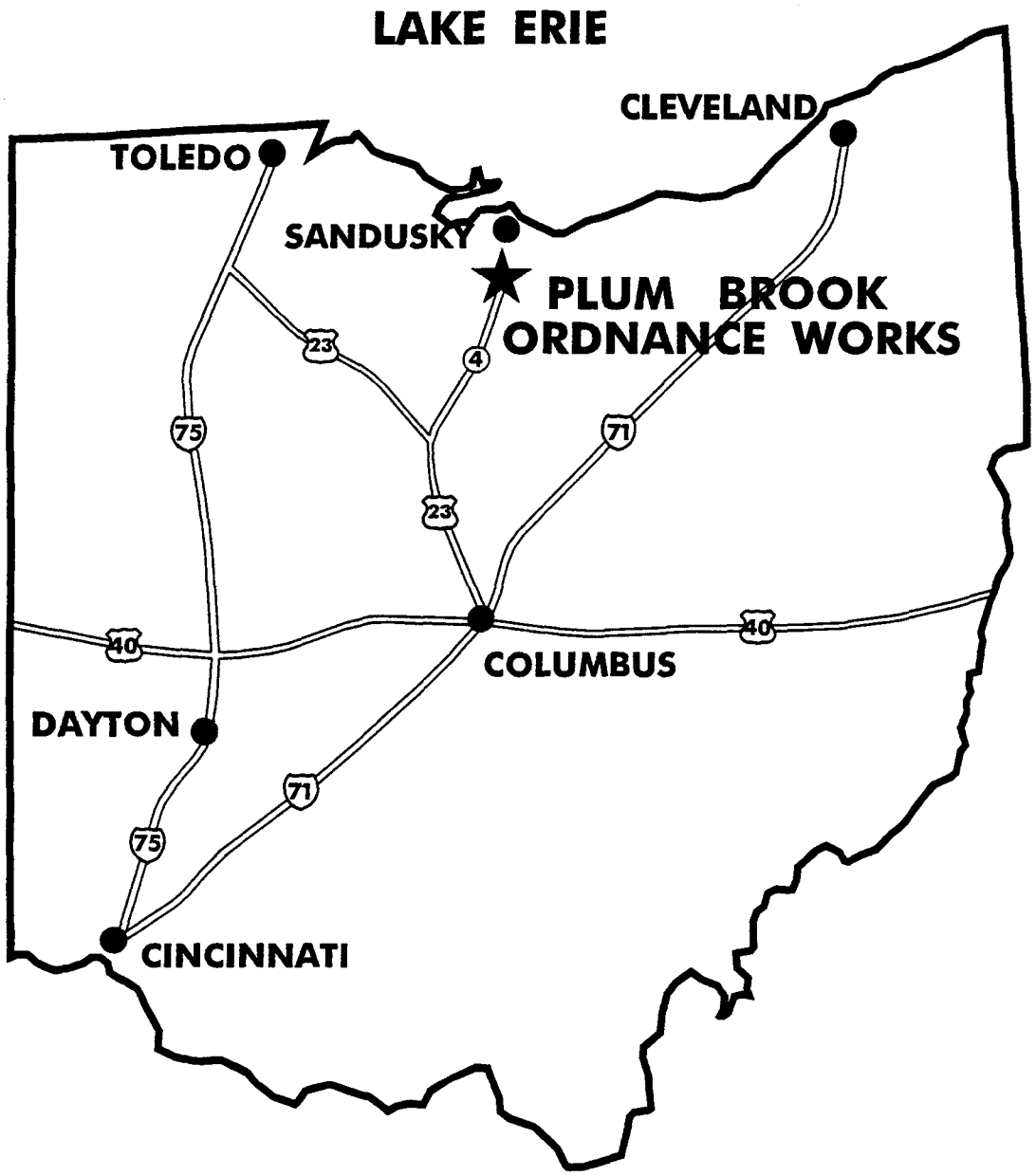
1. Water PRG Value taken from Polychlorinated Remediation Goal. NL: Not Listed U: Undetected

Table 6.2 WWTP3 Volatiles

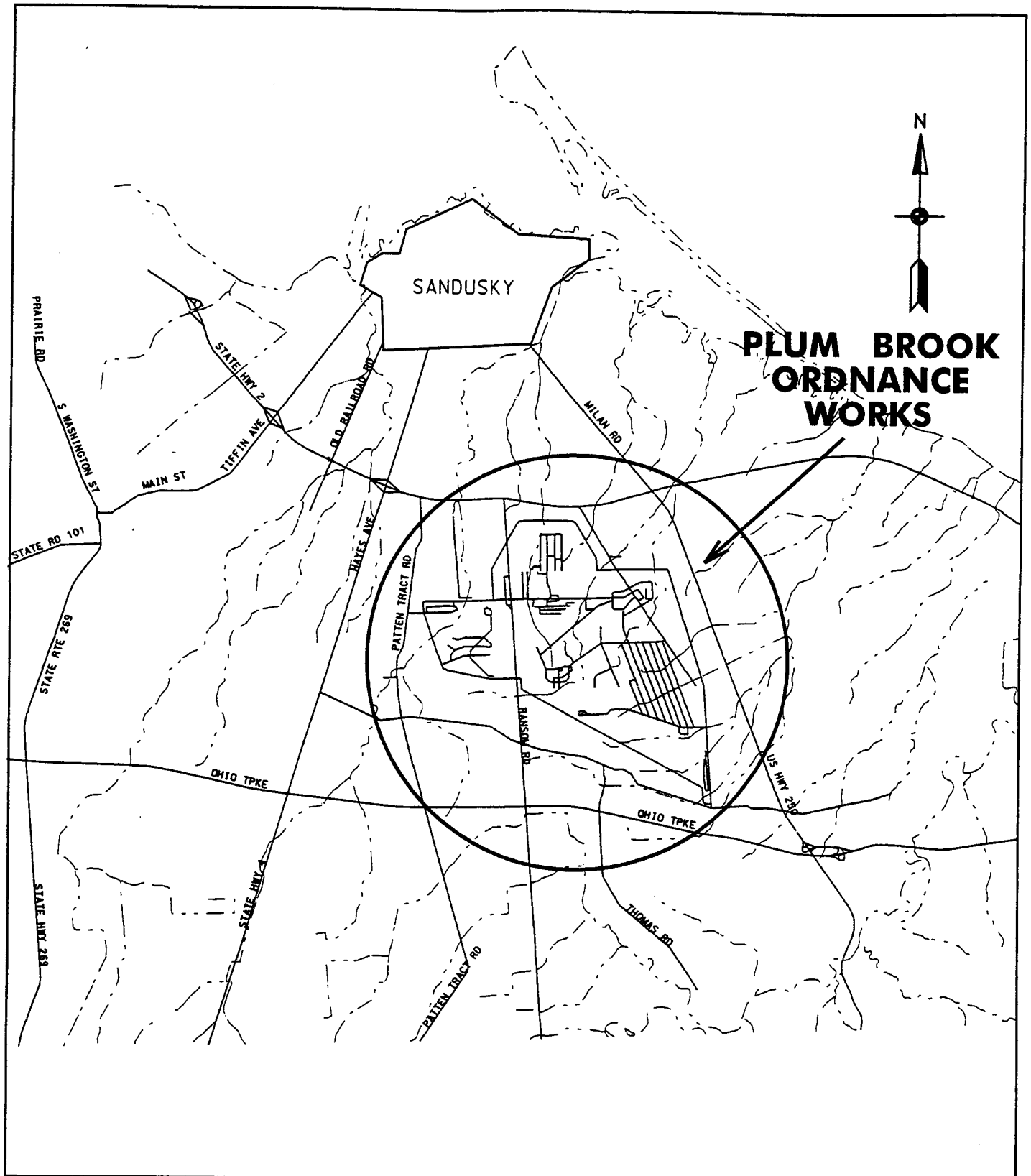
	SOIL	SOIL SAMPLE	
COMPOUND	R IX PRG	SSW302	SSW303
methylene chloride	8500	12	13

Sample Code:
SS: Surface Soil; SD: Sediment; WW: Surface Water
W3: Wastewater Treatment Plant 3
nn: ordinal number

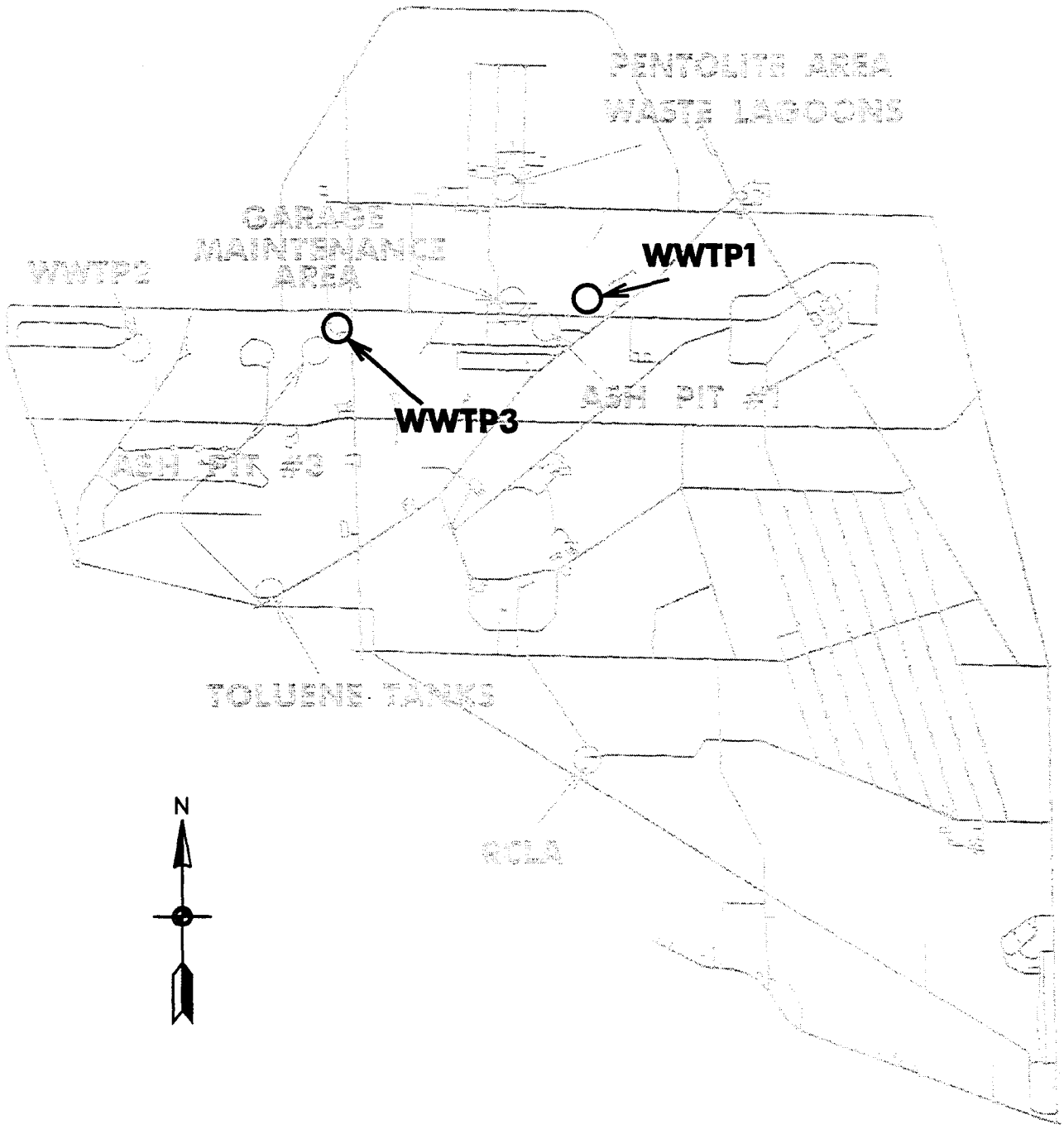
Region IX PRG: Uints (Media Guideline)
Sediment: mg/kg (Residential Soil)
Soil : mg/kg (Residential Soil)
Water: mg/L (Tap Water)



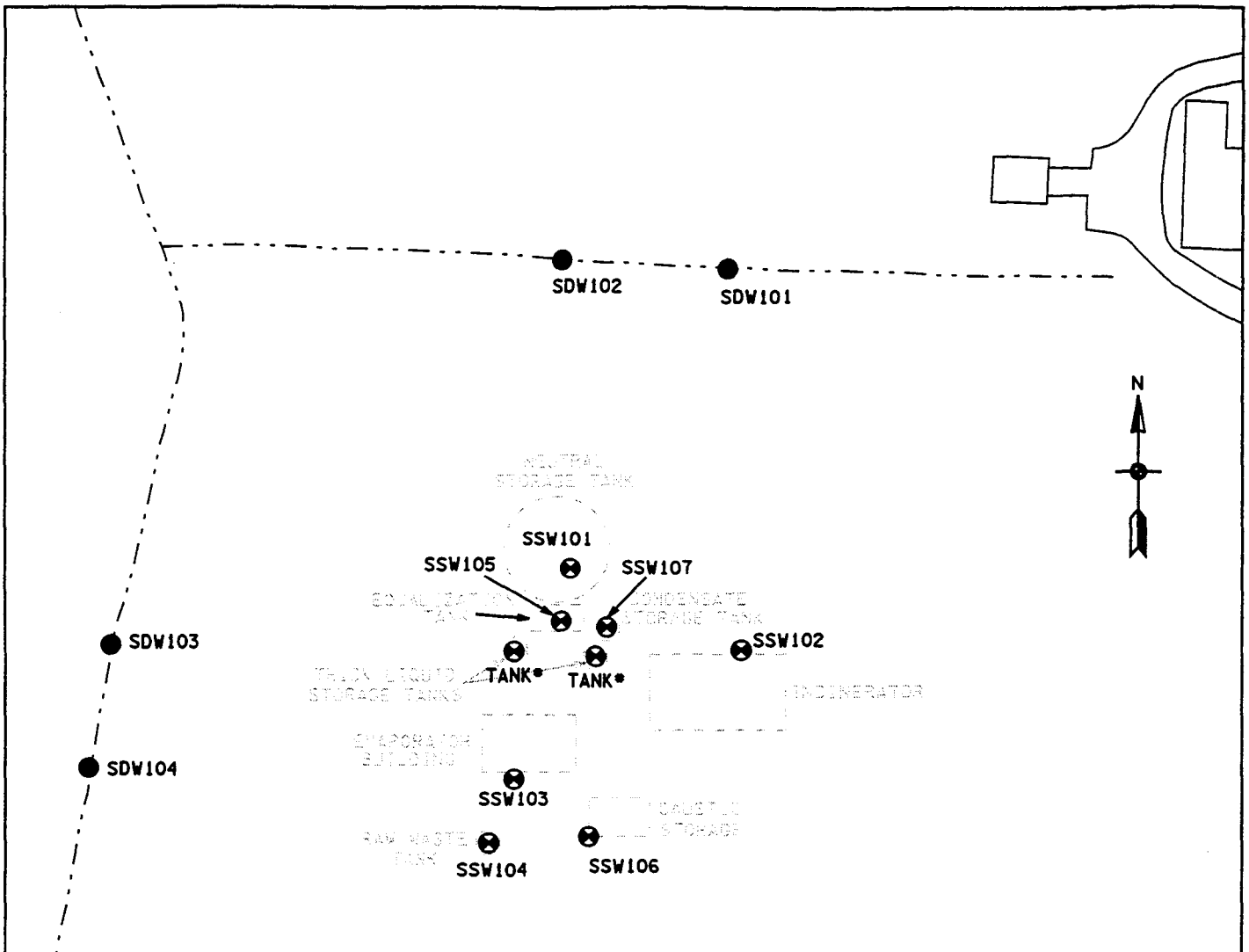
Design By:	Drawn By: WDB	Checked By:	US Army Corps of Engineers	VICINITY LOCATION MAP WASTE WATER TREATMENT PLANT #1 & #3 PLUM BROOK ORDNANCE WORKS SANDUSKY, OHIO	
Reviewed By: AJR	Approved By: MVW				
Date: AUG 1999	Scale: NONE		Drawing Code:	Sheet Ref. No.	FIGURE 1



Design By:	Drawn By: WDB	Checked By:	US Army Corps of Engineers	PROJECT LOCATION MAP WASTE WATER TREATMENT PLANT #1 & #3 PLUM BROOK ORDNANCE WORKS SANDUSKY, OHIO		
Reviewed By: AJR	Approved By: MVW					
Date: AUG 1999	Scale: NONE		Drawing Code:		Sheet Ref. No.	FIGURE 2



Design By:	Drawn By: WDB	Checked By:	US Army Corps of Engineers	SITE LOCATION PLAN WASTE WATER TREATMENT PLANT #1 & #3 PLUM BROOK ORDNANCE WORKS SANDUSKY, OHIO	
Reviewed By: AJR	Approved By: MVW				
Date: AUG 1999	Scale: NONE		Drawing Code:	Sheet Ref. No.	FIGURE 3



DRAIN

SEDIMENT SAMPLE LOCATION

SOIL SAMPLE LOCATION

FORMER LOCATION OF STRUCTURES

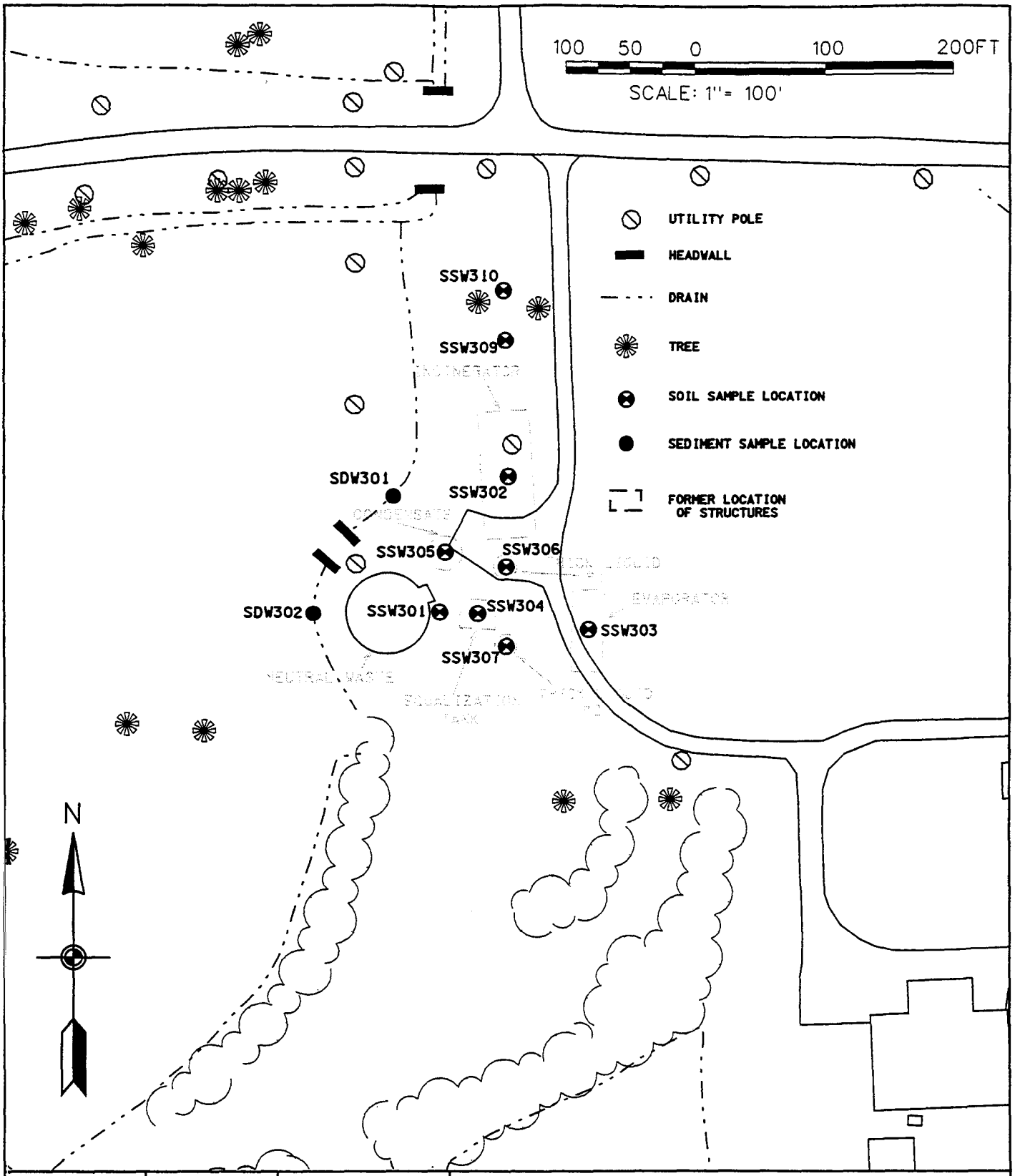
MANINTENANCE AREA ROAD

100 50 0 100 200FT

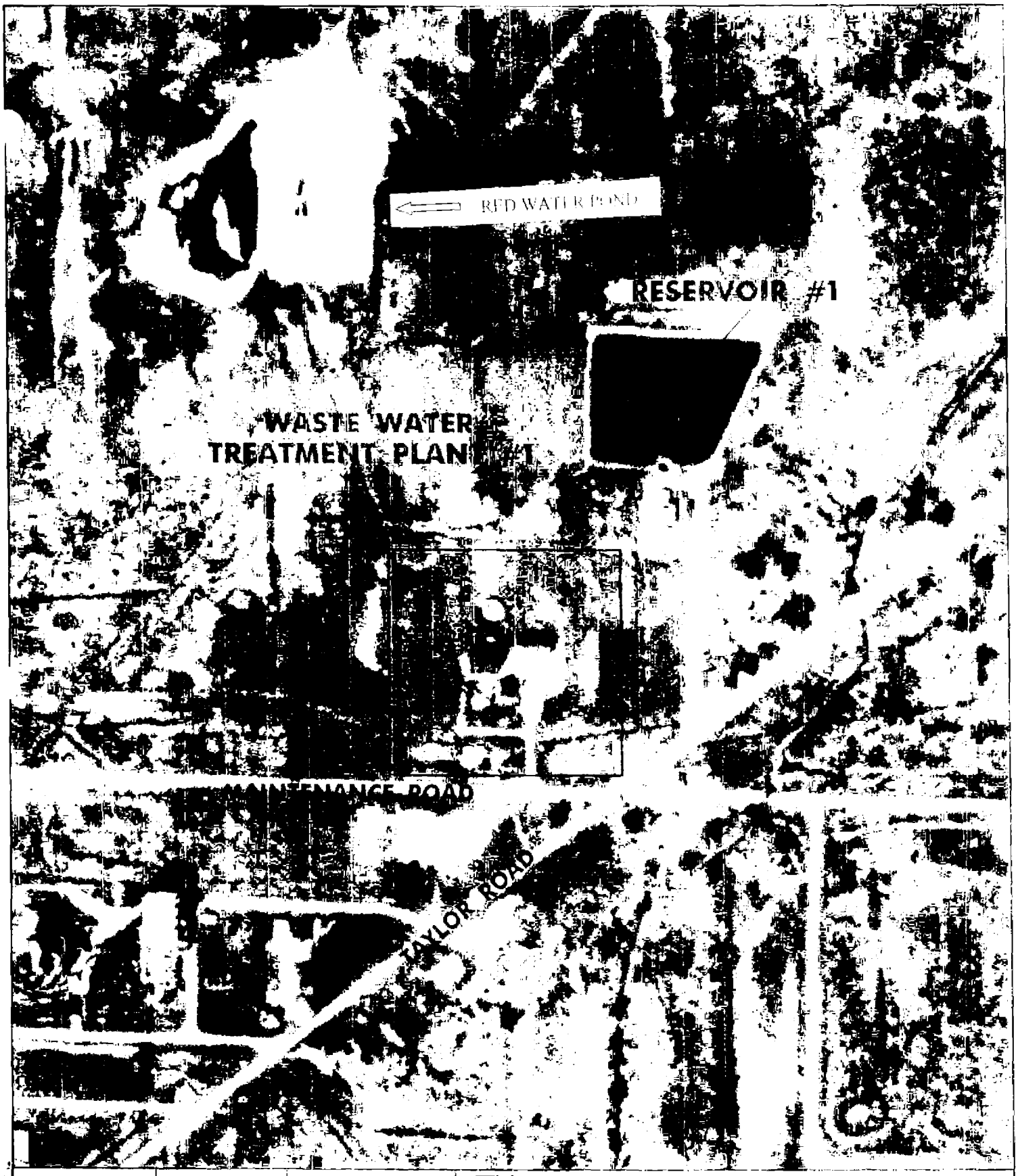
SCALE: 1"= 100'

	NORTHING	EASTING	ELEV
SDW104	623922.37	1919423.41	635.4
SDW103	623998.90	1919437.30	634.7
SDW102	624240.13	1919720.70	633.1
SDW101	624234.85	1919825.08	633.0
SSW101	624047.34	1919726.11	637.6
SSW107	624010.13	1919749.45	638.0
SSW105	624013.69	1919720.14	638.2
SSW108	623991.86	1919742.32	638.4
SSW109	623955.11	1919690.42	638.6
SSW103	623915.81	1919690.38	640.3
SSW104	623874.24	1919674.59	640.4
SSW106	623874.24	1919674.59	640.4
SSW102	623995.61	1919834.00	638.1

Design By:	Drawn By: WDB	Checked By:	US Army Corps of Engineers	SAMPLE LOCATION MAP WASTE WATER TREATMENT PLANT #1 PLUM BROOK ORDNANCE WORKS SANDUSKY, OHIO	
Reviewed By: AJR	Approved By: MVW				
Date: AUG 1999	Scale: 1" = 100'		Drawing Code:	Sheet Ref. No.	FIGURE 4

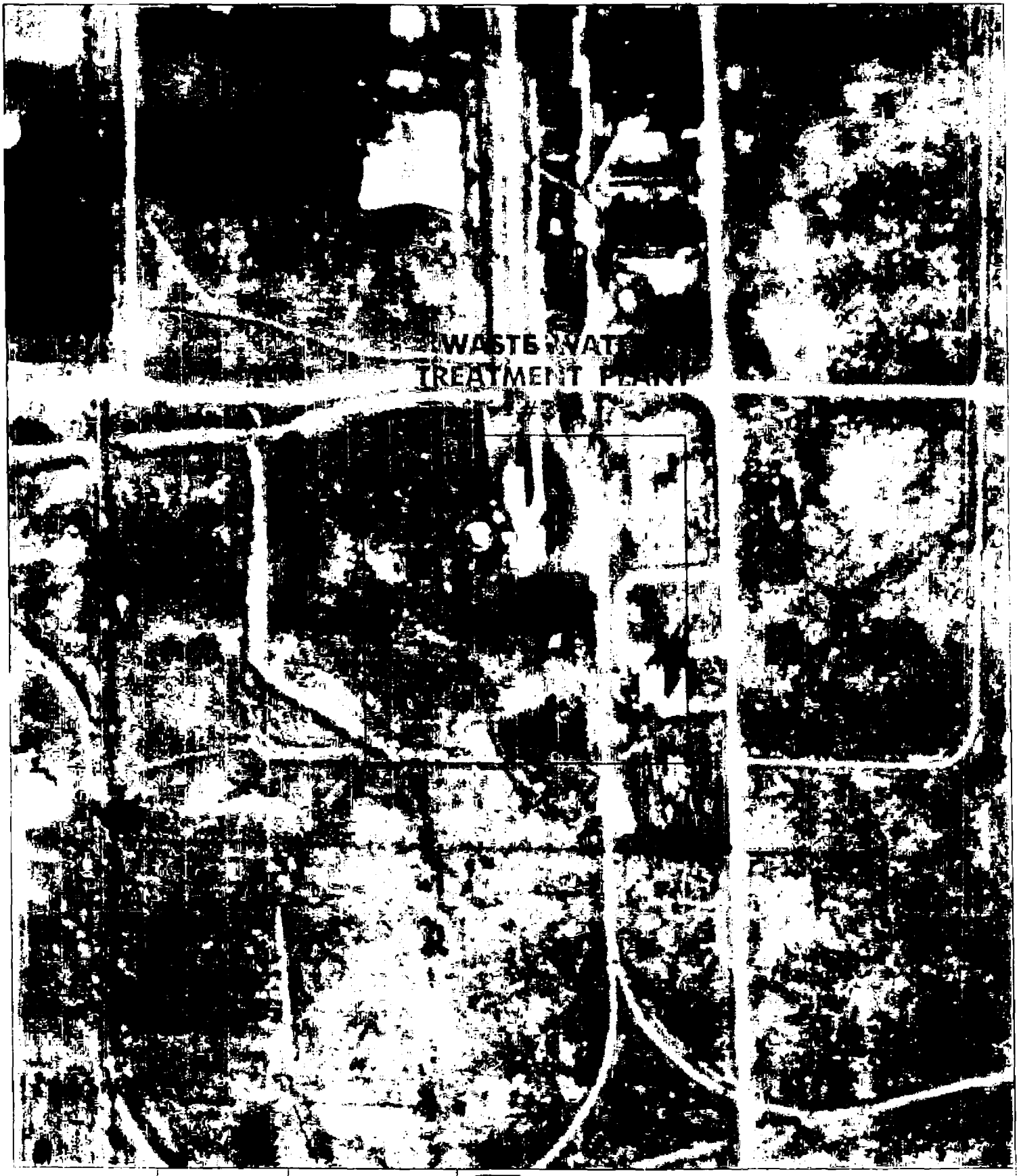


Design By:	Drawn By: WDB	Checked By:	US Army Corps of Engineers	SAMPLE LOCATION PLAN WASTE WATER TREATMENT PLANT #3 PLUM BROOK ORDNANCE WORKS SANDUSKY, OHIO
Reviewed By: AJR	Approved By: MVW			
Date: AUG 1999	Scale: 1" = 100'	Drawing Code:	Sheet Ref. No.	FIGURE 5

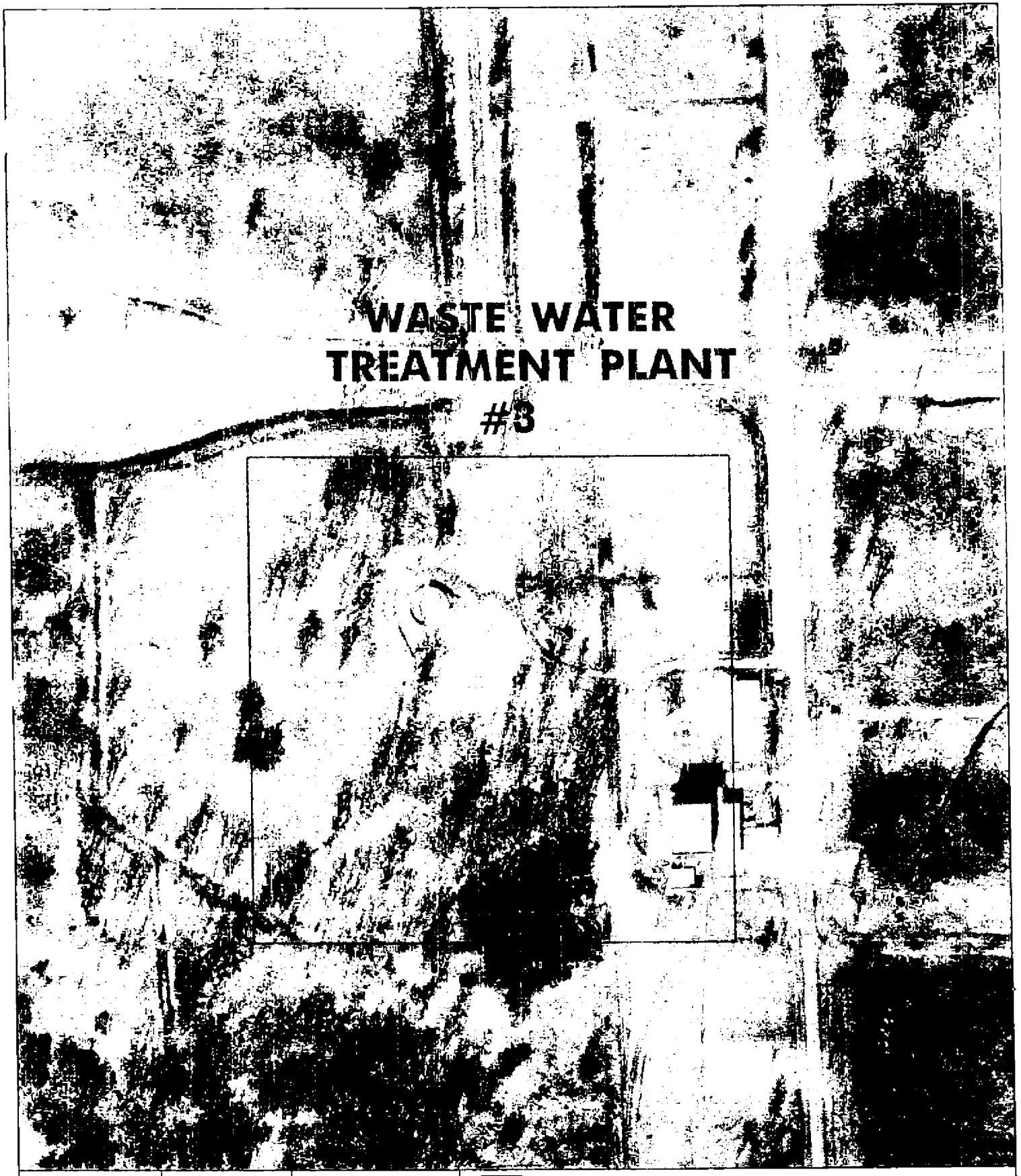


Design By:	Drawn By: WDB	Checked By:	US Army Corps of Engineers	WASTE WATER TREATMENT PLANT #1 FROM c. 1950 AERIAL PHOTOGRAPH PLUM BROOK ORDNANCE WORKS SANDUSKY, OHIO
Reviewed By: AJR	Approved By: MVW			
Date: AUG 1999	Scale: 1" = 300'	Drawing Code:	Sheet Ref. No.	FIGURE 6

Design By:	Drawn By: WDB	Checked By:	US Army Corps of Engineers	WASTE WATER TREATMENT PLANT #1 ILLUSTRATED ON 1997 AERIAL PHOTOGRAPH PLUM BROOK ORDNANCE WORKS SANDUSKY, OHIO	
Reviewed By: AJR	Approved By: MVW				
Date: AUG 1999	Scale: 1" = 200'		Drawing Code:	Sheet Ref. No.	FIGURE 7



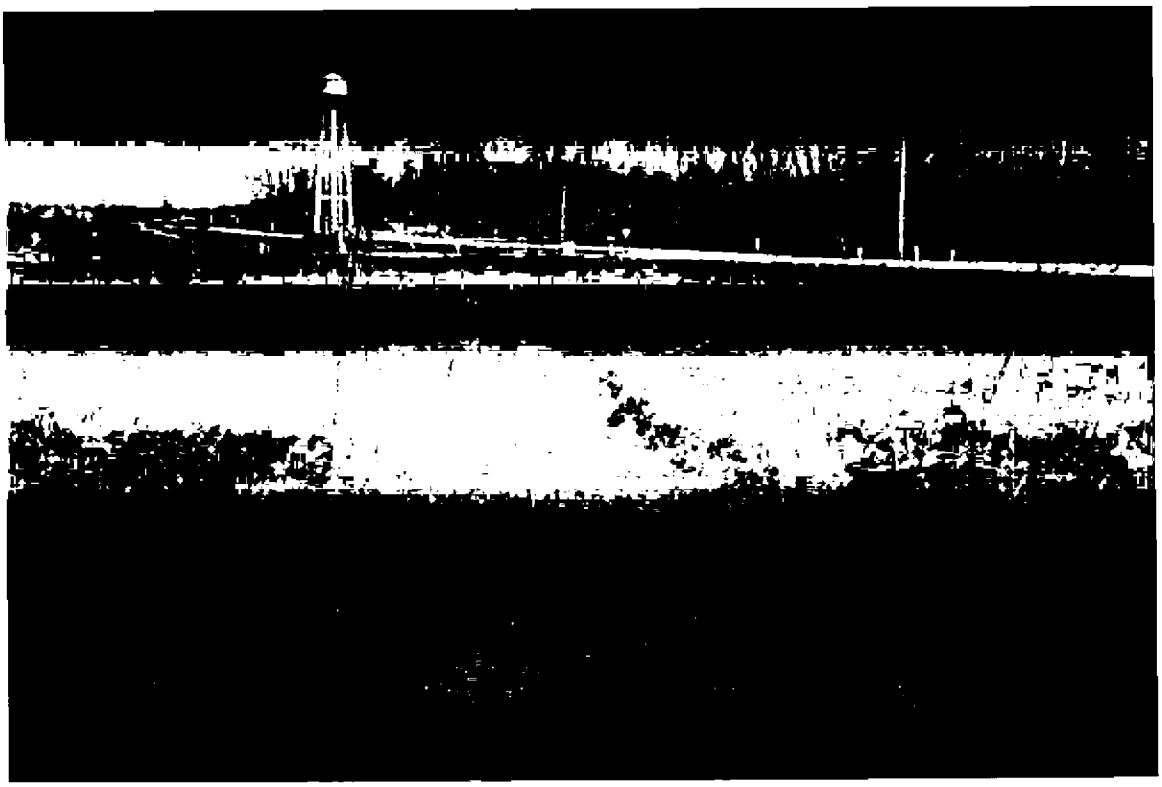
Design By:	Drawn By: WDB	Checked By:	US Army Corps of Engineers	WASTE WATER TREATMENT PLANT *3 FROM c. 1950 AERIAL PHOTOGRAPH PLUM BROOK ORDNANCE WORKS SANDUSKY, OHIO	
Reviewed By: AJR	Approved By: MVW				
Date: AUG 1999	Scale: 1" = 300'	Drawing Code:	Sheet Ref. No.	FIGURE 8	



Design By:	Drawn By: WDB	Checked By:	US Army Corps of Engineers	WASTE WATER TREATMENT PLANT #3 ILLUSTRATED ON 1997 AERIAL PHOTOGRAPH PLUM BROOK ORDNANCE WORKS SANDUSKY, OHIO	
Reviewed By: AJR	Approved By: MVW				
Date: AUG 1999	Scale: 1" = 200'		Drawing Code:	Sheet Ref. No.	FIGURE 9

WWTP 1 – Site View Facing NE

WWTP 1 – Site View Facing SW with Slab Remnants

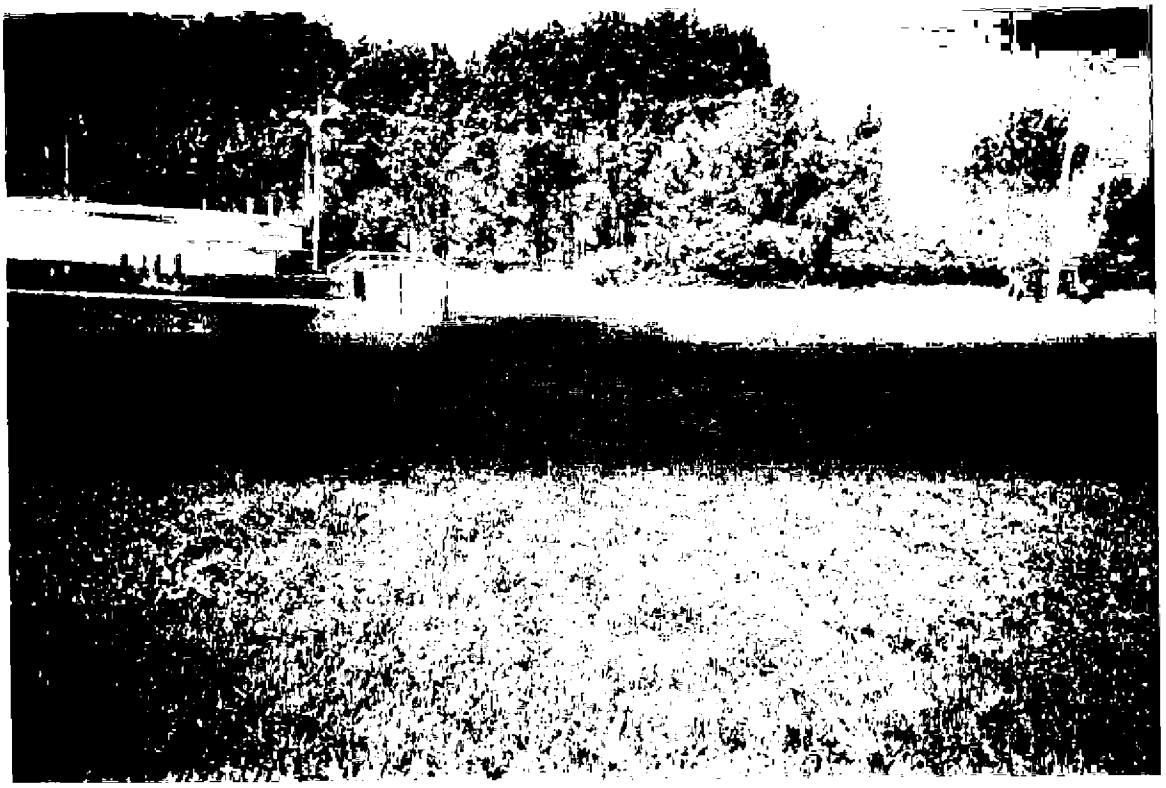


WWTP 1 – Site View Facing SE

WWTP 1 – Slab Remnants

WWTP 3 – Neutral Storage Tank

WWTP 3 – Site View Facing North

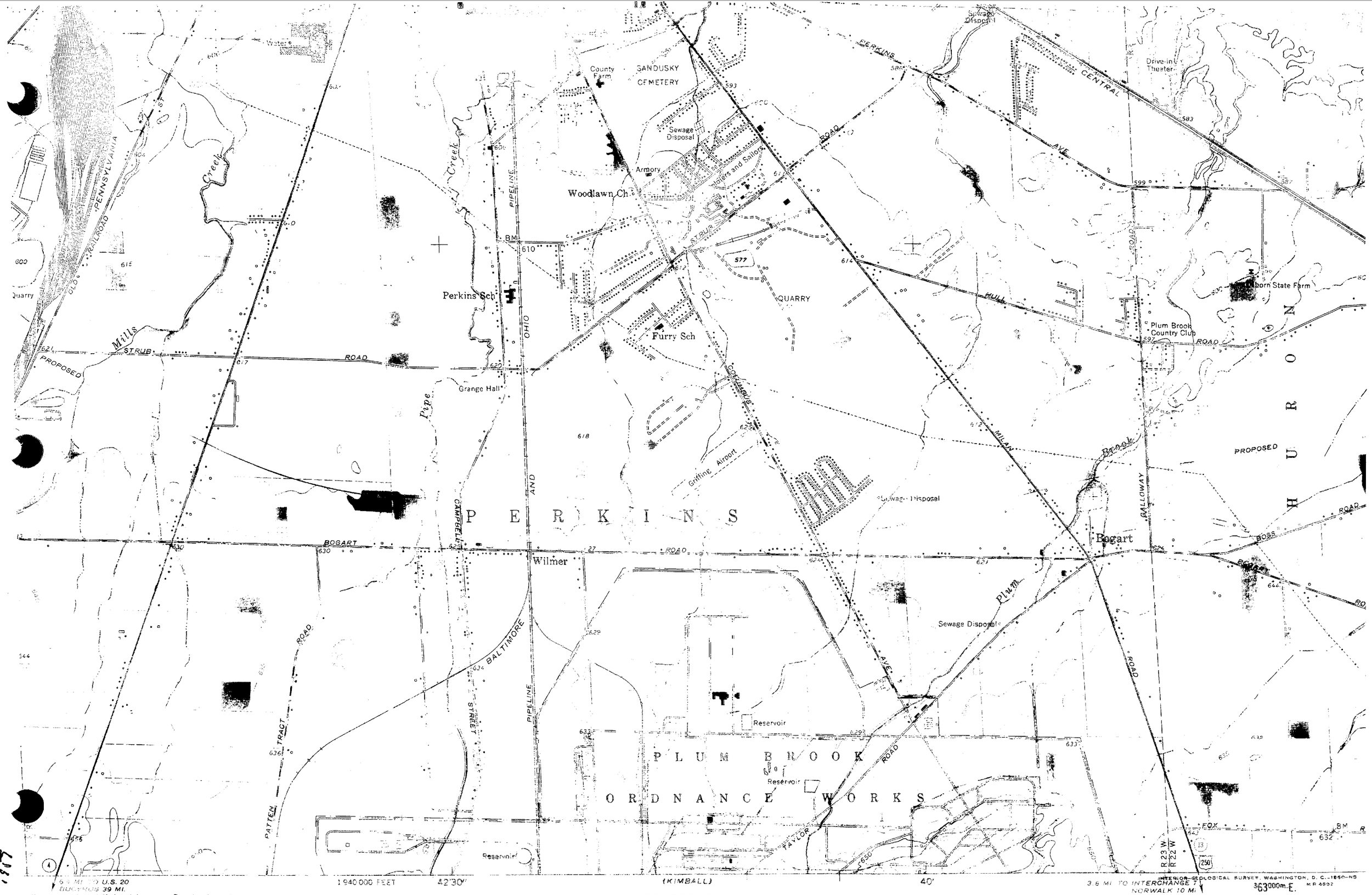


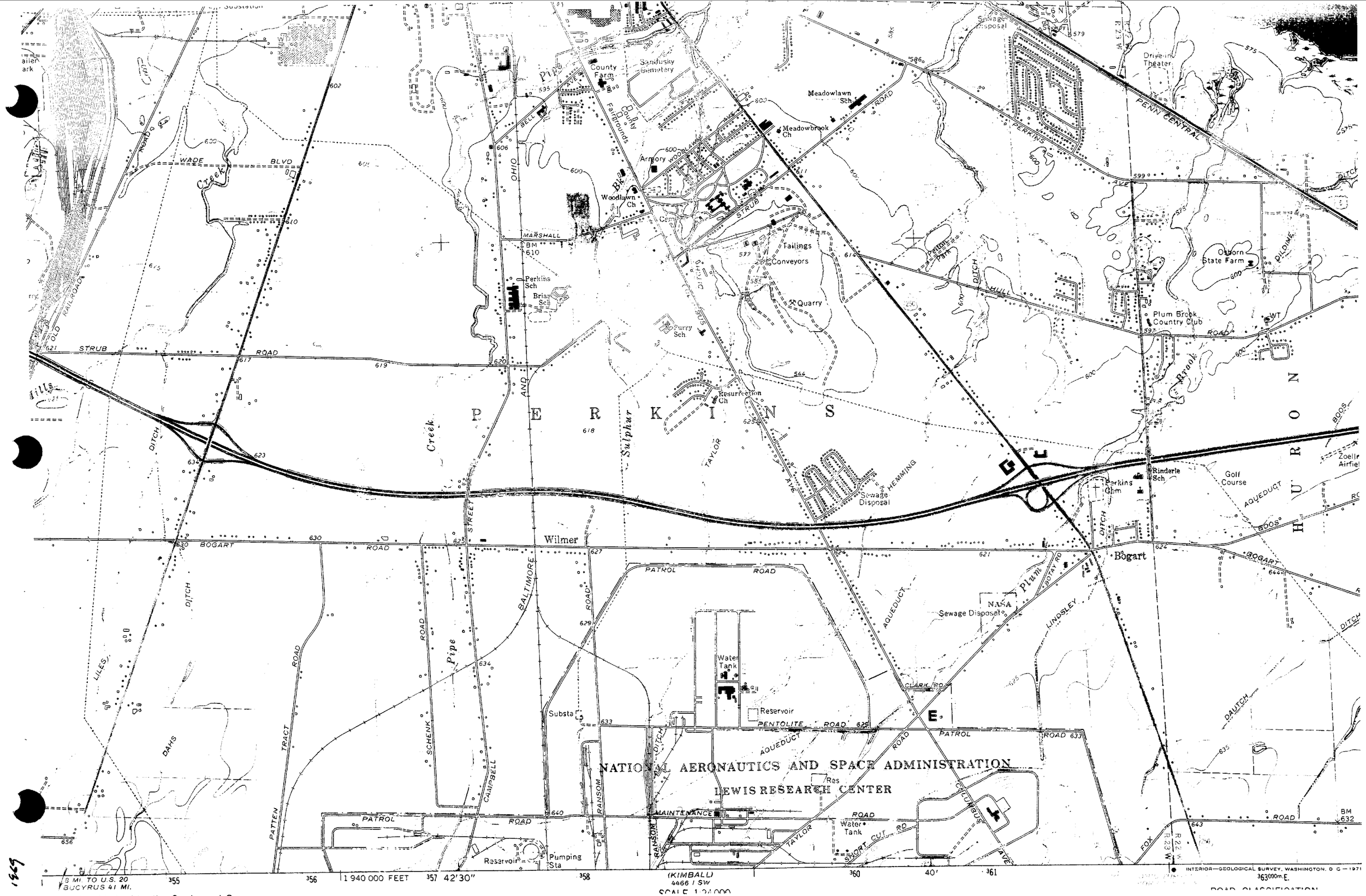
WWTP 3 – Site View Facing West

WWTP 3 – Sample Point in the Ravine

WWTP 3 – View of the Ravine, North Side

WWTP 3 – View of the Ravine, South Side


County Farm
SANDUSKY CEMETERY
Sewage Disposal
Armory
Woodlawn Ch
Sailors and Soldiers
PERKINS CENTRAL AVE
Drive-in Theater
Perkins Sch
Furry Sch
QUARRY
Grange Hall
Griffing Airport
Sewage Disposal
Unborn State Farm
Plum Brook Country Club
PROPOSED
P E R K I N S
Bogart
Wilmer
Sewage Disposal
Reservoir
P L U M B R O O K
O R D N A N C E W O R K S
Reservoir
Reservoir
Reservoir
BOGART ROAD
BALTIMORE AND OHIO
PIPELINE
CAMPBELL STREET
PATTEN TRACT ROAD
STRUB ROAD
MILAN AVE
GALLOWAY ROAD
TAYLOR ROAD
FOX ROAD
BOSS ROAD
PENNSYLVANIA RAILROAD
OLD
Mills Creek
Pipe Creek
Quarry
Water
1 940 000 FEET
42'30"
(KIMBALL)
40'
3.6 MI. TO INTERCHANGE 7
NORWALK 10 MI.
R 23 W
R 22 W
INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1950—N5
63 000m.E.


PERKINS
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LEWIS RESEARCH CENTER
Wilmer
Bogart
Sandusky Cemetery
County Farm
County Fairgrounds
Meadowlawn Sch
Meadowbrook Ch
Armory
Woodlawn Ch
Cem
Tailings
Conveyors
Quarry
Perkins Sch
Briar Sch
Curry Sch
Resurrection Ch
Sewage Disposal
Drive-in Theater
Osborn State Farm
Plum Brook Country Club
Golf Course
Rinderle Sch
Perkins Cem
NASA
Water Tank
Reservoir
Substa
Res
Pumping Sta
MAINTENANCE
PENTOLITE
PATROL ROAD
AQUEDUCT
CLARK RD
SHORT CUT RD
PENN CENTRAL
STRUB ROAD
WADE BLVD
MARSHALL
BOGART ROAD
OHIO AND PIPE
BALTIMORE
TRACT ROAD
PATTEN
SCHENK
CAMPBELL
RANSOM
TAYLOR
HEMMING
LINDSLEY
COLUMBUS AVE
FOX
DITCH
BM 610
BM 632
(KIMBALL)
4466 I SW
1 940 000 FEET
42'30"
40'
363000m.E.
3 MI. TO U.S. 20
BUCYRUS 41 MI.
INTERIOR—GEOLOGICAL SURVEY, WASHINGTON, D. C.—1971
ROAD CLASSIFICATION

SCALE 1:24 000

1 MILE — 5000 0 5000 10000 15000 20000 25000 FEET — 1 KILOMETER

☐ 1 acre — 10 acres — 20 acres

ACREAGE GUIDE

Other information including a narrative report concerning the wetland resources depicted on this document may be available. For information, contact:

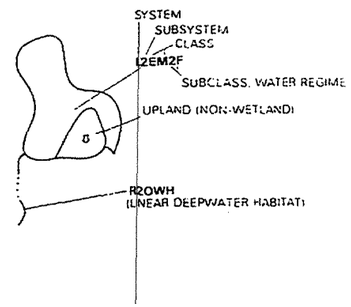
Regional Director (ARDE) Region I
U.S. Fish and Wildlife Service
Lloyd 500 Bldg., Suite 1692
500 N.E. Multnomah Street
Portland, Oregon 97232

SPECIAL NOTE

This document was prepared primarily by stereoscopic analysis of high altitude aerial photographs. Wetlands were identified on the photographs based on vegetation, visible hydrology, and geography in accordance with **Classification of Wetlands and Deepwater Habitats of the United States** (FWS/OBS - 79/31 December 1979). The aerial photographs typically reflect conditions during the specific year and season when they were taken. In addition, there is a margin of error inherent in the use of the aerial photographs. Thus, a detailed on the ground and historical analysis of a single site may result in a revision of the wetland boundaries established through photographic interpretation. In addition, some small wetlands and those obscured by dense forest cover may not be included on this document.

Federal, State and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, State or local government or to establish the geographical scope of the regulatory programs of government agencies. **Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, State or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.**

SYMBOLOGY EXAMPLE



U — Primarily represents upland areas, but may include unclassified wetlands such as man-modified areas, non photo-identifiable areas and/or unintentional omissions.

NOTES TO THE USER

- Wetlands which have been field examined are indicated on the map by an asterisk (*).
- Additions or corrections to the wetlands information displayed on this map are solicited. Please forward such information to the address indicated.
- Subsystems, Classes, Subclasses, and Water Regimes in *italics* were developed specifically for NATIONAL WETLANDS INVENTORY mapping.
- Some areas designated as R4SB, R4SBW, OR R4SBJ (INTERMITTENT STREAMS) may not meet the definition of wetland
- This map uses the class Unconsolidated Shore (US). On earlier NWI maps that class was designated Beach/Bar (BB), or Flat (FL). Subclasses remain the same in both versions.

AERIAL PHOTOGRAPHY

DATE:	9 / 85	DATE:	/ /
SCALE:	1:65 000	SCALE:	
TYPE:	CIR	TYPE:	

U.S. DEPARTMENT OF THE INTERIOR

FISH AND WILDLIFE SERVICE

Prepared by National Wetlands Inventory

1987

SYSTEM: M — MARINE

SUBSYSTEM: 1 — SUBTIDAL

CLASS	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	RF — REEF	OW — *OPEN WATER/ Unknown Bottom*
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 5 *Unknown Submergent*	1 Coral 3 Worm	

SUBSYSTEM: 2 — INTERTIDAL

CLASS	AB — AQUATIC BED	RF — REEF	RS — ROCKY SHORE	US — UNCONSOLIDATED SHORE
Subclass	1 Algal 3 Rooted Vascular 5 *Unknown Submergent*	1 Coral 3 Worm	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic

SYSTEM: E — ESTUARINE

SUBSYSTEM: 1 — SUBTIDAL

CLASS	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	RI — REEF	OW — *OPEN WATER/ Unknown Bottom*
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	2 Mollusk 3 Worm	

SUBSYSTEM: 2 — INTERTIDAL

CLASS	AB — AQUATIC BED	RI — REEF	SB — STREAMBED	RS — ROCKY SHORE	US — UNCONSOLIDATED SHORE	EM — EMERGENT	SS — SCRUB-SHRUB	FO — FORESTED
Subclass	1 Algal 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	2 Mollusk 3 Worm	1 Cobble Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Persistent 2 Nonpersistent	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*

SYSTEM: R — RIVERINE

SUBSYSTEM	1 — TIDAL		2 — LOWER PERENNIAL		3 — UPPER PERENNIAL	4 — INTERMITTENT	5 — UNKNOWN PERENNIAL
CLASS	RB — ROCK	UB — UNCONSOLIDATED BOTTOM	*SB — STREAMBED	AB — AQUATIC BED	RS — ROCKY SHORE	US — UNCONSOLIDATED SHORE	**EM — EMERGENT	OW — *OPEN WATER/ Unknown Bottom*
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Bedrock 2 Rubble 3 Cobble-Gravel 4 Sand 5 Mud 6 Organic 7 Vegetated	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	2 Nonpersistent	

*STREAMBED is limited to TIDAL and INTERMITTENT SUBSYSTEMS, and comprises the only CLASS in the INTERMITTENT SUBSYSTEM

**EMERGENT is limited to TIDAL and LOWER PERENNIAL SUBSYSTEMS. The remaining CLASSES are found in all SUBSYSTEMS

SYSTEM: L — LACUSTRINE

SUBSYSTEM: 1 — LIMNETIC

CLASS	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	OW — *OPEN WATER/ Unknown Bottom*
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	

SUBSYSTEM: 2 — LITTORAL

CLASS	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	RS — ROCKY SHORE	US — UNCONSOLIDATED SHORE	EM — EMERGENT	OW — *OPEN WATER/ Unknown Bottom*
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	2 Nonpersistent	

SYSTEM: P — PALUSTRINE

CLASS	RB — ROCK BOTTOM	UB — UNCONSOLIDATED BOTTOM	AB — AQUATIC BED	US — UNCONSOLIDATED SHORE	ML — MOSS-LICHEN	EM — EMERGENT	SS — SCRUB-SHRUB	FO — FORESTED	OW — *OPEN WATER/ Unknown Bottom*
Subclass	1 Bedrock 2 Rubble	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic	1 Algal 2 Aquatic Moss 3 Rooted Vascular 4 Floating Vascular 5 *Unknown Submergent* 6 *Unknown Surface*	1 Cobble-Gravel 2 Sand 3 Mud 4 Organic 5 Vegetated	1 Moss 2 Lichen	1 Persistent 2 Nonpersistent	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*	1 Broad-Leaved Deciduous 2 Needle-Leaved Deciduous 3 Broad-Leaved Evergreen 4 Needle-Leaved Evergreen 5 Dead 6 *Deciduous* 7 *Evergreen*	

MODIFIERS

In order to more adequately describe wetland and deepwater habitats one or more of the water regime, water chemistry, soil or special modifiers may be applied at the class or lower level in the hierarchy. The farmed modifier may also be applied to the ecological system

WATER REGIME

Non-Tidal

- A Temporarily Flooded
- B Saturated
- C Seasonally Flooded
- D *Seasonally Flooded/ Well Drained*
- E *Seasonally Flooded/ Saturated*
- F Semipermanently Flooded
- G Intermittently Exposed
- H Permanently Flooded
- J Intermittently Flooded
- K Artificially Flooded
- W Intermittently Flooded/Temporary
- Y Saturated/Semipermanent/ Seasonal
- Z Intermittently Exposed/Permanent
- U *Unknown*

Tidal

- K *Artificially Flooded*
- L Subtidal
- M Irregularly Exposed
- N Regularly Flooded
- P Irregularly Flooded
- *S Temporary-Tidal
- *R Seasonal Tidal
- *T Semipermanent Tidal
- *V Permanent-Tidal
- *u *Unknown*

*These water regimes are only used in wetlands in coastal freshwater systems

WATER CHEMISTRY

Coastal Halinity

- 1 Hyperhaline
- 2 Euhaline
- 3 Mixohaline (Brackish)
- 4 Polyhaline
- 5 Mesohaline
- 6 Oligohaline
- 0 Fresh

Inland Salinity

- 7 Hypersaline
- 8 Eusaline
- 9 Mixosaline
- 0 Fresh

pH Modifiers for all Fresh Water

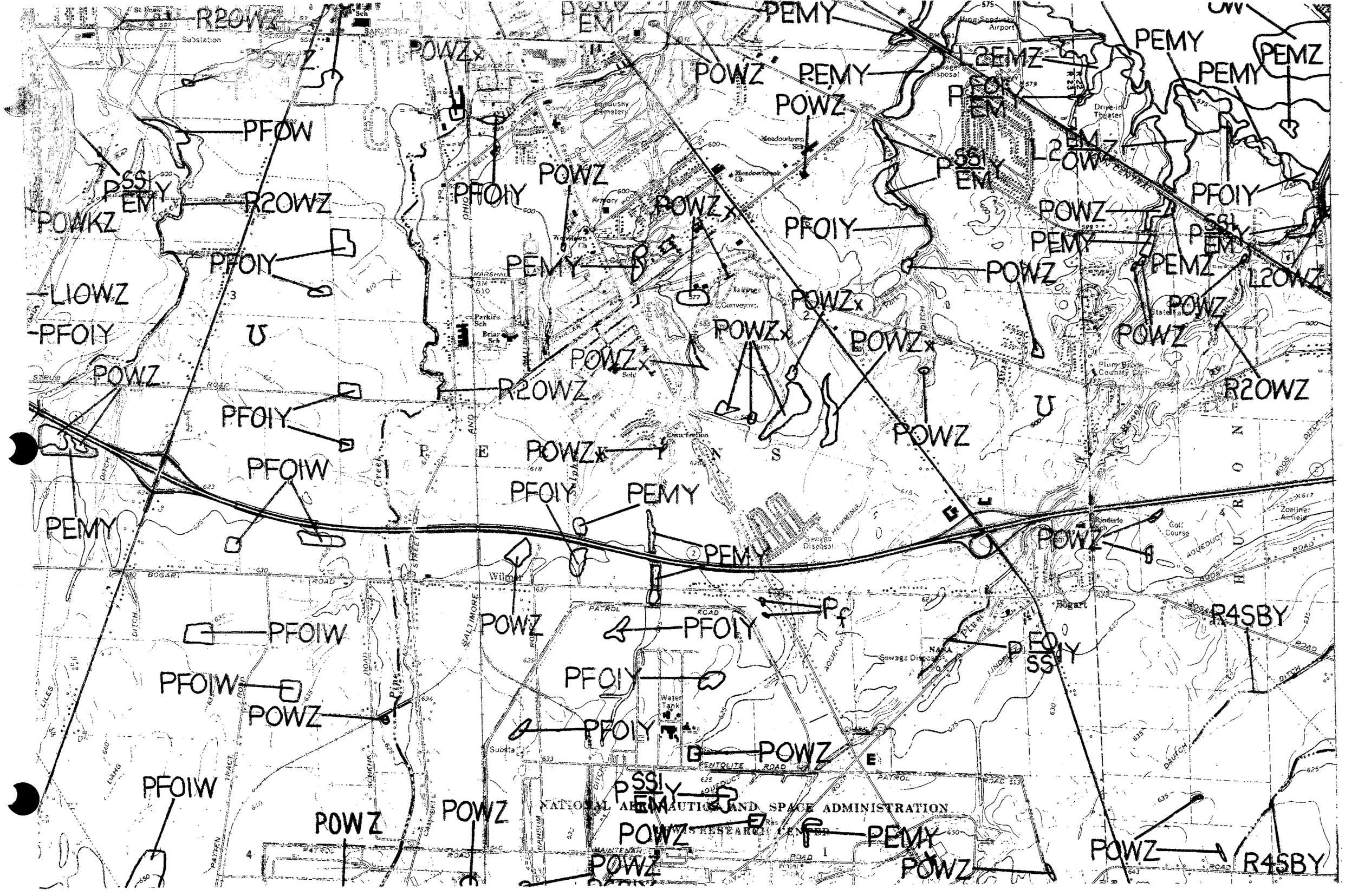
- a Acid
- i Circumneutral
- n Alkaline

SOIL

- o Organic
- m Mineral

SPECIAL MODIFIERS

- b *Beaver*
- d *Partially Drained/Ditched*
- f Farmed
- h *Diked/Impounded*
- r Artificial Substrate
- s Spoil
- x Excavated


R2OWZ
POWZ
POWZx
PEMY
EM
PEMZ
L2EMZ
PFOW
PSSI
EM
R2OWZ
POWKZ
PFOIY
POWZ
PEMY
LIOWZ
PFOIW
R2OWZ
PFOIW
PEMY
POWZ
R4SBY
PSSI
EM
PFOIY
POWZ
PEMY
PEMZ
L2OWZ
POWZx
PFOIY
POWZ
PEMY
POWZ
PFOIW
PFOIY
PEMY
POWZ
PFOIW
PFOIY
PFOIW
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PFOIY
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PSSI
EM
PEMY
POWZ
PEMY
POWZ
R4SBY
NATIONAL AERONAUTICS AND SPACE ADMINISTRATION
LEWIS RESEARCH CENTER

LEGEND

AREAS IN WHICH YIELDS OF 100 TO 500 GALLONS PER MINUTE MAY BE DEVELOPED.

Yields of more than 500 gallons per minute have been developed at depths of less than 200 feet in cavernous limestone and dolomite. Domestic supplies are generally obtained at depths of around 100 feet.

Hydrogen sulfide, in varying amounts, may be encountered in the bedrock.

Areas in which there is a potential concentration of contamination due to the underground disposal of storm wastes from Bellevue.

Municipal and industrial water supplies are available from wells drilled into permeable sand and gravel deposits in ancient buried valley.

AREAS IN WHICH YIELDS OF 25 TO 100 GALLONS PER MINUTE MAY BE DEVELOPED.

Buried valley containing more than 150 feet of unconsolidated deposits. Much of the valley fill consists of clay and fine sand. Extensive test drilling may be needed to locate coarse materials capable of supplying larger yields to drilled wells.

AREAS IN WHICH YIELDS OF 5 TO 25 GALLONS PER MINUTE MAY BE DEVELOPED.

Yields of 15, or less, gallons per minute are developed from wells drilled into the limestone. Hydrogen sulfide may be present in varying amounts.

AREAS IN WHICH YIELDS OF 3 TO 10 GALLONS PER MINUTE MAY BE DEVELOPED.

Ground water obtained from the Berea sandstone. Although this formation covers a larger area than shown, its thickness and recharge potential limit productivity to isolated zones.

AREAS IN WHICH YIELDS SELDOM EXCEED 3 GALLONS PER MINUTE

Limited quantities of ground water are obtained from thin, discontinuous sand and gravel deposits interbedded in fine, sandy clay or from the underlying shale. Drilling deeper than 30 feet into the shale is not recommended. Occasional gas or salt noted in the eastern half of the county.

Larger yields may be obtained in western Huron and Oxford townships and southeastern Perkins Township. Wells may encounter water-bearing limestone beneath as much as 60 feet of impervious shale.

Thick deposits (as much as 90 feet) of clay, sand and gravel cover the shale bedrock. Where permeable sands and gravels are present, adequate domestic supplies are obtained.

The ground-water characteristics of Erie County have been mapped regionally, based upon interpretations of 2100 water well records and the area's geology and hydrology. Well log data on the map were selected as typical for the areas shown.

Information regarding specific sites may be obtained from the Division of Water.

Chemical Analysis Table

Well site	A	B	C	D	E	F
Depth (ft.)	168	60	146	100	69	30
Aquifer	LS	LS	SG	SS	Sh	Sh
Iron (Fe)	0.33	0.02	1.3	0.92	1.1	0.39
Calcium (Ca)	536.	130.	82.	86.	8.2	4.0
Sodium (Na)	6.5	29.	30.	21.	479.	100.
Chloride (Cl)	12.0	49.	0.6	10.	134.	10.
Fluoride (F)	1.0	0.3	0.43	0.2	0.8	0.2
Sulfate (SO_4)	1224.	232.	68.	72.	188.	16.0
Hydrogen Sulfide (H_2S)	0.5	—	—	—	Trace	Trace
Hardness as $CaCO_3$	1537.	472.	282.	301.	32.0	14.0
Dissolved Solids	2150.	630.	—	328.	1230.	267.
pH	7.3	6.9	7.5	6.8	8.0	6.7

Chemical Constituents as Mg/1

Depth (ft.) - Water-bearing Formation - Yield (gpm)

154-LS-15
110

Depth to Bedrock (ft.)

Domestic Well

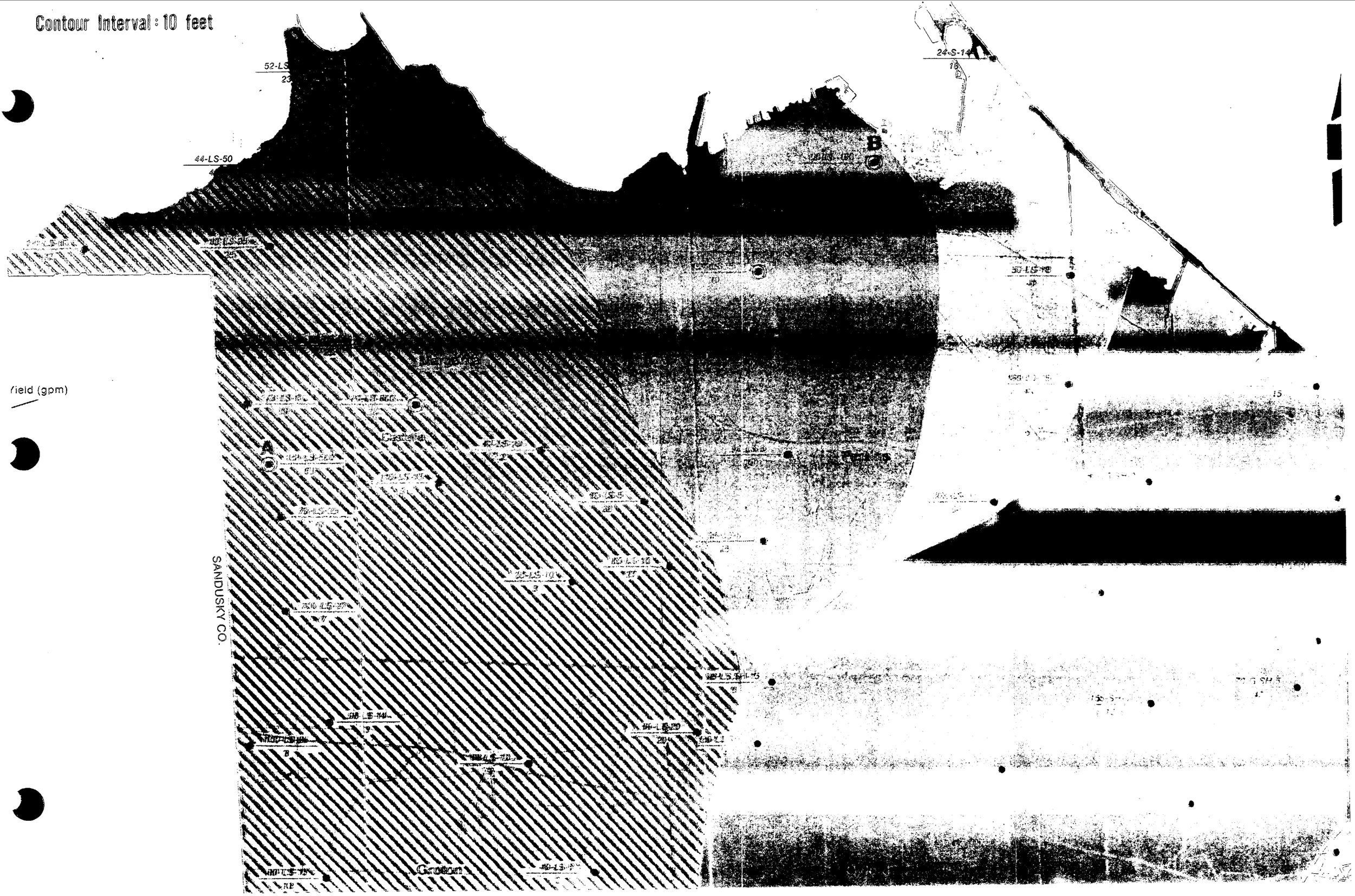
Municipal—Industrial Well

A Chemical Analyses

Formations

SS - Sandstone
SH - Shale
LS - Limestone
SG - Sand and Gravel

Contour Interval: 10 feet



SANDUSKY CO.

LAND USE AND LAND COVER

1 URBAN OR BUILT-UP LAND

11 Residential
12 Commercial and Services
13 Industrial
14 Transportation, Communications and Utilities
15 Industrial and Commercial Complexes
16 Mixed Urban or Built-up Land
17 Other Urban or Built-up Land

2 AGRICULTURAL LAND

21 Cropland and Pasture
22 Orchards, Groves, Vineyards, Nurseries, and Ornamental Horticultural Areas
23 Confined Feeding Operations
24 Other Agricultural Land

3 RANGELAND

31 Herbaceous Rangeland
32 Shrub and Brush Rangeland
33 Mixed Rangeland

4 FOREST LAND

41 Deciduous Forest Land
42 Evergreen Forest Land
43 Mixed Forest Land

5 WATER

51 Streams and Canals
52 Lakes
53 Reservoirs
54 Bays and Estuaries

6 WETLAND

61 Forested Wetland
62 Nonforested Wetland

7 BARREN LAND

71 Dry Salt Flats
72 Beaches
73 Sandy Areas Other than Beaches
74 Bare Exposed Rock
75 Strip Mines, Quarries, and Gravel Pits
76 Transitional Areas
77 Mixed Barren Land

8 TUNDRA

81 Shrub and Brush Tundra
82 Herbaceous Tundra
83 Bare Ground Tundra
84 Wet Tundra
85 Mixed Tundra

For definitions of Level I and Level II categories see U.S. Geological Survey Professional Paper 964, *A Land Use and Land Cover Classification System for Use With Remote Sensor Data, 1976*, by Anerson, J. R., E. E. Hardy, J. T. Roach, and R. E. Witmer. Minimum mapping units are: 4 hectares (10 acres) for Level II categories 11–17, 23–24, 51–54, 75, and urban occurrences of 76; and 16 hectares (40 acres) for all other Level II categories.

SCALE 1:250 000

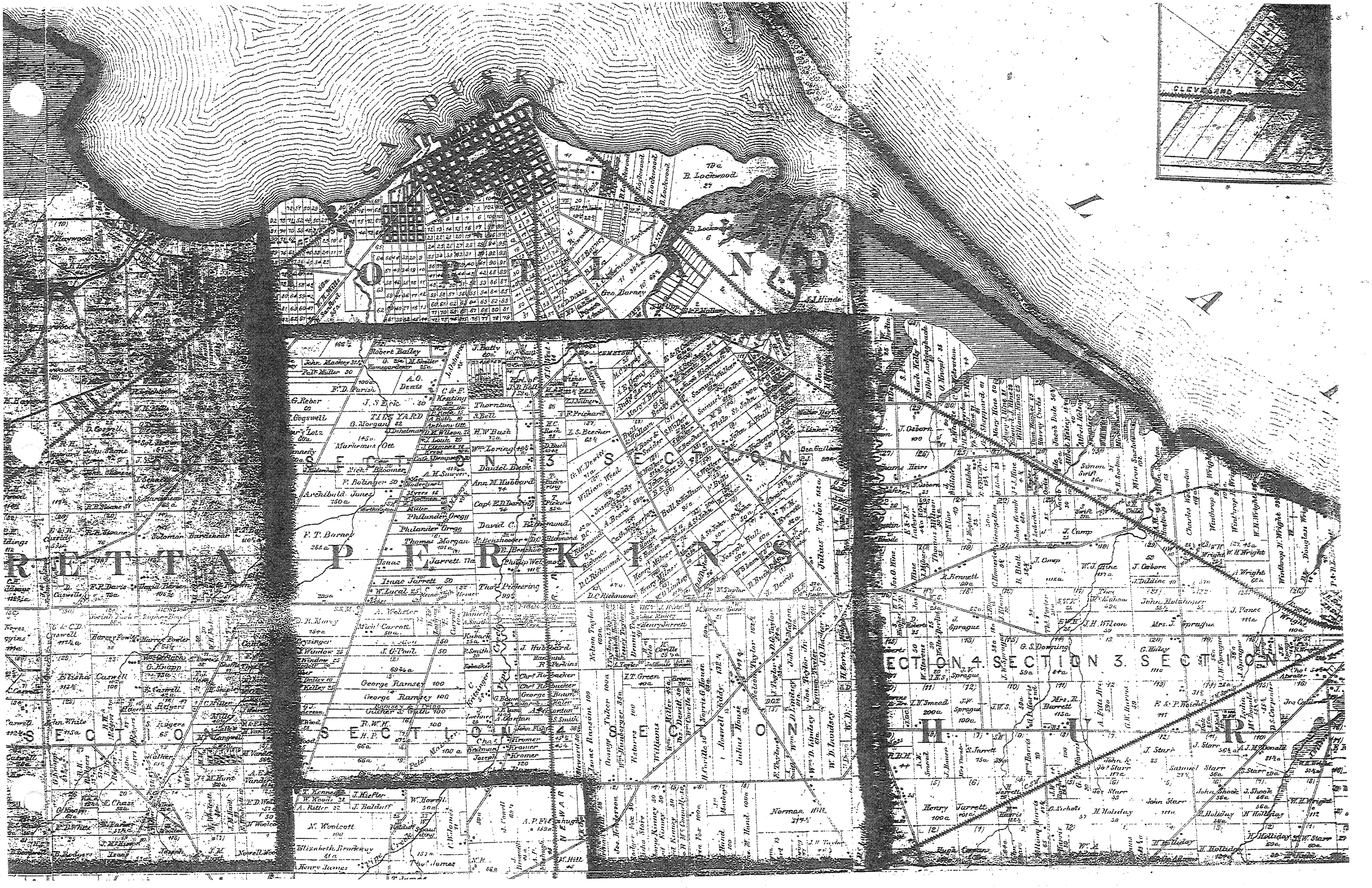
5 0 5
KILOMETERS

5 0 5
MILES

Land use and land cover information compiled from source materials dated 1980 and 1983

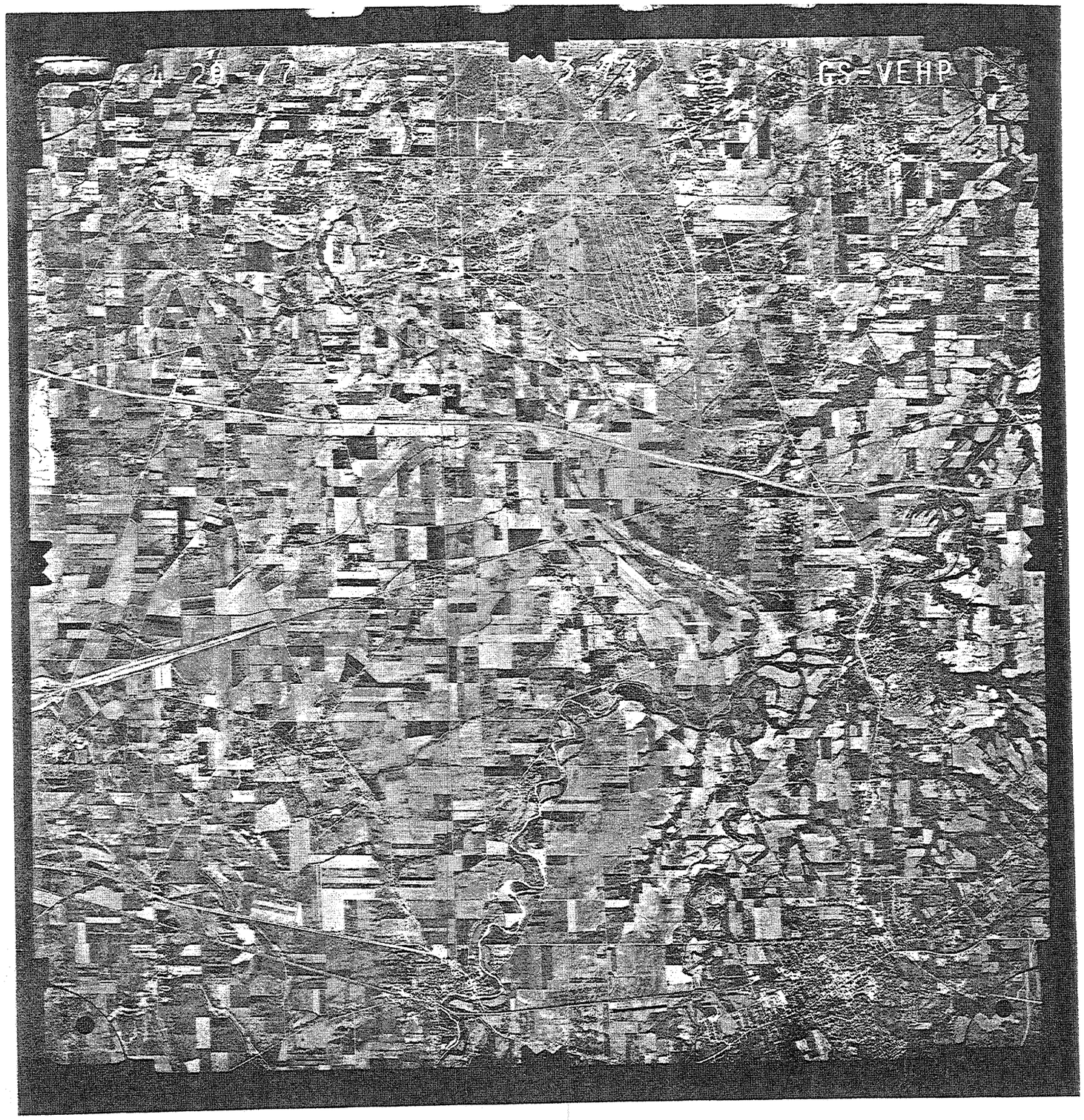
UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

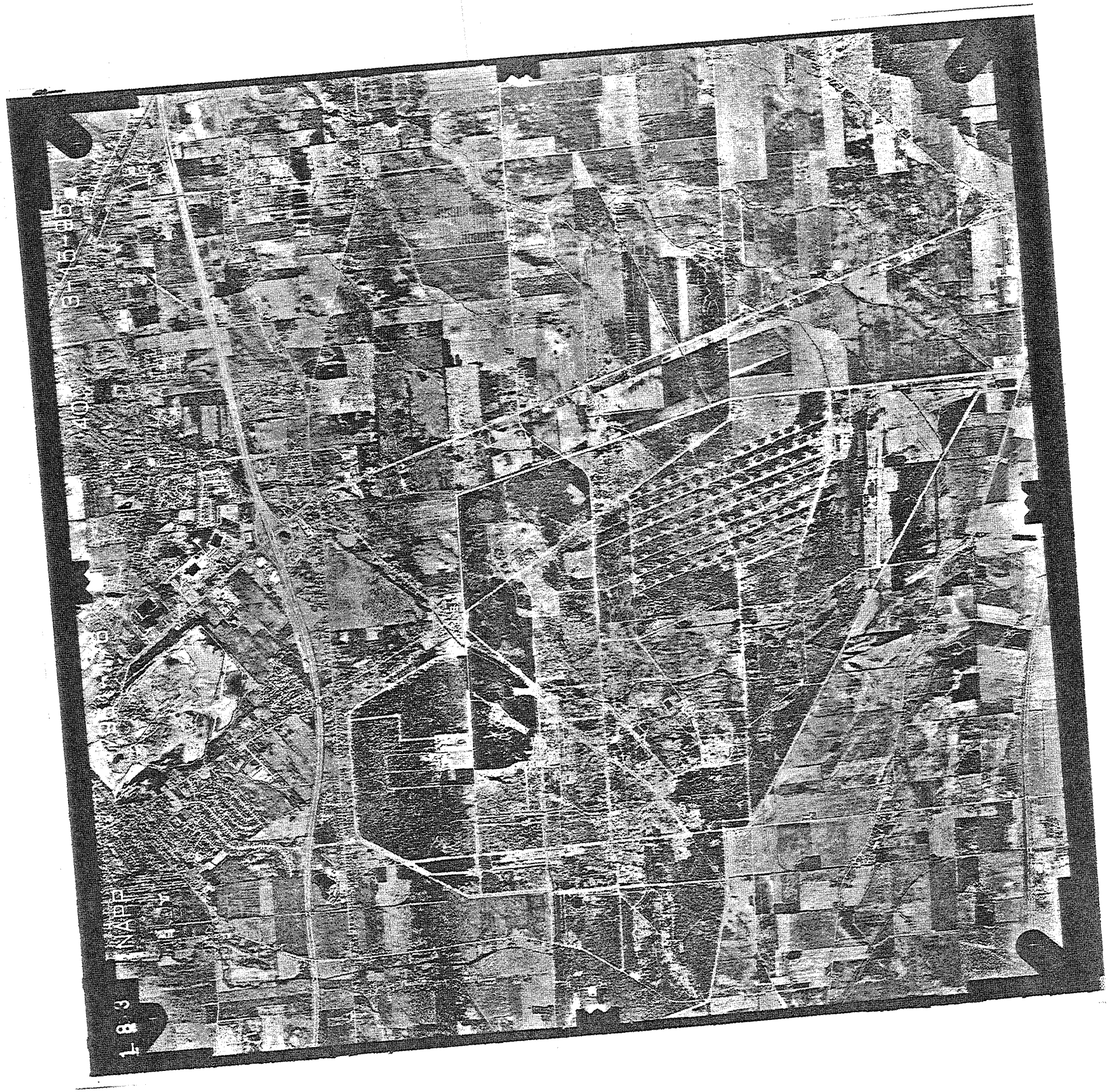
54


SANDUSKY
PORTLAND
PERKINS
MARGARETTA
HURON
CLEVELAND
SECTION 3
SECTION 4
SECTION 4 SECTION 3 SECTION 2
CEMETERY
TILE YARD
NEWARK
B. Lockwood
Geo. Barney
J. J. Hinde
Robert Bailey
John Mackey
F. D. Parish
A. O. Dents
J. S. Eck
G. Morgan
Markemus Ott
Nich. Bloomer
P. Botinger
Archibald Jones
F. T. Barney
Philander Gregg
Thomas Morgan
Isaac Jarrett
Thornton
S. Bell
H. W. Bush
Wm. Loring
Daniel Buck
Ann M. Hubbard
David C. Richmond
E. Benshooter
Philip Wellmore
Thos. Pickering
L. S. Beecher
D. C. Richmond
Julius Taylor
Bull & Hallam
Joseph Hull
D. Buck
J. Devitt
J. Osborn
Simon Swift
Jacob Dale
Charles Woolverton
Winthrop H. Wright
J. Camp
W. J. Hine
R. Bennett
J. Sprague
J. H. Wilson
Mrs. J. Sprague
J. Vance
G. S. Downing
G. Haley
J. W. Smead
Mrs. R. Barrett
J. Starr
Samuel Starr
John Starr
John Shook
J. Shook
H. Holiday
Henry Jarrett
George Ramsey
J. Hubbard
J. T. Green
Nelson Taylor
Julius House
Roswell Eddy
W. D. Lindsey
Isaac Ransom
Williams
Norman Hill
N. Woolcott
Elizabeth Brockway
Henry James
J. Kiefler
J. Balduff
W. Howell
A. P. Fitzhugh
Elisha Caswell
D. Caswell
F. P. Davis
E. Chase
E. D. White
S. Rogers
Solomon Bardshear

5-7-56
2B-12GS-CBR

3-18-69
2-78
GS-VCCI


4-29-77
GS-VEHP


1 8 3
NAPP
6 1 0 1 8
6 1 0 1 8

ERIIS REPORT OVERVIEW

The following features are available for an ERIIS report:

* Database Report
    * Statistical Profile
    * Database Records
* Related Maps
    * Digital Custom Plotted Map
    * Sanborn Fire Insurance Map(s)
    * Topographical Map(s)

Statistical Profile

The statistical profile is an at-a-glance numeric summary of the databases searched for your ERIIS Report.

Database Records

The detailed federal and state database information indicates potential and actual environmental threats within the study radius. These records are sorted by their distance from the study site.

Digital Custom Map

The digital custom map is cross referenced with the database records. The cross-in-circle in the center of the map represents the study site. The red circles represent distances from the study site. The plottable sites in the report are distinguished on the map by symbols of different shape and color.

Historic Fire Insurance Maps

The ERIIS collection of historical Sanborn Fire Insurance Maps covers 14,000 cities and towns. These maps may indicate prior use of the study site. If no maps are available for the study site, a notice to that effect is included. This notice should serve as evidence of due diligence.

Topographical Map

USGS topographical maps show natural and man-made features as well as the shape and elevation of the terrain. The 7.5 minute quad maps are produced at a scale of 1:24,000, or one inch represents 2,000 feet.

If you have any questions about this report,
please contact ERIIS Customer Service at 1-800-989-0403

ERIIS CORRIDOR STATISTICAL PROFILE
State: OH

ERIIS Report #317596A Mar 4, 1999

Site:
SOUTH OF SANDUSKY
SANDUSKY, OH

Database	Plotted Sites
NPL	0
RCRIS_CA	0
RCRIS_TS	1
CERCLIS	0
NFRAP	1
RCRIS_LG	0
RCRIS_SG	1
ERNS	0
HWS	1
LRST	6
SWF	0
RST	9
	19

NR in a radius count indicates that the database cannot be reported by this search criteria due to insufficient and/or inaccurate addresses reported by a federal/state agency.

NPL
Date of Data: 10/14/1998
'ease Date: 10/20/1998
e on System: 11/20/1998
Environmental Protection Agency
.fice of Solid Waste and Emergency Response
703/603-8881
Date of Last Contact: 11/02/1998

National Priorities List

The NPL Report is an EPA listing of the nation's worst uncontrolled or abandoned hazardous waste sites. NPL sites are targeted for possible long-term remedial action under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) of 1980. In addition, the NPL Report includes information concerning cleanup agreements between EPA and Potentially Responsible Parties (commonly called Records of Decision, or RODS), any liens filed against contaminated properties, as well as the past and current EPA budget expenditures tracked within the Superfund Consolidated Accomplishments Plan (SCAP).

RCRIS_CA
Date of Data: 07/01/1998
Release Date: 09/18/1998
Date on System: 12/04/1998
US Environmental Protection Agency
Office of Solid Waste and Emergency Response
800/424-9346
Date of Last Contact: 11/04/1998

Resource Conservation and Recovery Information System - TSD's Subject to Corrective Action

The RCRIS_CA Report contains information pertaining to hazardous waste treatment, storage , and disposal Facilities (RCRA TSD's) which have conducted, or are currently conducting, a corrective action(s) as regulated under the Resource Conservation and Recovery Act. The following information is included within the RCRIS_CA Report:
- Information pertaining to the status of facilities tracked by the RCRA Administrative Action Tracking System (RAATS)
- Inspections & evaluations conducted by federal and state agencies
- All reported facility violations, the environmental statute(s) violated, and any proposed & actual penalties
- Information pertaining to corrective actions undertaken by the facility or EPA

RCRIS_TS
Date of Data: 07/01/1998
Release Date: 09/18/1998
Date on System: 12/04/1998
US Environmental Protection Agency
Office of Solid Waste and Emergency Response
800/424-9346
Date of Last Contact: 11/04/1998

Resource Conservation and Recovery Information System - Non-Corrective Action TSD Facilities

The RCRIS_TS Report contains information pertaining to facilities which either treat, store, or dispose of EPA regulated hazardous waste. The following information is also included in the RCRIS_TS Report:

- Information pertaining to the status of facilities tracked by the RCRA Administrative Action Tracking System (RAATS)
- Inspections & evaluations conducted by federal and state agencies
- All reported facility violations, the environmental statute(s) violated, and any proposed & actual penalties

'LIS
of Data: 10/14/1998
ase Date: 10/20/1998
Date on System: 11/13/1998
US Environmental Protection Agency
Office of Solid Waste and Emergency Response
703/603-8881
Date of Last Contact: 11/02/1998

Comprehensive Environmental Response, Compensation, and Liability Information System

The CERCLIS Database is a comprehensive listing of known or suspected uncontrolled or abandoned hazardous waste sites. These sites have either been investigated, or are currently under investigation by the U.S. EPA for the release, or threatened release of hazardous substances. Once a site is placed in CERCLIS, it may be subjected to several levels of review and evaluation, and ultimately placed on the National Priorities List (NPL). In addition to site events and milestone dates, the CERCLIS Report also contains financial information from the Superfund Consolidated Accomplishments Plan (SCAP).

NFRAP
Date of Data: 10/14/1998
Release Date: 10/20/1998
Date on System: 11/13/1998
US Environmental Protection Agency
Office of Solid Waste and Emergency Response
703/603-8881
Date of Last Contact: 11/02/1998

No Further Remedial Action Planned Sites

The No Further Remedial Action Planned Report (NFRAP), also known as the CERCLIS Archive, contains information pertaining to sites which have been removed from the U.S. EPA's CERCLIS Database. NFRAP sites may be sites where, following an initial investigation, either no contamination was found, contamination was removed quickly without need for the site to be placed on the NPL, or the contamination was not serious enough to require federal Superfund action or NPL consideration.

RCRIS_LG
Date of Data: 07/01/1998
Release Date: 09/18/1998
Date on System: 12/04/1998
US Environmental Protection Agency
Office of Solid Waste and Emergency Response
800/424-9346
Date of Last Contact: 11/04/1998

Resource Conservation and Recovery Information System - Large Quantity Generators

The RCRIS_LG Report contains information pertaining to facilities which either generate more than 1000kg of EPA regulated hazardous waste per month, or meet other applicable requirements of the Resource Conservation And Recovery Act. The following information is also included in the RCRIS_LG Report:
- Information pertaining to the status of facilities tracked by the RCRA Administrative Action Tracking System (RAATS)
- Inspections & evaluations conducted by federal and state agencies
- All reported facility violations, the environmental statute(s) violated, and any proposed & actual penalties
- Information pertaining to corrective actions undertaken by the facility or EPA

RCRIS_SG
Date of Data: 07/01/1998
Release Date: 09/18/1998
ate on System: 12/04/1998
S Environmental Protection Agency
Office of Solid Waste and Emergency Response
800/424-9346
Date of Last Contact: 11/04/1998

Resource Conservation and Recovery Information System - Small Quantity Generators

The RCRIS_SG Report contains information pertaining to facilities which either generate between 100kg and 1000kg of EPA regulated hazardous waste per month, or meet other applicable requirements of the Resource Conservation And Recovery Act. On advice of the U.S. EPA, ERIIS does not report so-called "RCRA Protective Filers." Protective Filers, commonly called Conditionally Exempt Small Quantity Generators (CESQG's), are facilities that have completed RCRA notification paperwork, but are not, in fact, subject to RCRA regulation. The determination of CESQG status is made by the U.S. EPA. The following information is also included in the RCRIS_SG Report:
- Information pertaining to the status of facilities tracked by the RCRA Administrative Action Tracking System (RAATS)
- Inspections & evaluations conducted by federal and state agencies
- All reported facility violations, the environmental statute(s) violated, and any proposed & actual penalties
- Information pertaining to corrective actions undertaken by the facility or EPA

ERNS
Date of Data: 10/08/1998
Release Date: 10/09/1998
Date on System: 11/13/1998
US Environmental Protection Agency
Office of Solid Waste and Emergency Response
202/260-2342
Date of Last Contact: 10/19/1998

Emergency Response Notification System

ERNS is a national computer database system that is used to store information concerning the sudden and/or accidental release of hazardous substances, including petroleum, into the environment. The ERNS Reporting System contains preliminary information on specific releases, including the spill location, the substance released, and the responsible party. Please note that the information in the ERNS Report pertains only to those releases that occured between January 1, 1997 and October 8, 1998.

HWS
Date of Data: 01/02/1998
Release Date: 01/02/1998
Date on System: 02/27/1998
OH Environmental Protection Agency
Emergency and Remedial Response Division
614/644-2924
Date of Last Contact: 08/19/1998

Ohio Master Sites List

The Ohio Master Sites List tracks sites in Ohio where hazardous waste has been found or where there are any known, suspected, or likely release of such wastes from a facility.

RST
e of Data: 10/01/1998
ase Date: 11/20/1998
e on System: 12/04/1998
OH Office of the State Fire Marshal
Bureau of Licensing and Certification
614/752-7924
Date of Last Contact: 12/01/1998

Ohio Leaking Underground Storage Tank Report

The Ohio Leaking Underground Storage Tank Report (formerly The Petroleum Underground Storage Tank Release Incident Report, or PUSTR) is a comprehensive listing of all reported active and inactive leaking underground storage tanks located within the State of Ohio.

SWF
Date of Data: 12/31/1997
Release Date: 02/01/1998
Date on System: 03/11/1998
OH Environmental Protection Agency
Division of Solid Waste Management
614/644-3135
Date of Last Contact: 10/16/1998

Ohio Solid Waste Facility List

The Ohio Solid Waste Facility List contains information pertaining to all active and closed permitted solid waste landfills and processing facilities within the State of Ohio.

RST
Date of Data: 10/01/1998
Release Date: 10/01/1998
Date on System: 10/01/1998
OH Office of the State Fire Marshal
Bureau of Licensing and Certification
614/752-7924
Date of Last Contact: 10/26/1998

Ohio Underground Storage Tank Report

The Ohio Underground Storage Tank Report is a comprehensive listing of all registered active and inactive underground storage tanks located within the State of Ohio.

ERIIS SUMMARY OF PLOTTABLE SITES

ERIIS Report #317596A Mar 4, 1999

ERIIS ID.	FACILITY/ADDRESS	DATABASE	DISTANCE FROM SITE	MAP ID
'05009583	HEMMINGER FARMS 1118 FOX RD SANDUSKY, OH 44870-8367 COUNTY: ERIE	LRST	Corridor	9583
39005013250	NASA 6100 CLEVELAND AVE SANDUSKY, OH 44870 COUNTY: ERIE	LRST	Corridor	3250
39005013251	NASA 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	LRST	Corridor	3251
39013000073	NASA LERC PLUM BROOK STATION 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	RCRIS_TS	Corridor	73
39039000797	NASA PLUM BROOK 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	NFRAP	Corridor	797
39005013257	NASA PLUM BROOK STATION 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	LRST	Corridor	3257
39010005044	NASA PLUM BROOK STATION 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	RST	Corridor	5044
39010005045	NASA PLUM BROOK STATION 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	RST	Corridor	5045
39010005046	NASA PLUM BROOK STATION 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	RST	Corridor	5046
'0005047	NASA PLUM BROOK STATION 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	RST	Corridor	5047
39010005048	NASA PLUM BROOK STATION 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	RST	Corridor	5048
39010005049	NASA PLUM BROOK STATION 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	RST	Corridor	5049
39010005050	NASA PLUM BROOK STATION 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	RST	Corridor	5050
39010005051	NASA PLUM BROOK STATION 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	RST	Corridor	5051
39010005052	NASA PLUM BROOK STATION 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	RST	Corridor	5052
39005013258	NASA PLUMBROOK STATION 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	LRST	Corridor	3258
39005014705	PERKINS TRANSP. BUS GARAGE TAYLOR RD AT COLUMBUS AVE SANDUSKY, OH 44870 COUNTY: ERIE	LRST	Corridor	4705
39050000278	US NASA PLUM BROOK TAYLOR & COLUMBUS RD SANDUSKY, OH 44870 COUNTY: ERIE	HWS	Corridor	278
'8010305	USDOI SANDUSKY BIOLOGICAL STATION 6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	RCRIS_SG	Corridor	305

ERIIS ID EPA ID	FACILITY	ADDRESS	RAATS ISSUE DATE RAATS ACTION/STATUS RAATS PENALTIES	DISTANCE FROM SITE	DIRECTION FROM SITE	MAP ID
39013000073 OH3800015379	NASA LERC PLUM BROOK STATION COUNTY: ERIE	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329	FACILITY NOT REPORTED IN RAATS	Corridor Site		73

FACILITY VIOLATIONS

	DATE DETERMINED:	DATE RESOLVED:	AREA OF VIOLATION:
1.	08/24/1989	12/05/1991	GENERATOR-ALL REQUIREMENTS
2.	08/24/1989	12/05/1991	GENERATOR-LAND BAN REQUIREMENTS
3.	02/18/1992	05/20/1992	GENERATOR-ALL REQUIREMENTS

FACILITY EVALUATIONS

	EVALUATION DATE:	EVALUATING AGENCY:	TYPE OF EVALUATION:	AREA(S) OF EVALUATION:
1.	08/24/1989	STATE	COMPLIANCE EVALUATION INSPECTION	GENERATOR-ALL REQUIREMENTS GENERATOR-LAND BAN REQUIREMENTS
2.	02/18/1992	STATE	COMPLIANCE EVALUATION INSPECTION	GENERATOR-ALL REQUIREMENTS GENERATOR-LAND BAN REQUIREMENTS

FACILITY ENFORCEMENTS

	ENFORCEMENT DATE:	ENFORCING AGENCY:	TYPE OF ACTION:	PENALTY(S):
1.	09/21/1990	EPA	WRITTEN, INFORMAL ADMINISTRATIVE ACTION	
2.	02/28/1992	STATE	WRITTEN, INFORMAL ADMINISTRATIVE ACTION	

ERIIS ID EPA ID	FACILITY	ADDRESS	DISTANCE FROM SITE	DIRECTION FROM SITE	MAP ID
39039000797 OH3800015379	NASA PLUM BROOK COUNTY: ERIE	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329	Corridor		797

SITE EVENT(S)	COMPLETE DATE
DISCOVERY	08-01-1983
PRELIMINARY ASSESSMENT	08-01-1984
STATE, FUND FINANCED	09-30-1994

ERIIS ID EPA ID	FACILITY	ADDRESS	RAATS ISSUE DATE RAATS ACTION/STATUS RAATS PENALTIES	DISTANCE FROM SITE	DIRECTION FROM SITE	MAP ID
39008010305 OH3143690250	USDOI SANDUSKY BIOLOGICAL STATION COUNTY: ERIE	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329	FACILITY NOT REPORTED IN RAATS	Corridor Site		305

ERIIS ID US EPA ID. OH EPA ID.	FACILITY	ADDRESS	PRIORITY	DELISTED(Y/N)	MAP ID
39050000278 OH3800015379 322-0552	US NASA PLUM BROOK DISTANCE FROM SITE: Corridor Site DIRECTION FROM SITE:	TAYLOR & COLUMBUS RD SANDUSKY, OH 44870 COUNTY: ERIE	NO PRIORITY	NOT REPORTED	278

ERIIS ID	FACILITY	ADDRESS	COUNTY	DISTANCE FROM SITE	DIRECTION FROM SITE	MAP ID
39005009583	HEMMINGER FARMS	1118 FOX RD SANDUSKY, OH 44870-8367	ERIE	Corridor Site		9583

INCIDENT NO.	STATUS	LUST TRUST FUND (LTF) ELIGIBILITY
220219400	NO FURTHER ACTION	ELIGIBLE FOR LTF OVERSIGHT AND/OR SPENDING - SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM A REGULATED UST.

39005014705	PERKINS TRANSP. BUS GARAGE	TAYLOR RD AT COLUMBUS AVE SANDUSKY, OH 44870	ERIE	Corridor Site		4705

INCIDENT NO.	STATUS	LUST TRUST FUND (LTF) ELIGIBILITY
228167200	REPORTED	CLOSURE OF AN UNDERGROUND STORAGE TANK.

39005013250	NASA	6100 CLEVELAND AVE SANDUSKY, OH 44870	ERIE	Corridor Site		3250

INCIDENT NO.	STATUS	LUST TRUST FUND (LTF) ELIGIBILITY
22936903	INITIAL CORRECTIVE ACTION	SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM AN UST NOT REGULATED BY RCRA SUBTITLE I.
22936902	NO FURTHER ACTION	ELIGIBLE FOR LTF OVERSIGHT AND/OR SPENDING - SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM A REGULATED UST.

39005013251	NASA	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329	ERIE	Corridor Site		3251

INCIDENT NO.	STATUS	LUST TRUST FUND (LTF) ELIGIBILITY
22936901	NO FURTHER ACTION	ELIGIBLE FOR LTF OVERSIGHT AND/OR SPENDING - SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM A REGULATED UST.
22936907	NO FURTHER ACTION	ELIGIBLE FOR LTF OVERSIGHT AND/OR SPENDING - SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM A REGULATED UST.
22936905	INITIAL CORRECTIVE ACTIONS	SUSPECTED OR CONFIRMED FOR RELEASE OF A HAZARDOUS SUBSTANCE FROM A REGULATED UST.
22936906	INITIAL CORRECTIVE ACTIONS	SUSPECTED OR CONFIRMED FOR RELEASE OF A HAZARDOUS SUBSTANCE FROM A REGULATED UST.
22936908	INITIAL CORRECTIVE ACTIONS	SUSPECTED OR CONFIRMED FOR RELEASE OF A HAZARDOUS SUBSTANCE FROM A REGULATED UST.
22936904	INITIAL CORRECTIVE ACTIONS	SUSPECTED OR CONFIRMED FOR RELEASE OF A HAZARDOUS SUBSTANCE FROM A REGULATED UST.

39005013257	NASA PLUM BROOK STATION	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329	ERIE	Corridor Site		3257

INCIDENT NO.	STATUS	LUST TRUST FUND (LTF) ELIGIBILITY
22936910	NO FURTHER ACTION	CLOSURE OF AN UNDERGROUND STORAGE TANK.

39005013258	NASA PLUMBROOK STATION	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329	ERIE	Corridor Site		3258

INCIDENT NO.	STATUS	LUST TRUST FUND (LTF) ELIGIBILITY
22936911	NO FURTHER ACTION	CLOSURE OF AN UNDERGROUND STORAGE TANK.

ERIIS ID / FACILITY ID	FACILITY	ADDRESS	OWNER ADDRESS	MANAGER	MAP ID
39010005044 / 0-227802	NASA PLUM BROOK STATION DISTANCE FROM SITE: Corridor Site DIRECTION FROM SITE:	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	NASA LEWIS RESEARCH CENTER 21000 BROOKPARK RD CLEVELAND, OH 44135	PETER W. MCCALLUM (216) 433-8852	5044

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
28	REMOVED	NOT REPORTED	3,000	55	BARE STEEL
29	REMOVED	NOT REPORTED	770	33	BARE STEEL
30	REMOVED	NOT REPORTED	770	33	BARE STEEL
31	REMOVED	NOT REPORTED	770	33	BARE STEEL

39010005045 / 0-227803	NASA PLUM BROOK STATION DISTANCE FROM SITE: Corridor Site DIRECTION FROM SITE:	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	NASA LEWIS RESEARCH CENTER 21000 BROOKPARK RD CLEVELAND, OH 44135		5045

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
32	REMOVED	USED OIL	1,500	55	BARE STEEL

39010005046 / 0-227804	NASA PLUM BROOK STATION DISTANCE FROM SITE: Corridor Site DIRECTION FROM SITE:	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	NASA LEWIS RESEARCH CENTER 21000 BROOKPARK RD CLEVELAND, OH 44135		5046

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
201	CURRENTLY IN USE	GASOLINE	8,000	8	FIBERGLASS
202	CURRENTLY IN USE	DIESEL	8,000	8	FIBERGLASS

39010005047 / 0-227805	NASA PLUM BROOK STATION DISTANCE FROM SITE: Corridor Site DIRECTION FROM SITE:	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	NASA LEWIS RESEARCH CENTER 21000 BROOKPARK RD CLEVELAND, OH 44135		5047

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
37	REMOVED	NOT REPORTED	12,000	18	BARE STEEL
38	REMOVED	NOT REPORTED	12,000	18	BARE STEEL

39010005048 / 0-227806	NASA PLUM BROOK STATION DISTANCE FROM SITE: Corridor Site DIRECTION FROM SITE:	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	NASA LEWIS RESEARCH CENTER 21000 BROOKPARK RD CLEVELAND, OH 44135		5048

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
39	REMOVED	UNK	250	UNK	UNKNOWN

39010005049 / 0-227807	NASA PLUM BROOK STATION DISTANCE FROM SITE: Corridor Site DIRECTION FROM SITE:	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	NASA LEWIS RESEARCH CENTER 21000 BROOKPARK RD CLEVELAND, OH 44135		5049

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
23	REMOVED	USED OIL	500	36	BARE STEEL

39010005050 / 0-227808	NASA PLUM BROOK STATION DISTANCE FROM SITE: Corridor Site DIRECTION FROM SITE:	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	NASA LEWIS RESEARCH CENTER 21000 BROOKPARK RD CLEVELAND, OH 44135		5050

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
24	REMOVED	USED OIL	1,000	29	BARE STEEL

ERIIS ID / FACILITY ID	FACILITY	ADDRESS	OWNER ADDRESS	MANAGER	MAP ID
39010005051 / 0-227809	NASA PLUM BROOK STATION DISTANCE FROM SITE: Corridor Site DIRECTION FROM SITE:	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	NASA LEWIS RESEARCH CENTER 21000 BROOKPARK RD CLEVELAND, OH 44135		5051

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
26	REMOVED	NOT REPORTED	11,000	29	BARE STEEL
27	REMOVED	NOT REPORTED	11,000	29	BARE STEEL

ERIIS ID / FACILITY ID	FACILITY	ADDRESS	OWNER ADDRESS	MANAGER	MAP ID
39010005052 / 0-227810	NASA PLUM BROOK STATION DISTANCE FROM SITE: Corridor Site DIRECTION FROM SITE:	6100 COLUMBUS AVE SANDUSKY, OH 44870-8329 COUNTY: ERIE	NASA LEWIS RESEARCH CENTER 21000 BROOKPARK RD CLEVELAND, OH 44135		5052

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
35	REMOVED	GASOLINE	9,000	55	BARE STEEL

Unplottable Sites

The remaining report pages list additional environmental sites that have been selected based on geographic criteria unique to your study site. They are classified as "unplottable sites" and require further investigation to assess their potential impact on your site.

How to Evaluate Unplottable Sites

Step 1
Streets Within the Radius: the following page is an alphabetical index of all streets that intersect or are contained within the largest study radius (usually one mile).

Step 2
Cross-Reference: use the "Streets Within the Radius" index to cross-reference the unplottable sites. For example, if Maple Avenue and Oak Avenue are listed in the street index, then any unplottable sites with a Maple Avenue or Oak Avenue address should be checked for possible impact on study site.

Questions on ERIIS' Proprietary Geocoding?

We're happy to answer any questions you might have about our data processing and **point-geocoding** (assigning a latitude and longitude to each address). Just give us a call on our toll-free number at (800) 989-0402 and let us know what state you're calling from. Our customer service staff is available from 8 a.m. to 8 p.m. (EST).

The ASTM Standard Practice For Environmental Site Assessments

As stated in the recently published **Standard Practice for Environmental Site Assessments: Phase I Environmental Site Assessment Process** (E1527) by the American Society for Testing and Materials (ASTM):

> "For large databases with numerous facility records (such as RCRA hazardous waste generators and registered underground storage tanks), the records are not practically reviewable unless they can be obtained from the source agency in the smaller geographic area of ZIP code (3.3.24)."

Therefore, this Report contains information available by latitude/longitude or by ZIP code. If your research requires environmental records for which only city or county information is available (i.e., no valid street or ZIP code) ERIIS will include this data at no extra charge.

ERIIS LIST OF STREETS IN THE RADIUS

ERIIS Report #317596A Mar 4, 1999

STREET NAME
BIRCHWOOD DR
E BOGART ROAD
W BOGART ROAD
BOSTON ROAD
BOTAY ROAD
BOUY ROAD
BOX FACTORY ROAD
CAMBRIDGE CIR
CAMPBELL ST
CLARK ROAD
COLUMBUS AVE
COUNTRY PLACE DR
DALLAS AVE
DEERFIELD LANE
DENVER AVE
FOX ROAD
HARTFORD AVE
INDIANA AVE
INDUSTRIAL PKY
KIRKWOOD TER
LAKE CT
S LAKE WILMER DR
LINDEN WAY
LINDEN WAY DR
LISBON CIR
LONDON ROAD
N MAGAZINE ROAD
MAINTENANCE ROAD
MASON ROAD
MEMPHIS AVE
MICHIGAN AVE
MILAN ROAD
NORMANDY CT
OHIO TER
PARKWAY S
PATROL ROAD
PATTEN TRACT ROAD
PENNSYLVANIA AVE
PENTOLITE ROAD
RANSOM ROAD
RICHMOND CIR
SCHEID ROAD
SCHENK ROAD
SHORT CUT ROAD
STATE HWY 2
SWANO DR
TAYLOR ROAD
US HWY 250
VIRGINIA AVE
WALT LAKE TRL

ERIIS SUMMARY OF UNPLOTTABLE SITES
(Facilities sorted alphabetically within ZIP Code)

ERIIS Report #317596A | Mar 4, 1999

ERIIS ID.	FACILITY/STREET	CITY/STATE/ZIP/COUNTY	DATABASE
)5021849	BOB GARBA-FRANKLIN FLATS 90601 RIVER VIEW DR	HURON, OH 44839 COUNTY: ERIE	LRST
39005022207	CONSOLIDATED ELECTRIC 1901 SAWMILL INDUSTRIAL PKWY	HURON, OH 44839 COUNTY: ERIE	LRST
39010004952	DANIEL & CAROL LAPP 2112 CLEVELAND RD	HURON, OH 44839 COUNTY: ERIE	RST
39005022311	DANIEL LAPP 2112 CLEVELAND AVE	HURON, OH 44839 COUNTY: ERIE	LRST
39010019398	DENNIS MICHELSON 2416 CLEVELAND SANDUSY RD	HURON, OH 44839 COUNTY: ERIE	RST
39010005028	ERIE COUNTY LANDFILL HOOVER RD	HURON, OH 44839 COUNTY: ERIE	RST
39005022468	ERIE CTY LANDFILL HOOVER RD	HURON, OH 44839 COUNTY: ERIE	LRST
39005022729	GASTOWN 3674 2103 CLEVELAND	HURON, OH 44839 COUNTY: ERIE	LRST
39005022843	GTE NORTH, INC. MAIN ST	HURON, OH 44839 COUNTY: ERIE	LRST
39010005038	GTE NORTH, INC. MAIN & SHIRLEY	HURON, OH 44839 COUNTY: ERIE	RST
39018000056	HURON LIME COMPANY LANDFILL #1 RIVER RD	HURON, OH 44839 COUNTY: ERIE	SWF
3000052	HURON LIME COMPANY LANDFILL #2 PO BOX 451	HURON, OH 44839-0451 COUNTY: ERIE	SWF
39005023854	PRESTON TRUCKING CO 1711 SAWMILL INDUSTRIAL PKWY	HURON, OH 44839 COUNTY: ERIE	LRST
39010004878	RYE BEACH HY-MILER 2026 CLEVELAND RD	HURON, OH 44839 COUNTY: ERIE	RST
39005025012	YELLOW FREIGHT RYE BEACH RD	HURON, OH 44839 COUNTY: ERIE	LRST
39005021816	BFI SR 101	SANDUSKY, OH 44870 COUNTY: ERIE	LRST
39010004932	C.S.C. OIL CO. #484 607 PERKINS AVE	SANDUSKY, OH 44870 COUNTY: ERIE	RST
39005022026	CAUSEWAY DR LIFT STA 1300 CAUSEWAY DR	SANDUSKY, OH 44870 COUNTY: ERIE	LRST
39010004967	CEDAR POINT #1 CAUSEWAY DR	SANDUSKY, OH 44870 COUNTY: ERIE	RST
39005022195	COMMODORE PERRY SVC PLAZA MILE POST 100.0 SOUTH SIDE	SANDUSKY, OH 44870 COUNTY: ERIE	LRST
39008008756	ERIE COUNTY SCHOOLS 7142 TAYLOR-COLUMBUS AVE	SANDUSKY, OH 44870 COUNTY: ERIE	RCRIS_SG
39005022515	FARWELL ST LIFT STATION FARWELL ST	SANDUSKY, OH 44870 COUNTY: ERIE	LRST
39005022720	GAS AMERICA 7065 US RT 30	SANDUSKY, OH 44870 COUNTY: ERIE	LRST
8009438	GORDON FOOD SERVICE INC 1415 HOLLAND RD	PERRYSBURG, OH 44870 COUNTY: ERIE	RCRIS_SG

ERIIS ENVIRONMENTAL DATA REPORT
RESOURCE CONSERVATION AND RECOVERY INFORMATION SYSTEM
RCRIS_SG - UNPLOTTABLE SITES

ERIIS Report #317596A

Mar 4, 1999

ERIIS ID EPA ID	FACILITY	ADDRESS	RAATS ISSUE DATE RAATS ACTION/STATUS RAATS PENALTIES
39008004325 OHD981786650	NORTHCOAST AUTO BODY COUNTY: ERIE	1944 ONE HALF MILAN RD SANDUSKY, OH 44870	FACILITY NOT REPORTED IN RAATS
39008004832 OHD982211450	SOHIO OIL CO NO 06672 COUNTY: ERIE	RTE 2 AND RTE 250 SANDUSKY, OH 44870	FACILITY NOT REPORTED IN RAATS
39008008756 OHR000003673	ERIE COUNTY SCHOOLS COUNTY: ERIE	7142 TAYLOR-COLUMBUS AVE SANDUSKY, OH 44870	FACILITY NOT REPORTED IN RAATS
39008009438 OHR000025809	GORDON FOOD SERVICE INC COUNTY: ERIE	1415 HOLLAND RD PERRYSBURG, OH 44870	FACILITY NOT REPORTED IN RAATS

ERIIS ENVIRONMENTAL DATA REPORT
EMERGENCY RESPONSE NOTIFICATION SYSTEM
ERNS - UNPLOTTABLE SITES

ERIIS Report #317596A

Mar 4, 1999

ERIIS ID REPORT NUMBER SOURCE AGENCY	SPILL CITY, STATE, ZIP CODE SPILL COUNTY	DISCHARGER NAME ORGANIZATION ADDRESS	MEDIA AFFECTED LAND	WATER	AIR	GRND WATER	FACILITY	SPILL DATE WATER WAY AFFECTED
39002000030 420277 NATL. RESPONSE CTR	SANDUSKY, OH 44870 ERIE	JIMS AUTO SALVAGE 1707 GEORGE STREET SANDUSKY, OH 44870	N	N	N	N	N	01/17/1998 STORM DRAIN/SOIL

LOCATION: Superior Street / Dead End, North Side Of Venice Road
DESCRIPTION: Caller States: Company Towed Many Vehicles Over 2 Days, Some Of The Vehicles Being Towed Spilled Gasoline And Motor Oil Onto The Roadway
MATERIAL SPILLED: Oil, Misc: Motor QTY: 0 Unk LBS: 0 QTY IN WATER: 0 Unk
Oil: Diesel QTY: 0 Unk LBS: 0 QTY IN WATER: 0 Unk
Gasoline: Automotive (4.23g Pb/g QTY: 0 Unk LBS: 0 QTY IN WATER: 0 Unk
ACTIONS TAKEN: None / Police Were Onscene, Were Going To Make Company Clean Up / Nothing Has Been Done To Date
MISCELLANEOUS: Sandusky Bay Is .5 Miles Away / Some Product Has Reached A Storm Drain And It Has Been Raining

ERIIS ENVIRONMENTAL DATA REPORT
OHIO MASTER SITES LIST
HWS - UNPLOTTABLE SITES

ERIIS Report #317596A

Mar 4, 1999

ERIIS ID US EPA ID. OH EPA ID.	FACILITY	ADDRESS	PRIORITY	DELISTED(Y/N)
39050000992 OHD980611487 362-0117		PORT CLINTON, OH 44870 COUNTY: ERIE	LOW	YES REASON: DSIWM SITE
39050000993 OHD980611487 362-0117		PORT CLINTON, OH 44870 COUNTY: ERIE	LOW	YES REASON: DSIWM REGULATION

ERIIS ID	FACILITY	ADDRESS	COUNTY
39005021849	BOB GARBA-FRANKLIN FLATS	90601 RIVER VIEW DR HURON, OH 44839	ERIE
INCIDENT NO. 228205100	STATUS REPORTED	LUST TRUST FUND (LTF) ELIGIBILITY CLOSURE OF AN UNDERGROUND STORAGE TANK.	
39005022207	CONSOLIDATED ELECTRIC	1901 SAWMILL INDUSTRIAL PKWY HURON, OH 44839	ERIE
INCIDENT NO. 224197300	STATUS NO FURTHER ACTION	LUST TRUST FUND (LTF) ELIGIBILITY CLOSURE OF AN UNDERGROUND STORAGE TANK.	
39005022311	DANIEL LAPP	2112 CLEVELAND AVE HURON, OH 44839	ERIE
INCIDENT NO. 222179300	STATUS NO FURTHER ACTION	LUST TRUST FUND (LTF) ELIGIBILITY CLOSURE OF AN UNDERGROUND STORAGE TANK.	
39005022468	ERIE CTY LANDFILL	HOOVER RD HURON, OH 44839	ERIE
INCIDENT NO. 397128300	STATUS REPORTED	LUST TRUST FUND (LTF) ELIGIBILITY CLOSURE OF AN UNDERGROUND STORAGE TANK.	
39005022729	GASTOWN 3674	2103 CLEVELAND HURON, OH 44839	ERIE
INCIDENT NO. 229105800	STATUS CORRECTIVE ACTIONS IN PROGRESS	LUST TRUST FUND (LTF) ELIGIBILITY ELIGIBLE FOR LTF OVERSIGHT AND/OR SPENDING - SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM A REGULATED UST.	
39005022843	GTE NORTH, INC.	MAIN ST HURON, OH 44839	ERIE
INCIDENT NO. 226093300	STATUS NO FURTHER ACTION	LUST TRUST FUND (LTF) ELIGIBILITY CLOSURE OF AN UNDERGROUND STORAGE TANK.	
39005023854	PRESTON TRUCKING CO	1711 SAWMILL INDUSTRIAL PKWY HURON, OH 44839	ERIE
INCIDENT NO. 224197400	STATUS NO FURTHER ACTION	LUST TRUST FUND (LTF) ELIGIBILITY CLOSURE OF AN UNDERGROUND STORAGE TANK.	
39005025012	YELLOW FREIGHT	RYE BEACH RD HURON, OH 44839	ERIE
INCIDENT NO. 220106100	STATUS NO FURTHER ACTION	LUST TRUST FUND (LTF) ELIGIBILITY ELIGIBLE FOR LTF OVERSIGHT AND/OR SPENDING - SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM A REGULATED UST.	
39005021816	BFI	SR 101 SANDUSKY, OH 44870	ERIE
INCIDENT NO. 221113001	STATUS DISPROVED	LUST TRUST FUND (LTF) ELIGIBILITY ELIGIBLE FOR LTF OVERSIGHT AND/OR SPENDING - SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM A REGULATED UST.	

ERIIS ID	FACILITY	ADDRESS	COUNTY
39005022026	CAUSEWAY DR LIFT STA	1300 CAUSEWAY DR SANDUSKY, OH 44870	ERIE
INCIDENT NO. 220126300	STATUS NO FURTHER ACTION	LUST TRUST FUND (LTF) ELIGIBILITY CLOSURE OF AN UNDERGROUND STORAGE TANK.	
39005022195	COMMODORE PERRY SVC PLAZA	MILE POST 100.0 SOUTH SIDE SANDUSKY, OH 44870	ERIE
INCIDENT NO. 72948000	STATUS NO FURTHER ACTION	LUST TRUST FUND (LTF) ELIGIBILITY ELIGIBLE FOR LTF OVERSIGHT AND/OR SPENDING - SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM A REGULATED UST.	
39005022515	FARWELL ST LIFT STATION	FARWELL ST SANDUSKY, OH 44870	ERIE
INCIDENT NO. 220078600	STATUS NO FURTHER ACTION	LUST TRUST FUND (LTF) ELIGIBILITY ELIGIBLE FOR LTF OVERSIGHT AND/OR SPENDING - SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM A REGULATED UST.	
39005022720	GAS AMERICA	7065 US RT 30 SANDUSKY, OH 44870	ERIE
INCIDENT NO. 880063800	STATUS NO FURTHER ACTION	LUST TRUST FUND (LTF) ELIGIBILITY ELIGIBLE FOR LTF OVERSIGHT AND/OR SPENDING - SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM A REGULATED UST.	
39005023788	PETERSON LIFT STATION	PETERSON LN SANDUSKY, OH 44870	ERIE
INCIDENT NO. 222274400	STATUS NO FURTHER ACTION	LUST TRUST FUND (LTF) ELIGIBILITY CLOSURE OF AN UNDERGROUND STORAGE TANK.	
39005024063	SANDUSKY BD OF EDUCATION	8118 CAMP ST SANDUSKY, OH 44870	ERIE
INCIDENT NO. 222173700	STATUS NO FURTHER ACTION	LUST TRUST FUND (LTF) ELIGIBILITY CLOSURE OF AN UNDERGROUND STORAGE TANK.	
39005024532	UNITED PARCEL SERV	PERKINS AVE SANDUSKY, OH 44870	ERIE
INCIDENT NO. 220165100	STATUS NO FURTHER ACTION	LUST TRUST FUND (LTF) ELIGIBILITY CLOSURE OF AN UNDERGROUND STORAGE TANK.	
39005024617	UNKNOWN	PERKINS TOWNSHIP SANDUSKY, OH 44870	ERIE
INCIDENT NO. 22704500	STATUS DISPROVED	LUST TRUST FUND (LTF) ELIGIBILITY ELIGIBLE FOR LTF OVERSIGHT AND/OR SPENDING - SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM A REGULATED UST.	
39005024619	UNKNOWN	RAMADA & US RT 250 SANDUSKY, OH 44870	ERIE
INCIDENT NO. 221060900	STATUS REPORTED	LUST TRUST FUND (LTF) ELIGIBILITY ELIGIBLE FOR LTF OVERSIGHT AND/OR SPENDING - SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM A REGULATED UST.	

ERIIS ID	FACILITY	ADDRESS	COUNTY
39005024648	UNKNOWN (CITY WATER/SEWER LINE)	SR 101 SANDUSKY, OH 44870	ERIE

INCIDENT NO.	STATUS	LUST TRUST FUND (LTF) ELIGIBILITY
221113000	REPORTED	ELIGIBLE FOR LTF OVERSIGHT AND/OR SPENDING - SUSPECTED OR CONFIRMED FOR RELEASE OF PETROLEUM FROM A REGULATED UST.

ERIIS ID FACILITY ID	FACILITY ADDRESS	OPERATOR ADDRESS
39018000056 22-00-04	HURON LIME COMPANY LANDFILL #1 RIVER RD HURON, OH 44839 COUNTY: ERIE FACILITY TYPE: INDUSTRIAL SW LF CAPACITY: NOT REPORTED	H J MICHAELS HURON LIME COMPANY NOT REPORTED NOT REPORTED (419) 433-2141 FACILITY STATUS: CLOSED
39018000052 22-00-05	HURON LIME COMPANY LANDFILL #2 PO BOX 451 HURON, OH 44839-0451 COUNTY: ERIE FACILITY TYPE: INDUSTRIAL SW LF CAPACITY: NOT REPORTED	A.J. PARIS, HURON LIME COMPANY PO BOX 451 HURON, OH 44839 (419) 433-2141 FACILITY STATUS: ACTIVE
39018000388	HENSEN DUMP AKA HURON LIME CO. #2 WEST SIDE OF RIVER ROAD, 1/2 MILE HURON TOWNSHIP, OH COUNTY: ERIE FACILITY TYPE: PRIVATE, LIME SLUDGE CAPACITY: 12 ACRES	NOT REPORTED NOT REPORTED NOT REPORTED NOT REPORTED FACILITY STATUS: CLOSED 1982

ERIIS ENVIRONMENTAL DATA REPORT
OHIO UNDERGROUND STORAGE TANKS
RST - UNPLOTTABLE SITES

ERIIS Report #317596A

Mar 4, 1999

ERIIS ID / FACILITY ID	FACILITY	ADDRESS	OWNER ADDRESS	MANAGER
39010004878 / 0-220041	RYE BEACH HY-MILER	2026 CLEVELAND RD HURON, OH 44839 COUNTY: ERIE	DISTRICT PETROLEUM PRODUCTS, INC 1832 MILAN RD SANDUSKY, O 44870	MIKE STIPP

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
1	CURRENTLY IN USE	GASOHOL	10,000	23	FIBERGLASS
2	CURRENTLY IN USE	GASOHOL	4,000	23	BARE STEEL
3	CURRENTLY IN USE	GASOHOL	6,000	23	BARE STEEL
4	CURRENTLY IN USE	GASOHOL	6,000	23	BARE STEEL
5	CURRENTLY IN USE	KEROSENE	2,000	23	BARE STEEL
6	TEMPORARILY OUT OF USE	USED OIL	550	23	BARE STEEL

39010004952 / 0-220235	DANIEL & CAROL LAPP	2112 CLEVELAND RD HURON, OH 44839 COUNTY: ERIE	DANIEL & CAROL LAPP 404 S HAMPTON CT HURON, OH 44839	

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
1	REMOVED	GASOLINE	6,000	24	FIBERGLASS
2	REMOVED	GASOLINE	6,000	24	FIBERGLASS
3	REMOVED	GASOLINE	6,000	24	FIBERGLASS

39010005028 / 0-225986	ERIE COUNTY LANDFILL	HOOVER RD HURON, OH 44839 COUNTY: ERIE	ERIE COUNTY COMMISSIONERS PO BOX 370 HURON, OH 44839	JACK R. MYERS

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
1	CURRENTLY IN USE	DIESEL	1,000	27	UNKNOWN

39010005038 / 0-227135	GTE NORTH, INC.	MAIN & SHIRLEY HURON, OH 44839 COUNTY: ERIE	GTE NORTH, INC. 1300 COLUMBUS SANDUSKY RD N MARION, OH 43302	KEITH E. ZUSPAN

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
2	CURRENTLY IN USE	DIESEL	8,000	1	FIBERGLASS

39010019398 / 0-220307	DENNIS MICHELSON	2416 CLEVELAND SANDUSY RD HURON, OH 44839 COUNTY: ERIE	DENNIS MICHELSON 6322 146TH ST SW EDMONDS, WA 98026	

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
1	CURRENTLY IN USE	UNK	UNKNOWN	UNK	UNKNOWN
2	CURRENTLY IN USE	UNK	UNKNOWN	UNK	UNKNOWN
3	CURRENTLY IN USE	UNK	UNKNOWN	UNK	UNKNOWN
4	CURRENTLY IN USE	UNK	UNKNOWN	UNK	UNKNOWN

39010004932 / 0-220191	C.S.C. OIL CO. #484	607 PERKINS AVE SANDUSKY, OH 44870 COUNTY: ERIE	C.S.C. OIL CO. 2210 GOLDSMITH LN - STE 108 LOUISVILLE, KY 40218	WILLIAM SHEPARD

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
1	CURRENTLY IN USE	GASOLINE	10,000	25	BARE STEEL
2	CURRENTLY IN USE	GASOLINE	10,000	25	BARE STEEL
3	CURRENTLY IN USE	GASOLINE	10,000	25	BARE STEEL

ERIIS ENVIRONMENTAL DATA REPORT
OHIO UNDERGROUND STORAGE TANKS
RST - UNPLOTTABLE SITES

ERIIS Report #317596A

Mar 4, 1999

ERIIS ID / FACILITY ID	FACILITY	ADDRESS	OWNER ADDRESS	MANAGER
39010004967 / 0-220277	CEDAR POINT	#1 CAUSEWAY DR SANDUSKY, OH 44870 COUNTY: ERIE	CEDAR FAIR LIMITED PARTNERSHIP PO BOX 5006 SANDUSKY, OH 44870	RONALD K. FUSSNER

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
10	CURRENTLY IN USE	GASOLINE	10,000	13	FIBERGLASS
11	CURRENTLY IN USE	DIESEL	6,000	13	FIBERGLASS
4	CURRENTLY IN USE	GASOLINE	2,500	8	FIBERGLASS
6	CURRENTLY IN USE	USED OIL	2,500	7	FIBERGLASS
7	CURRENTLY IN USE	DIESEL	6,000	7	FIBERGLASS
8	CURRENTLY IN USE	GASOLINE	10,000	7	FIBERGLASS
9	CURRENTLY IN USE	GASOLINE	10,000	13	FIBERGLASS

ERIIS ID / FACILITY ID	FACILITY	ADDRESS	OWNER ADDRESS	MANAGER
39010009256 / 0-390093	SANDUSKY STEEL & SUPPLY CO.	4957 RT 250 N NORWALK, OH 44870 COUNTY: ERIE	SANDUSKY STEEL & SUPPLY CO. 4957 RT 250 N MILAN, OH 44846	STEVE LICHTESSIEN

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
1	REMOVED	GASOLINE	550	24	BARE STEEL

ERIIS ID / FACILITY ID	FACILITY	ADDRESS	OWNER ADDRESS	MANAGER
39010015180 / 0-720201	O.E. MEYER CO.	1520 E STATE ST SANDUSKY, OH 44870 COUNTY: ERIE	O.E. MEYER CO. PO BOX 479 SANDUSKY, OH 44870	

TANK ID	STATUS	SUBSTANCE	CAPACITY	AGE	CONSTRUCTION
1	REMOVED	UNK	2,000	34	COMPOSITE
2	REMOVED	UNK	2,000	34	UNKNOWN

AT Labs
a unit of assay technology

Laboratory Report
(Polarized Light Microscopy)

The Innovation & Value Leader in Occupational Hygiene Analysis

Pricing & Services: (800) 833-1258 • Technical Support: (800) 833-2003 • FAX: (650) 424-0336

Client # 11511-01
Customer: Quanterra
Attention: Denise Pohl
Address: 4101 Shuffel Dr NW

City: North Canton
State: OH
Zip Code: 44720

Batch Number: 0699-634

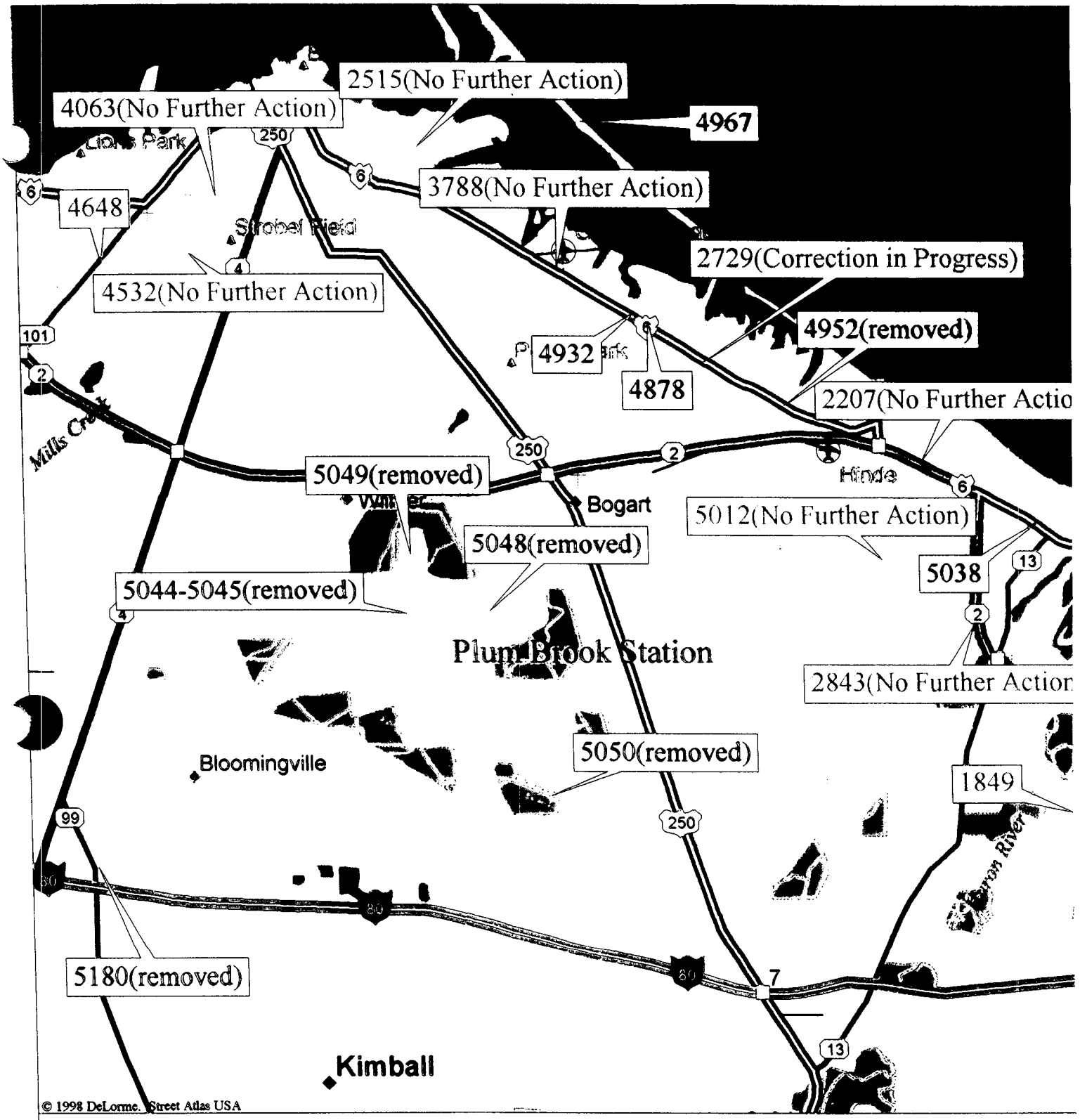
Date Sampled: 6/10-6/11/99
Date Received: 06/22/99
Date Reported: 06/28/99
Reported By: S. Lauderbaugh

			Asbestos Fibers						Other Fibers				
Lab ID #	Client ID.	Description / Color	Chrysotile	Amosite	Crocidilite	Actinolite	Tremolite	Anthophyllite	Cellulose	Glass Fibers	Synthetic	Other	Nonfibrous Material
963732	A9F140142-024 CWV97-1-01	Quantitative Point Count Analysis							15%				85%
963733	A9F140142-025 CWV98-1-01	Quantitative Point Count Analysis							15%				85%
963734	A9F140142-026 CWV99-1-01	Quantitative Point Count Analysis							10%				90%
963735	A9F140142-027 CWV9A-1-01	Quantitative Point Count Analysis							8%				92%
963736	A9F140142-028 CWV9C-1-01	Quantitative Point Count Analysis							10%				90%
963737	A9F140142-029 CWV9D-1-01	Quantitative Point Count Analysis							10%				90%
963738	A9F140142-037 CWV9R-1-01	Quantitative Point Count Analysis							10%				90%
963739	A9F140142-038 CWV9T-1-01	Quantitative Point Count Analysis							10%				90%
963740	A9F140142-039 CWV9V-1-01	Quantitative Point Count Analysis							15%				85%
963741	A9F140142-040 CWV9X-1-01	Quantitative Point Count Analysis							10%				90%
963742	A9F140142-041 CWVA0-1-01	Quantitative Point Count Analysis							15%				85%
963743	A9F140142-042 CWVA1-1-01	Quantitative Point Count Analysis							10%				90%

1695

Analytical Method: PLM per EPA 600/M4-82-020.

Reviewed by Kathy Taylor.
Accredited by The Americal Industrial Hygiene Association.



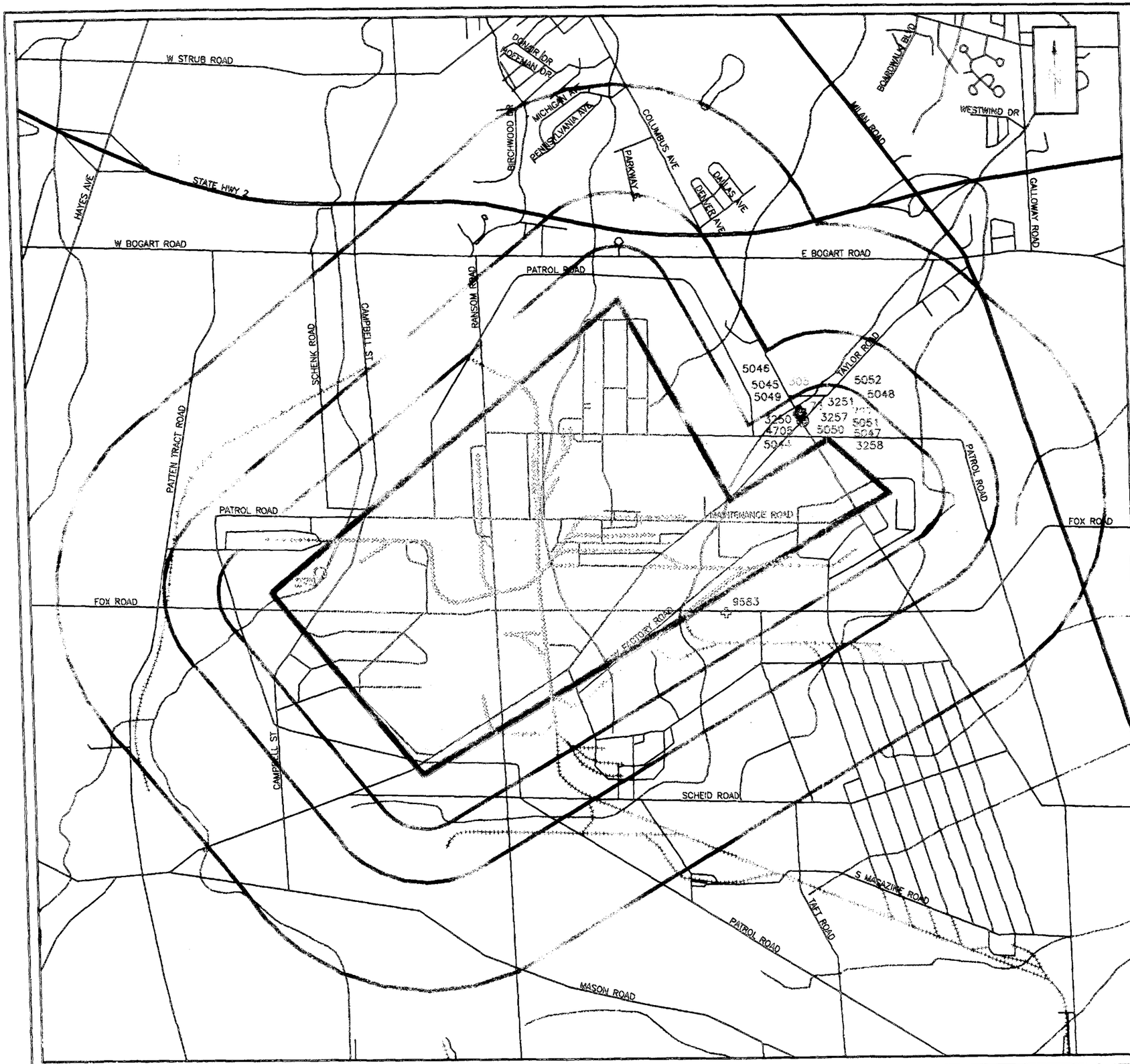
Mag 12.00
Tue Aug 10 14:12 1999
Scale 1:87,500 (at center)

2 Miles

2 KM

Local Road
Major Connector
State Route
Primary State Route
Ferry
Interstate/Limited Access
Toll Highway
US Highway

Exit
Utility/Pipe
Railroad
Small Town
Airfield
Park/Reservation
Locale
Public Airport



ERIS
505 Huntmar Park Dr, Suite 200
Herndon, VA 20170
(703)834-0600 (800)989-0402
FAX: (703)834-0606

SITE INFORMATION

South Of Sandusky
Sandusky, OH
Sandusky County
Job Number: 317596A
Map Plotted: Mar 4, 1999

MAP LEGEND

- Study Site
- ASTM Buffer
- Hydrography
- Railroads
- Roads
- Highways
- NPL 0 Sites
- RCRIS_TS 1 Site
- RCRIS_CA 0 Sites
- CERCLIS 0 Sites
- NFRAP 1 Site
- RCRIS_LG 0 Sites
- RCRIS_SG 1 Site
- ERNS 0 Sites
- HWS 1 Site
- LRST 6 Sites
- SWF 0 Sites
- RST 9 Sites

Miles
0 0.5

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Quanterra Incorporated
4101 Shuffel Drive, NW
North Canton, Ohio 44720

330 497-9396 Telephone
330 497-0772 Fax

ANALYTICAL REPORT

WASTEWATER TREATMENT PLANTS

Lot #: A9F140142

U.S. Army Corps of Engineers

QUANTERRA INCORPORATED

Debora A. Hula
Project Manager

July 23, 1999

CASE NARRATIVE
A9F140142

The following report contains the analytical results for forty solid samples and four water samples submitted to Quanterra-North Canton by the U.S. Army Corps of Engineers from the Wastewater Treatment Plants Site. The samples were received June 11 and 12, 1999, according to documented sample acceptance procedures.

Quanterra-North Canton utilizes USEPA approved methods in all analytical work. The samples presented in this report were analyzed for the parameters listed on the Analytical Methods Summary page in accordance with the method indicated.

The results included in this report have been reviewed for compliance with the laboratory QA/QC plan. All data have been found to be compliant with laboratory protocol.

The asbestos analysis was subcontracted to AT Laboratories.

The Sieve/Atterburg analysis was subcontracted to ACT in Cleveland, Ohio.

SUPPLEMENTAL QC INFORMATION

SAMPLE RECEIVING

The coolers were received at the laboratory at temperatures of 17.7, 0.9, 6.7 and 5.9° C.

GC/MS VOLATILES

~~Internal standard areas were outside acceptance limits for sample "PBOW9SSW203" due to matrix effects.~~

The matrix spike/matrix spike duplicate associated with sample "PBOW9SSW102" in batch 9172184 failed recovery criteria. The laboratory control sample associated with this batch was in control. This is believed to be a matrix effect; therefore, no further corrective action was taken.

GC/MS SEMIVOLATILES

Surrogate recoveries were outside acceptance limits in samples "PBOW99SDW104", "PBOW99SSW102" and "PBOW9SSW106" due to probable matrix effect. The recoveries were >10% and the associated quality control was acceptable; therefore, no corrective action was taken.

~~The matrix spike/matrix spike duplicate associated with sample "PBOW99SWW201" in batch 9172184~~ failed recovery criteria. The laboratory control ~~sample associated with this~~ batch was in control. This is ~~believed to be a matrix effect; therefore, no further corrective action was taken.~~

EXPLOSIVES

Surrogate recoveries for sample "PBOW99SSW104" were above the acceptance limits. Since no analytes were detected in these samples, the data is unaffected.

~~Sample "PBOW9SSW207" was reported with elevated reporting limits for 4-nitrotoluene due to sample matrix interference.~~

Reporting Limits have been adjusted for dry weight

Method blank, LCS and LCSD samples were analyzed without the client requested reporting limit standard. All the client samples and all the additional QC samples were bracketed appropriately with reporting limit standards.

METALS

Method blank contamination occurred.

- All affected analytes which were detected at a level less than 5% of the sample amount are flagged with "MBB".
- All affected analytes which were not detected in the sample at levels greater than the reporting limits are flagged with "MBE".
- Where blank contamination was a common laboratory contaminant, and was less than two times the reporting limit, affected analytes are flagged with "MBD".

Matrix spike recovery and relative percent difference (RPD) data were not calculated for some analytes due to the sample concentration readings greater than four times the spike amount. See the Matrix Spike Report for the affected analytes, which have been flagged with "NC, MSB". Matrix spike/spike duplicate recovery was outside the acceptance limits for some analytes. The acceptable LCS analysis data indicated that the analytical system was operating within control and this condition is most likely due to matrix interference. See the Matrix Spike Report for the affected analyte, which have been flagged with "N".

Matrix spike/spike duplicate relative percent difference (RPD) exceeded the acceptance limits for some analytes. The imprecision may be attributed to sample heterogeneity. See the Matrix Spike Report for the affected analytes, which have been flagged with "*".

Serial dilution of a sample in this lot indicates that physical and chemical interferences are present. See the sample report pages for the affected analytes, which have been flagged with "L".

ANALYTICAL METHODS SUMMARY

A9F140142

PARAMETER	ANALYTICAL METHOD
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A
Nitroaromatics and Nitramines by HPLC	SW846 8330
PCBs by SW-846 8082	SW846 8082
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Soil and Waste pH	SW846 9045C
Total Organic Carbon	SMCA WALKLEY-BLACK
Total Residue as Percent Solids	MCAWW 160.3 MOD
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Volatile Organics by GC/MS	SW846 8260B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SMCA 90-3, Standard Methods of Chemical Analysis, 6th Edition, D. Van Nostrand Co., Princeton, N.J., 1963.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

A9F140142

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
CWV88	001	PBOW99SDW101	06/09/99	19:00
CWV89	002	PBOW99SDW102	06/09/99	19:10
CWV8A	003	PBOW99SDW103	06/09/99	19:20
CWV8D	004	PBOW99SDW104	06/09/99	19:30
CWV8E	005	PBOW99SSW101	06/10/99	10:00
CWV8F	006	PBOW99SDW105	06/09/99	19:40
CWV8G	007	PBOW99SSW104	06/10/99	12:30
CWV8J	008	PBOW99SSW105	06/10/99	11:30
CWV8K	009	PBOW99SSW107	06/10/99	11:45
CWV8L	010	PBOW99SSW108	06/10/99	12:00
CWV8M	011	PBOW99SSW109	06/10/99	12:15
CWV8N	012	PBOW99SWW101	06/10/99	15:00
CWV8Q	013	PBOW99SWW102	06/10/99	15:30
~~CWV8R~~	~~014~~	~~PBOW99SSW201~~	~~06/11/99~~	
CWV8T	015	PBOW99SSW202	06/11/99	
CWV8V	016	PBOW99SSW203	06/11/99	
CWV8W	017	PBOW99SSW204	06/11/99	
CWV8X	018	PBOW99SSW205	06/11/99	
CWV90	019	PBOW99SSW206	06/11/99	
CWV91	020	PBOW99SSW207	06/11/99	
V94	021	PBOW99SSW208	06/11/99	
WV95	022	PBOW99SSW209	06/11/99	
CWV96	023	PBOW99SSW210	06/11/99	
CWV9F	030	PBOW99SDW201	06/11/99	
CWV9G	031	PBOW99SDW202	06/11/99	
CWV9H	032	PBOW99SDW203	06/11/99	
CWV9K	033	PBOW99SSW102	06/10/99	
CWV9L	034	PBOW99SSW103	06/10/99	
CWV9M	035	PBOW99SSW106	06/10/99	
CWV9N	036	PBOW99SSW110	06/10/99	
CWVA2	043	PBOW99SWW201	06/11/99	
~~CWVA3~~	~~044~~	~~PBOW99SWW202~~	~~06/11/99~~	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW101

HPLC

Lot-Sample #...: A9F140142-005 **Work Order #...:** CWV8E10C **Matrix.....:** SOLID
Date Sampled...: 06/10/99 10:00 **Date Received..:** 06/11/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1
% Moisture.....: 11 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
4-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	105	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW101

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-005 **Work Order #...:** CWV8E201 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 10:00 **Date Received..:** 06/11/99
Prep Date.....: 06/21/99 **Analysis Date..:** 06/25/99
Prep Batch #...: 9172112
Dilution Factor: 1
% Moisture.....: 11 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	370	ug/kg
Acenaphthylene	ND	370	ug/kg
Anthracene	ND	370	ug/kg
Benzo(a)anthracene	ND	370	ug/kg
Benzo(b)fluoranthene	ND	370	ug/kg
Benzo(k)fluoranthene	ND	370	ug/kg
Benzo(ghi)perylene	ND	370	ug/kg
Benzo(a)pyrene	ND	370	ug/kg
bis(2-Chloroethoxy) methane	ND	370	ug/kg
bis(2-Chloroethyl)-ether	ND	370	ug/kg
bis(2-Ethylhexyl) phthalate	ND	370	ug/kg
4-Bromophenyl phenyl ether	ND	370	ug/kg
Butyl benzyl phthalate	ND	370	ug/kg
4-Chloroaniline	ND	370	ug/kg
4-Chloro-3-methylphenol	ND	370	ug/kg
2-Chloronaphthalene	ND	370	ug/kg
2-Chlorophenol	ND	370	ug/kg
4-Chlorophenyl phenyl ether	ND	370	ug/kg
Chrysene	ND	370	ug/kg
Dibenz(a,h)anthracene	ND	370	ug/kg
Dibenzofuran	ND	370	ug/kg
Di-n-butyl phthalate	ND	370	ug/kg
1,2-Dichlorobenzene	ND	370	ug/kg
1,3-Dichlorobenzene	ND	370	ug/kg
1,4-Dichlorobenzene	ND	370	ug/kg
3,3'-Dichlorobenzidine	ND	370	ug/kg
2,4-Dichlorophenol	ND	370	ug/kg
Diethyl phthalate	ND	370	ug/kg
2,4-Dimethylphenol	ND	370	ug/kg
Dimethyl phthalate	ND	370	ug/kg
Di-n-octyl phthalate	ND	370	ug/kg
4,6-Dinitro-2-methylphenol	ND	900	ug/kg

(Continued on next page)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW101

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-005 **Work Order #...:** CWV8E201 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	900	ug/kg
2,4-Dinitrotoluene	ND	370	ug/kg
2,6-Dinitrotoluene	ND	370	ug/kg
Fluoranthene	ND	370	ug/kg
Fluorene	ND	370	ug/kg
Hexachlorobenzene	ND	370	ug/kg
Hexachlorobutadiene	ND	370	ug/kg
Hexachlorocyclopenta-diene	ND	370	ug/kg
Hexachloroethane	ND	370	ug/kg
Indeno(1,2,3-cd)pyrene	ND	370	ug/kg
Isophorone	ND	370	ug/kg
2-Methylnaphthalene	ND	370	ug/kg
2-Methylphenol	ND	370	ug/kg
Naphthalene	ND	370	ug/kg
2-Nitroaniline	ND	900	ug/kg
3-Nitroaniline	ND	900	ug/kg
4-Nitroaniline	ND	900	ug/kg
Nitrobenzene	ND	370	ug/kg
2-Nitrophenol	ND	370	ug/kg
4-Nitrophenol	ND	900	ug/kg
N-Nitrosodi-n-propyl-amine	ND	370	ug/kg
N-Nitrosodiphenylamine	ND	370	ug/kg
Pentachlorophenol	ND	900	ug/kg
Phenanthrene	ND	370	ug/kg
Phenol	ND	370	ug/kg
Pyrene	ND	370	ug/kg
1,2,4-Trichlorobenzene	ND	370	ug/kg
2,4,5-Trichlorophenol	ND	370	ug/kg
2,4,6-Trichlorophenol	ND	370	ug/kg
Carbazole	ND	370	ug/kg
4-Methylphenol	ND	370	ug/kg
bis(2-Chloroisopropyl) ether	ND	370	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	49	(23 - 120)
Terphenyl-d14	76	(18 - 137)
2-Fluorobiphenyl	61	(30 - 115)
2-Fluorophenol	51	(30 - 115)
Phenol-d5	51	(24 - 113)
2,4,6-Tribromophenol	59	(19 - 122)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW101

TOTAL Metals

Lot-Sample #...: A9F140142-005 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 10:00 **Date Received..:** 06/11/99
% Moisture.....: 11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174294						
Silver	ND	0.56	mg/kg	SW846 6010B	06/24-07/16/99	CWV8E103
		Dilution Factor: 1				
Arsenic	**3.2**	**1.1**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8E104**
		Dilution Factor: 1				
Barium	**25.0**	**22.6**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8E102**
		Dilution Factor: 1				
Cadmium	ND	0.23	mg/kg	SW846 6010B	06/24-07/16/99	CWV8E105
		Dilution Factor: 1				
Chromium	**9.9**	**0.56**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8E106**
		Dilution Factor: 1				
Lead	**56.9**	**0.34**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8E107**
		Dilution Factor: 1				
Mercury	ND	0.11	mg/kg	SW846 7471A	06/24-06/28/99	CWV8E109
		Dilution Factor: 1				
Selenium	**0.76**	**0.56**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8E108**
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW101

General Chemistry

Lot-Sample #...: A9F140142-005 Work Order #...: CWV8E Matrix.....: SOLID
Date Sampled...: 06/10/99 10:00 Date Received..: 06/11/99
% Moisture.....: 11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	7.9		No Units	SW846 9045C	06/11/99	9169204
	Dilution Factor: 1					
Percent Solids	88.5	0.10	%	MCAWW 160.3 MOD	06/16-06/17/99	9167139
	Dilution Factor: 1					
Total Organic Carbon	2400	110	mg/kg	SMCA WALKLEY-BLAC	07/05/99	9186124
	Dilution Factor: 1					

NOTE(S):

RL Reporting Limit

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW102

HPLC

Lot-Sample #...: A9F140142-033 **Work Order #...:** CWV9K10V **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1
% Moisture.....: 8.5 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
4-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	99	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW102

GC/MS Volatiles

Lot-Sample #...: A9F140142-033 **Work Order #...:** CWV9K102 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/18/99
Prep Batch #...: 9172184
Dilution Factor: 1
% Moisture.....: 8.5 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	11	ug/kg
Benzene	ND	5.5	ug/kg
Bromodichloromethane	ND	5.5	ug/kg
Bromoform	ND	5.5	ug/kg
Bromomethane	ND	5.5	ug/kg
2-Butanone	ND	11	ug/kg
Carbon disulfide	ND	5.5	ug/kg
Carbon tetrachloride	ND	5.5	ug/kg
Chlorobenzene	ND	5.5	ug/kg
Dibromochloromethane	ND	5.5	ug/kg
Chloroethane	ND	5.5	ug/kg
Chloroform	ND	5.5	ug/kg
Chloromethane	ND	5.5	ug/kg
1,1-Dichloroethane	ND	5.5	ug/kg
1,2-Dichloroethane	ND	5.5	ug/kg
1,1-Dichloroethene	ND	5.5	ug/kg
cis-1,2-Dichloroethene	ND	5.5	ug/kg
trans-1,2-Dichloroethene	ND	5.5	ug/kg
1,2-Dichloropropane	ND	5.5	ug/kg
cis-1,3-Dichloropropene	ND	5.5	ug/kg
trans-1,3-Dichloropropene	ND	5.5	ug/kg
Ethylbenzene	ND	5.5	ug/kg
2-Hexanone	ND	11	ug/kg
Methylene chloride	ND	5.5	ug/kg
4-Methyl-2-pentanone	ND	11	ug/kg
Styrene	ND	5.5	ug/kg
1,1,2,2-Tetrachloroethane	ND	5.5	ug/kg
Tetrachloroethene	ND	5.5	ug/kg
Toluene	ND	5.5	ug/kg
1,1,1-Trichloroethane	ND	5.5	ug/kg
1,1,2-Trichloroethane	ND	5.5	ug/kg
Trichloroethene	ND	5.5	ug/kg
Vinyl chloride	ND	5.5	ug/kg
Xylenes (total)	ND	5.5	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(70 - 135)
1,2-Dichloroethane-d4	111	(75 - 117)
Toluene-d8	100	(86 - 122)
Bromofluorobenzene	108	(60 - 137)

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW102

GC/MS Volatiles

Lot-Sample #...: A9F140142-033 Work Order #...: CWV9K102 Matrix.....: SOLID

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW102

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-033 **Work Order #...:** CWV9K101 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/19/99
Prep Batch #...: 9166107
Dilution Factor: 1
% Moisture.....: 8.5 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	360	ug/kg
Acenaphthylene	ND	360	ug/kg
Anthracene	ND	360	ug/kg
Benzo(a)anthracene	**510**	**360**	**ug/kg**
Benzo(b)fluoranthene	**550**	**360**	**ug/kg**
Benzo(k)fluoranthene	ND	360	ug/kg
Benzo(ghi)perylene	ND	360	ug/kg
Benzo(a)pyrene	**420**	**360**	**ug/kg**
bis(2-Chloroethoxy) methane	ND	360	ug/kg
bis(2-Chloroethyl)-ether	ND	360	ug/kg
bis(2-Ethylhexyl) phthalate	ND	360	ug/kg
4-Bromophenyl phenyl ether	ND	360	ug/kg
Butyl benzyl phthalate	ND	360	ug/kg
4-Chloroaniline	ND	360	ug/kg
4-Chloro-3-methylphenol	ND	360	ug/kg
2-Chloronaphthalene	ND	360	ug/kg
2-Chlorophenol	ND	360	ug/kg
4-Chlorophenyl phenyl ether	ND	360	ug/kg
Chrysene	**450**	**360**	**ug/kg**
Dibenz(a,h)anthracene	ND	360	ug/kg
Dibenzofuran	ND	360	ug/kg
Di-n-butyl phthalate	ND	360	ug/kg
1,2-Dichlorobenzene	ND	360	ug/kg
1,3-Dichlorobenzene	ND	360	ug/kg
1,4-Dichlorobenzene	ND	360	ug/kg
3,3'-Dichlorobenzidine	ND	360	ug/kg
2,4-Dichlorophenol	ND	360	ug/kg
Diethyl phthalate	ND	360	ug/kg
2,4-Dimethylphenol	ND	360	ug/kg
Dimethyl phthalate	ND	360	ug/kg
Di-n-octyl phthalate	ND	360	ug/kg
4,6-Dinitro-2-methylphenol	ND	870	ug/kg

(Continued on next page)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW102

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-033 **Work Order #...:** CWV9K101 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	870	ug/kg
2,4-Dinitrotoluene	ND	360	ug/kg
2,6-Dinitrotoluene	ND	360	ug/kg
Fluoranthene	**1200**	**360**	**ug/kg**
Fluorene	ND	360	ug/kg
Hexachlorobenzene	ND	360	ug/kg
Hexachlorobutadiene	ND	360	ug/kg
Hexachlorocyclopenta-diene	ND	360	ug/kg
Hexachloroethane	ND	360	ug/kg
Indeno(1,2,3-cd)pyrene	ND	360	ug/kg
Isophorone	ND	360	ug/kg
2-Methylnaphthalene	ND	360	ug/kg
2-Methylphenol	ND	360	ug/kg
Naphthalene	ND	360	ug/kg
2-Nitroaniline	ND	870	ug/kg
3-Nitroaniline	ND	870	ug/kg
4-Nitroaniline	ND	870	ug/kg
Nitrobenzene	ND	360	ug/kg
2-Nitrophenol	ND	360	ug/kg
4-Nitrophenol	ND	870	ug/kg
N-Nitrosodi-n-propyl-amine	ND	360	ug/kg
N-Nitrosodiphenylamine	ND	360	ug/kg
Pentachlorophenol	ND	870	ug/kg
Phenanthrene	**940**	**360**	**ug/kg**
Phenol	ND	360	ug/kg
Pyrene	**860**	**360**	**ug/kg**
1,2,4-Trichlorobenzene	ND	360	ug/kg
2,4,5-Trichlorophenol	ND	360	ug/kg
2,4,6-Trichlorophenol	ND	360	ug/kg
Carbazole	ND	360	ug/kg
4-Methylphenol	ND	360	ug/kg
bis(2-Chloroisopropyl) ether	ND	360	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	74	(23 - 120)
Terphenyl-d14	84	(18 - 137)
2-Fluorobiphenyl	79	(30 - 115)
2-Fluorophenol	65	(30 - 115)
Phenol-d5	73	(24 - 113)
2,4,6-Tribromophenol	16 *	(19 - 122)

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW102

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-033 **Work Order #...:** CWV9K101 **Matrix.....:** SOLID

NOTE(S):

" Surrogate recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW102

GC Semivolatiles

Lot-Sample #...: A9F140142-033 **Work Order #...:** CWV9K103 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9166108
Dilution Factor: 1
% Moisture.....: 8.5 **Method.....:** SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	36	ug/kg
Aroclor 1221	ND	36	ug/kg
Aroclor 1232	ND	36	ug/kg
Aroclor 1242	ND	36	ug/kg
Aroclor 1248	ND	36	ug/kg
Aroclor 1254	**180**	**36**	**ug/kg**
Aroclor 1260	**110**	**36**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	69	(10 - 129)
Decachlorobiphenyl	94	(10 - 138)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW102

TOTAL Metals

Lot-Sample #...: A9F140142-033 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
% Moisture.....: 8.5

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174305						
Silver	ND	0.55	mg/kg	SW846 6010B	06/24-07/16/99	CWV9K10K
		Dilution Factor: 1				
Aluminum	**4340**	**21.8**	**mg/kg**	**SW846 6010B**	**06/24-07/15/99**	**CWV9K104**
		Dilution Factor: 1				
Arsenic	**4.2**	**1.1**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9K10L**
		Dilution Factor: 1				
Barium	**27.1**	**21.8**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9K105**
		Dilution Factor: 1				
Beryllium	ND	0.55	mg/kg	SW846 6010B	06/24-07/16/99	CWV9K106
		Dilution Factor: 1				
admium	ND	0.22	mg/kg	SW846 6010B	06/24-07/16/99	CWV9K10M
		Dilution Factor: 1				
Calcium	**9030**	**546**	**mg/kg**	**SW846 6010B**	**06/24-07/15/99**	**CWV9K107**
		Dilution Factor: 1				
Chromium	**7.8**	**0.55**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9K10N**
		Dilution Factor: 1				
Cobalt	ND	5.5	mg/kg	SW846 6010B	06/24-07/16/99	CWV9K108
		Dilution Factor: 1				
Lead	**19.8**	**0.33**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9K10P**
		Dilution Factor: 1				
Copper	**10.3**	**2.7**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9K109**
		Dilution Factor: 1				
Antimony	ND	1.1	mg/kg	SW846 6010B	06/24-07/16/99	CWV9K10Q
		Dilution Factor: 1				
Iron	**10500**	**10.9**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9K10A**
		Dilution Factor: 1				
Mercury	**1.3**	**0.11**	**mg/kg**	**SW846 7471A**	**06/24-06/28/99**	**CWV9K10T**
		Dilution Factor: 1				

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW102

TOTAL Metals

Lot-Sample #...: A9F140142-033 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	ND	0.55	mg/kg	SW846 6010B	06/24-07/16/99	CWV9K10R
		Dilution Factor: 1				
Potassium	ND	546	mg/kg	SW846 6010B	06/24-07/15/99	CWV9K10C
		Dilution Factor: 1				
Thallium	ND	1.1	mg/kg	SW846 6010B	06/24-07/16/99	CWV9K10W
		Dilution Factor: 1				
Magnesium	**1710**	**546**	**mg/kg**	**SW846 6010B**	**06/24-07/15/99**	**CWV9K10D**
		Dilution Factor: 1				
Manganese	**202**	**1.6**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9K10E**
		Dilution Factor: 1				
Sodium	ND	546	mg/kg	SW846 6010B	06/24-07/15/99	CWV9K10F
		Dilution Factor: 1				
ickel	**7.3**	**4.4**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9K10G**
		Dilution Factor: 1				
Vanadium	**14.6**	**5.5**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9K10H**
		Dilution Factor: 1				
Zinc	**59.4 MBD**	**2.2**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9K10J**
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

MBD This analyte is present in the associated method blank at an amount that is less than two times the reporting limit.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW103

HPLC

Lot-Sample #...: A9F140142-034 **Work Order #...:** CWV9L10V **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1
% Moisture.....: 25 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
4-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	117	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW103

GC/MS Volatiles

Lot-Sample #...: A9F140142-034 **Work Order #...:** CWV9L102 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
Prep Date.....: 06/21/99 **Analysis Date..:** 06/21/99
Prep Batch #...: 9172281
Dilution Factor: 1
% Moisture.....: 25 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	13	ug/kg
Benzene	ND	6.6	ug/kg
Bromodichloromethane	ND	6.6	ug/kg
Bromoform	ND	6.6	ug/kg
Bromomethane	ND	6.6	ug/kg
2-Butanone	ND	13	ug/kg
Carbon disulfide	ND	6.6	ug/kg
Carbon tetrachloride	ND	6.6	ug/kg
Chlorobenzene	ND	6.6	ug/kg
Dibromochloromethane	ND	6.6	ug/kg
Chloroethane	ND	6.6	ug/kg
Chloroform	ND	6.6	ug/kg
Chloromethane	ND	6.6	ug/kg
1,1-Dichloroethane	ND	6.6	ug/kg
1,2-Dichloroethane	ND	6.6	ug/kg
1,1-Dichloroethene	ND	6.6	ug/kg
cis-1,2-Dichloroethene	ND	6.6	ug/kg
trans-1,2-Dichloroethene	ND	6.6	ug/kg
1,2-Dichloropropane	ND	6.6	ug/kg
cis-1,3-Dichloropropene	ND	6.6	ug/kg
trans-1,3-Dichloropropene	ND	6.6	ug/kg
Ethylbenzene	ND	6.6	ug/kg
2-Hexanone	ND	13	ug/kg
Methylene chloride	ND	6.6	ug/kg
4-Methyl-2-pentanone	ND	13	ug/kg
Styrene	ND	6.6	ug/kg
1,1,2,2-Tetrachloroethane	ND	6.6	ug/kg
Tetrachloroethene	ND	6.6	ug/kg
Toluene	ND	6.6	ug/kg
1,1,1-Trichloroethane	ND	6.6	ug/kg
1,1,2-Trichloroethane	ND	6.6	ug/kg
Trichloroethene	ND	6.6	ug/kg
Vinyl chloride	ND	6.6	ug/kg
Xylenes (total)	ND	6.6	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(70 - 135)
1,2-Dichloroethane-d4	109	(75 - 117)
Toluene-d8	98	(86 - 122)
Bromofluorobenzene	93	(60 - 137)

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW103

GC/MS Volatiles

Lot-Sample #...: A9F140142-034 **Work Order #...:** CWV9L102 **Matrix.....:** SOLID

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW103

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-034 **Work Order #...:** CWV9L101 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/19/99
Prep Batch #...: 9166107
Dilution Factor: 1
% Moisture.....: 25 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	440	ug/kg
Acenaphthylene	ND	440	ug/kg
Anthracene	ND	440	ug/kg
Benzo(a)anthracene	ND	440	ug/kg
Benzo(b)fluoranthene	ND	440	ug/kg
Benzo(k)fluoranthene	ND	440	ug/kg
Benzo(ghi)perylene	ND	440	ug/kg
Benzo(a)pyrene	ND	440	ug/kg
bis(2-Chloroethoxy) methane	ND	440	ug/kg
bis(2-Chloroethyl)-ether	ND	440	ug/kg
bis(2-Ethylhexyl) phthalate	ND	440	ug/kg
4-Bromophenyl phenyl ether	ND	440	ug/kg
Butyl benzyl phthalate	ND	440	ug/kg
4-Chloroaniline	ND	440	ug/kg
4-Chloro-3-methylphenol	ND	440	ug/kg
2-Chloronaphthalene	ND	440	ug/kg
2-Chlorophenol	ND	440	ug/kg
4-Chlorophenyl phenyl ether	ND	440	ug/kg
Chrysene	ND	440	ug/kg
Dibenz(a,h)anthracene	ND	440	ug/kg
Dibenzofuran	ND	440	ug/kg
Di-n-butyl phthalate	ND	440	ug/kg
1,2-Dichlorobenzene	ND	440	ug/kg
1,3-Dichlorobenzene	ND	440	ug/kg
1,4-Dichlorobenzene	ND	440	ug/kg
3,3'-Dichlorobenzidine	ND	440	ug/kg
2,4-Dichlorophenol	ND	440	ug/kg
Diethyl phthalate	ND	440	ug/kg
2,4-Dimethylphenol	ND	440	ug/kg
Dimethyl phthalate	ND	440	ug/kg
Di-n-octyl phthalate	ND	440	ug/kg
4,6-Dinitro-2-methylphenol	ND	1100	ug/kg

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW103

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-034 **Work Order #...:** CWV9L101 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	1100	ug/kg
2,4-Dinitrotoluene	ND	440	ug/kg
2,6-Dinitrotoluene	ND	440	ug/kg
Fluoranthene	ND	440	ug/kg
Fluorene	ND	440	ug/kg
Hexachlorobenzene	ND	440	ug/kg
Hexachlorobutadiene	ND	440	ug/kg
Hexachlorocyclopenta-diene	ND	440	ug/kg
Hexachloroethane	ND	440	ug/kg
Indeno(1,2,3-cd)pyrene	ND	440	ug/kg
Isophorone	ND	440	ug/kg
2-Methylnaphthalene	ND	440	ug/kg
2-Methylphenol	ND	440	ug/kg
Naphthalene	ND	440	ug/kg
2-Nitroaniline	ND	1100	ug/kg
3-Nitroaniline	ND	1100	ug/kg
4-Nitroaniline	ND	1100	ug/kg
Nitrobenzene	ND	440	ug/kg
2-Nitrophenol	ND	440	ug/kg
4-Nitrophenol	ND	1100	ug/kg
N-Nitrosodi-n-propyl-amine	ND	440	ug/kg
N-Nitrosodiphenylamine	ND	440	ug/kg
Pentachlorophenol	ND	1100	ug/kg
Phenanthrene	ND	440	ug/kg
Phenol	ND	440	ug/kg
Pyrene	ND	440	ug/kg
1,2,4-Trichlorobenzene	ND	440	ug/kg
2,4,5-Trichlorophenol	ND	440	ug/kg
2,4,6-Trichlorophenol	ND	440	ug/kg
Carbazole	ND	440	ug/kg
4-Methylphenol	ND	440	ug/kg
bis(2-Chloroisopropyl) ether	ND	440	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	78	(23 - 120)
Terphenyl-d14	90	(18 - 137)
2-Fluorobiphenyl	76	(30 - 115)
2-Fluorophenol	63	(30 - 115)
Phenol-d5	70	(24 - 113)
2,4,6-Tribromophenol	35	(19 - 122)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW103

GC Semivolatiles

Lot-Sample #...: A9F140142-034 **Work Order #...:** CWV9L103 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9166108
Dilution Factor: 1
% Moisture.....: 25 **Method.....:** SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	44	ug/kg
Aroclor 1221	ND	44	ug/kg
Aroclor 1232	ND	44	ug/kg
Aroclor 1242	ND	44	ug/kg
Aroclor 1248	ND	44	ug/kg
Aroclor 1254	**85**	**44**	**ug/kg**
Aroclor 1260	**50**	**44**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	95	(10 - 129)
Decachlorobiphenyl	95	(10 - 138)

OTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW103

TOTAL Metals

Lot-Sample #...: A9F140142-034 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
% Moisture.....: 25

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174305						
Silver	ND	0.66 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV9L10K
Aluminum	**5560**	**26.5** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/15/99**	**CWV9L104**
Arsenic	**3.0**	**1.3** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9L10L**
Barium	ND	26.5 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV9L105
Beryllium	ND	0.66 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV9L106
Cadmium	ND	0.27 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV9L10M
Calcium	**3380**	**663** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/15/99**	**CWV9L107**
Chromium	**6.8**	**0.66** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9L10N**
Cobalt	ND	6.6 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV9L108
Lead	**12.0**	**0.40** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9L10P**
Copper	**5.1**	**3.3** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9L109**
Antimony	ND	1.3 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV9L10Q
Iron	**8110**	**13.3** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9L10A**
Mercury	ND	0.13 Dilution Factor: 1	mg/kg	SW846 7471A	06/24-06/28/99	CWV9L10T

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW103

TOTAL Metals

Lot-Sample #...: A9F140142-034 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	ND	0.66	mg/kg	SW846 6010B	06/24-07/16/99	CWV9L10R
		Dilution Factor: 1				
Potassium	ND	663	mg/kg	SW846 6010B	06/24-07/15/99	CWV9L10C
		Dilution Factor: 1				
Thallium	ND	1.3	mg/kg	SW846 6010B	06/24-07/16/99	CWV9L10W
		Dilution Factor: 1				
Magnesium	**1180**	**663**	**mg/kg**	**SW846 6010B**	**06/24-07/15/99**	**CWV9L10D**
		Dilution Factor: 1				
Manganese	**118**	**2.0**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9L10E**
		Dilution Factor: 1				
Sodium	ND	663	mg/kg	SW846 6010B	06/24-07/15/99	CWV9L10F
		Dilution Factor: 1				
Nickel	**6.1**	**5.3**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9L10G**
		Dilution Factor: 1				
Vanadium	**12.6**	**6.6**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9L10H**
		Dilution Factor: 1				
Zinc	**25.5 MBD**	**2.7**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9L10J**
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

MBD This analyte is present in the associated method blank at an amount that is less than two times the reporting limit.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW104

HPLC

Lot-Sample #...: A9F140142-007 **Work Order #...:** CWV8G10A **Matrix.....:** SOLID
Date Sampled...: 06/10/99 12:30 **Date Received..:** 06/11/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1
% Moisture.....: 7.8 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	**0.66**	**0.25**	**mg/kg**
4-Amino-2,6-dinitrotoluene	**0.33**	**0.25**	**mg/kg**
2-Amino-4,6-dinitrotoluene	**0.29**	**0.25**	**mg/kg**
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
4-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	139 *	(76 - 124)

NOTE(S):

* Surrogate recovery is outside stated control limits.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW104

TOTAL Metals

Lot-Sample #...: A9F140142-007 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 12:30 **Date Received..:** 06/11/99
% Moisture.....: 7.8

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174294						
Silver	ND	0.54	mg/kg	SW846 6010B	06/24-07/16/99	CWV8G102
		Dilution Factor: 1				
Arsenic	**4.0**	**1.1**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8G103**
		Dilution Factor: 1				
Barium	**23.1**	**21.7**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8G101**
		Dilution Factor: 1				
Cadmium	ND	0.22	mg/kg	SW846 6010B	06/24-07/16/99	CWV8G104
		Dilution Factor: 1				
Chromium	**9.9**	**0.54**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8G105**
		Dilution Factor: 1				
Lead	**25.4**	**0.33**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8G106**
		Dilution Factor: 1				
Mercury	**0.15**	**0.11**	**mg/kg**	**SW846 7471A**	**06/24-06/28/99**	**CWV8G108**
		Dilution Factor: 1				
Selenium	ND	0.54	mg/kg	SW846 6010B	06/24-07/16/99	CWV8G107
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW105

HPLC

Lot-Sample #...: A9F140142-008 **Work Order #...:** CWV8J10A **Matrix.....:** SOLID
Date Sampled...: 06/10/99 11:30 **Date Received..:** 06/11/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/24/99
Prep Batch #...: 9169280
Dilution Factor: 20
% Moisture.....: 10 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	10	mg/kg
RDX	ND	10	mg/kg
1,3,5-Trinitrobenzene	ND	5.0	mg/kg
1,3-Dinitrobenzene	ND	5.0	mg/kg
Tetryl	ND	13	mg/kg
Nitrobenzene	ND	5.0	mg/kg
2,4,6-Trinitrotoluene	**130**	**5.0**	**mg/kg**
4-Amino-2,6-dinitrotoluene	ND	5.0	mg/kg
2-Amino-4,6-dinitrotoluene	ND	5.0	mg/kg
2,6-Dinitrotoluene	ND	5.0	mg/kg
2,4-Dinitrotoluene	ND	5.0	mg/kg
2-Nitrotoluene	ND	5.0	mg/kg
4-Nitrotoluene	ND	5.0	mg/kg
3-Nitrotoluene	ND	5.0	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	NC,DIL	(76 - 124)

NOTE(S):

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW105

TOTAL Metals

Lot-Sample #...: A9F140142-008 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 11:30 **Date Received..:** 06/11/99
% Moisture.....: 10

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174294						
Silver	ND	0.56	mg/kg	SW846 6010B	06/24-07/16/99	CWV8J102
		Dilution Factor: 1				
Arsenic	**4.1**	**1.1**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8J103**
		Dilution Factor: 1				
Barium	**29.9**	**22.3**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8J101**
		Dilution Factor: 1				
Cadmium	ND	0.22	mg/kg	SW846 6010B	06/24-07/16/99	CWV8J104
		Dilution Factor: 1				
Chromium	**14.9**	**0.56**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8J105**
		Dilution Factor: 1				
Lead	**107**	**0.33**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8J106**
		Dilution Factor: 1				
Mercury	ND	0.11	mg/kg	SW846 7471A	06/24-06/28/99	CWV8J108
		Dilution Factor: 1				
Selenium	ND	0.56	mg/kg	SW846 6010B	06/24-07/16/99	CWV8J107
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW106

HPLC

Lot-Sample #...: A9F140142-035 **Work Order #...:** CWV9M10V **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1
% Moisture.....: 9.8 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
4-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	110	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW106

GC/MS Volatiles

Lot-Sample #...: A9F140142-035 **Work Order #...:** CWV9M102 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
Prep Date.....: 06/17/99 **Analysis Date..:** 06/17/99
Prep Batch #...: 9168297
Dilution Factor: 1
% Moisture.....: 9.8 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acetone	ND	11	ug/kg
Benzene	ND	5.5	ug/kg
Bromodichloromethane	ND	5.5	ug/kg
Bromoform	ND	5.5	ug/kg
Bromomethane	ND	5.5	ug/kg
2-Butanone	ND	11	ug/kg
Carbon disulfide	ND	5.5	ug/kg
Carbon tetrachloride	ND	5.5	ug/kg
Chlorobenzene	ND	5.5	ug/kg
Dibromochloromethane	ND	5.5	ug/kg
Chloroethane	ND	5.5	ug/kg
Chloroform	ND	5.5	ug/kg
Chloromethane	ND	5.5	ug/kg
1,1-Dichloroethane	ND	5.5	ug/kg
1,2-Dichloroethane	ND	5.5	ug/kg
1,1-Dichloroethene	ND	5.5	ug/kg
cis-1,2-Dichloroethene	ND	5.5	ug/kg
trans-1,2-Dichloroethene	ND	5.5	ug/kg
1,2-Dichloropropane	ND	5.5	ug/kg
cis-1,3-Dichloropropene	ND	5.5	ug/kg
trans-1,3-Dichloropropene	ND	5.5	ug/kg
Ethylbenzene	ND	5.5	ug/kg
2-Hexanone	ND	11	ug/kg
Methylene chloride	ND	5.5	ug/kg
4-Methyl-2-pentanone	ND	11	ug/kg
Styrene	ND	5.5	ug/kg
1,1,2,2-Tetrachloroethane	ND	5.5	ug/kg
Tetrachloroethene	ND	5.5	ug/kg
Toluene	ND	5.5	ug/kg
1,1,1-Trichloroethane	ND	5.5	ug/kg
1,1,2-Trichloroethane	ND	5.5	ug/kg
Trichloroethene	ND	5.5	ug/kg
Vinyl chloride	ND	5.5	ug/kg
Xylenes (total)	ND	5.5	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	108	(70 - 135)
1,2-Dichloroethane-d4	108	(75 - 117)
Toluene-d8	99	(86 - 122)
Bromofluorobenzene	95	(60 - 137)

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW106

GC/MS Volatiles

Lot-Sample #...: A9F140142-035 **Work Order #...:** CWV9M102 **Matrix.....:** SOLID

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW106

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-035 **Work Order #...:** CWV9M101 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/19/99
Prep Batch #...: 9166107
Dilution Factor: 1
% Moisture.....: 9.8 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	370	ug/kg
Acenaphthylene	ND	370	ug/kg
Anthracene	ND	370	ug/kg
Benzo(a)anthracene	ND	370	ug/kg
Benzo(b)fluoranthene	ND	370	ug/kg
Benzo(k)fluoranthene	ND	370	ug/kg
Benzo(ghi)perylene	ND	370	ug/kg
Benzo(a)pyrene	ND	370	ug/kg
bis(2-Chloroethoxy) methane	ND	370	ug/kg
bis(2-Chloroethyl)-ether	ND	370	ug/kg
bis(2-Ethylhexyl) phthalate	ND	370	ug/kg
4-Bromophenyl phenyl ether	ND	370	ug/kg
Butyl benzyl phthalate	ND	370	ug/kg
4-Chloroaniline	ND	370	ug/kg
4-Chloro-3-methylphenol	ND	370	ug/kg
2-Chloronaphthalene	ND	370	ug/kg
2-Chlorophenol	ND	370	ug/kg
4-Chlorophenyl phenyl ether	ND	370	ug/kg
Chrysene	ND	370	ug/kg
Dibenz(a,h)anthracene	ND	370	ug/kg
Dibenzofuran	ND	370	ug/kg
Di-n-butyl phthalate	ND	370	ug/kg
1,2-Dichlorobenzene	ND	370	ug/kg
1,3-Dichlorobenzene	ND	370	ug/kg
1,4-Dichlorobenzene	ND	370	ug/kg
3,3'-Dichlorobenzidine	ND	370	ug/kg
2,4-Dichlorophenol	ND	370	ug/kg
Diethyl phthalate	ND	370	ug/kg
2,4-Dimethylphenol	ND	370	ug/kg
Dimethyl phthalate	ND	370	ug/kg
Di-n-octyl phthalate	ND	370	ug/kg
4,6-Dinitro-2-methylphenol	ND	890	ug/kg

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW106

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-035 **Work Order #...:** CWV9M101 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	890	ug/kg
2,4-Dinitrotoluene	ND	370	ug/kg
2,6-Dinitrotoluene	ND	370	ug/kg
Fluoranthene	ND	370	ug/kg
Fluorene	ND	370	ug/kg
Hexachlorobenzene	ND	370	ug/kg
Hexachlorobutadiene	ND	370	ug/kg
Hexachlorocyclopenta-diene	ND	370	ug/kg
Hexachloroethane	ND	370	ug/kg
Indeno(1,2,3-cd)pyrene	ND	370	ug/kg
Isophorone	ND	370	ug/kg
2-Methylnaphthalene	ND	370	ug/kg
2-Methylphenol	ND	370	ug/kg
Naphthalene	ND	370	ug/kg
2-Nitroaniline	ND	890	ug/kg
3-Nitroaniline	ND	890	ug/kg
4-Nitroaniline	ND	890	ug/kg
Nitrobenzene	ND	370	ug/kg
2-Nitrophenol	ND	370	ug/kg
4-Nitrophenol	ND	890	ug/kg
N-Nitrosodi-n-propyl-amine	ND	370	ug/kg
N-Nitrosodiphenylamine	ND	370	ug/kg
Pentachlorophenol	ND	890	ug/kg
Phenanthrene	ND	370	ug/kg
Phenol	ND	370	ug/kg
Pyrene	ND	370	ug/kg
1,2,4-Trichlorobenzene	ND	370	ug/kg
2,4,5-Trichlorophenol	ND	370	ug/kg
2,4,6-Trichlorophenol	ND	370	ug/kg
Carbazole	ND	370	ug/kg
4-Methylphenol	ND	370	ug/kg
bis(2-Chloroisopropyl) ether	ND	370	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	73	(23 - 120)
Terphenyl-d14	93	(18 - 137)
2-Fluorobiphenyl	78	(30 - 115)
2-Fluorophenol	62	(30 - 115)
Phenol-d5	73	(24 - 113)
2,4,6-Tribromophenol	18 *	(19 - 122)

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVLT101 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Fluoranthene	ND	10	ug/L	SW846 8270C
Fluorene	ND	10	ug/L	SW846 8270C
Hexachlorobenzene	ND	10	ug/L	SW846 8270C
Hexachlorobutadiene	ND	10	ug/L	SW846 8270C
Hexachlorocyclopenta-diene	ND	10	ug/L	SW846 8270C
Hexachloroethane	ND	10	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C
Isophorone	ND	10	ug/L	SW846 8270C
2-Methylnaphthalene	ND	10	ug/L	SW846 8270C
2-Methylphenol	ND	10	ug/L	SW846 8270C
Naphthalene	ND	10	ug/L	SW846 8270C
2-Nitroaniline	ND	25	ug/L	SW846 8270C
3-Nitroaniline	ND	25	ug/L	SW846 8270C
4-Nitroaniline	ND	25	ug/L	SW846 8270C
Nitrobenzene	ND	10	ug/L	SW846 8270C
2-Nitrophenol	ND	10	ug/L	SW846 8270C
4-Nitrophenol	ND	25	ug/L	SW846 8270C
-Nitrosodi-n-propyl-amine	ND	10	ug/L	SW846 8270C
N-Nitrosodiphenylamine	ND	10	ug/L	SW846 8270C
Pentachlorophenol	ND	25	ug/L	SW846 8270C
Phenanthrene	ND	10	ug/L	SW846 8270C
Phenol	ND	10	ug/L	SW846 8270C
Pyrene	ND	10	ug/L	SW846 8270C
1,2,4-Trichlorobenzene	ND	10	ug/L	SW846 8270C
2,4,5-Trichlorophenol	ND	10	ug/L	SW846 8270C
2,4,6-Trichlorophenol	ND	10	ug/L	SW846 8270C
Carbazole	ND	10	ug/L	SW846 8270C
4-Methylphenol	ND	10	ug/L	SW846 8270C
bis(2-Chloroisopropyl) ether	ND	10	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	73	(40 - 114)
Terphenyl-d14	79	(33 - 141)
2-Fluorobiphenyl	71	(45 - 118)
2-Fluorophenol	62	(21 - 100)
Phenol-d5	67	(17 - 101)
2,4,6-Tribromophenol	64	(16 - 129)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW106

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-035 **Work Order #...:** CWV9M101 **Matrix.....:** SOLID

NOTE(S):

* Surrogate recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW106

GC Semivolatiles

Lot-Sample #...: A9F140142-035 **Work Order #...:** CWV9M103 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9166108
Dilution Factor: 1
% Moisture.....: 9.8 **Method.....:** SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	37	ug/kg
Aroclor 1221	ND	37	ug/kg
Aroclor 1232	ND	37	ug/kg
Aroclor 1242	ND	37	ug/kg
Aroclor 1248	ND	37	ug/kg
Aroclor 1254	**74**	**37**	**ug/kg**
Aroclor 1260	**47**	**37**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	74	(10 - 129)
Decachlorobiphenyl	93	(10 - 138)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW106

TOTAL Metals

Lot-Sample #...: A9F140142-035 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
% Moisture.....: 9.8

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174305						
Silver	ND	0.55	mg/kg	SW846 6010B	06/24-07/16/99	CWV9M10K
		Dilution Factor: 1				
Aluminum	**4960**	**22.2**	**mg/kg**	**SW846 6010B**	**06/24-07/15/99**	**CWV9M104**
		Dilution Factor: 1				
Arsenic	**3.2**	**1.1**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9M10L**
		Dilution Factor: 1				
Barium	**24.6**	**22.2**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9M105**
		Dilution Factor: 1				
Beryllium	ND	0.55	mg/kg	SW846 6010B	06/24-07/16/99	CWV9M106
		Dilution Factor: 1				
Cadmium	ND	0.22	mg/kg	SW846 6010B	06/24-07/16/99	CWV9M10M
		Dilution Factor: 1				
Calcium	**7770**	**555**	**mg/kg**	**SW846 6010B**	**06/24-07/15/99**	**CWV9M107**
		Dilution Factor: 1				
Chromium	**7.6**	**0.55**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9M10N**
		Dilution Factor: 1				
Cobalt	ND	5.5	mg/kg	SW846 6010B	06/24-07/16/99	CWV9M108
		Dilution Factor: 1				
Lead	**28.0**	**0.33**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9M10P**
		Dilution Factor: 1				
Copper	**5.0**	**2.8**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9M109**
		Dilution Factor: 1				
Antimony	ND	1.1	mg/kg	SW846 6010B	06/24-07/16/99	CWV9M10Q
		Dilution Factor: 1				
Iron	**10100**	**11.1**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9M10A**
		Dilution Factor: 1				
Mercury	ND	0.11	mg/kg	SW846 7471A	06/24-06/28/99	CWV9M10T
		Dilution Factor: 1				

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW106

TOTAL Metals

Lot-Sample #...: A9F140142-035 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	ND	0.55	mg/kg	SW846 6010B	06/24-07/16/99	CWV9M10R
		Dilution Factor: 1				
Potassium	ND	555	mg/kg	SW846 6010B	06/24-07/15/99	CWV9M10C
		Dilution Factor: 1				
Thallium	ND	1.1	mg/kg	SW846 6010B	06/24-07/16/99	CWV9M10W
		Dilution Factor: 1				
Magnesium	**2080**	**555**	**mg/kg**	**SW846 6010B**	**06/24-07/15/99**	**CWV9M10D**
		Dilution Factor: 1				
Manganese	**166**	**1.7**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9M10E**
		Dilution Factor: 1				
Sodium	ND	555	mg/kg	SW846 6010B	06/24-07/15/99	CWV9M10F
		Dilution Factor: 1				
Nickel	**6.5**	**4.4**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9M10G**
		Dilution Factor: 1				
Vanadium	**13.8**	**5.5**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9M10H**
		Dilution Factor: 1				
Zinc	**31.4 MBD**	**2.2**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9M10J**
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

MBD This analyte is present in the associated method blank at an amount that is less than two times the reporting limit.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW107

HPLC

Lot-Sample #...: A9F140142-009 **Work Order #...:** CWV8K10A **Matrix.....:** SOLID
Date Sampled...: 06/10/99 11:45 **Date Received..:** 06/11/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
4-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	107	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW107

TOTAL Metals

Lot-Sample #...: A9F140142-009 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 11:45 **Date Received..:** 06/11/99
% Moisture.....: 17

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174294						
Silver	ND	0.61 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV8K102
Arsenic	**4.5**	**1.2** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8K103**
Barium	**31.9**	**24.2** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8K101**
Cadmium	ND	0.24 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV8K104
Chromium	**15.9**	**0.61** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8K105**
Lead	**115**	**0.36** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8K106**
Mercury	**0.16**	**0.12** Dilution Factor: 1	**mg/kg**	**SW846 7471A**	**06/24-06/28/99**	**CWV8K108**
Selenium	ND	0.61 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV8K107

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW108

HPLC

Lot-Sample #...: A9F140142-010 **Work Order #...:** CWV8L10A **Matrix.....:** SOLID
Date Sampled...: 06/10/99 12:00 **Date Received..:** 06/11/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1
% Moisture.....: 8.0 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	**0.60**	**0.25**	**mg/kg**
4-Amino-2,6-dinitrotoluene	**1.2**	**0.25**	**mg/kg**
2-Amino-4,6-dinitrotoluene	**2.3**	**0.25**	**mg/kg**
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
4-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	107	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW108

TOTAL Metals

Lot-Sample #...: A9F140142-010 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 12:00 **Date Received..:** 06/11/99
% Moisture.....: 8.0

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174294						
Silver	ND	0.54 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV8L102
Arsenic	**3.8**	**1.1** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8L103**
Barium	**26.8**	**21.7** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8L101**
Cadmium	ND	0.22 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV8L104
Chromium	**11.5**	**0.54** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8L105**
Lead	**43.1**	**0.33** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8L106**
Mercury	**0.32**	**0.11** Dilution Factor: 1	**mg/kg**	**SW846 7471A**	**06/24-06/28/99**	**CWV8L108**
Selenium	**0.89**	**0.54** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8L107**

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW109

HPLC

Lot-Sample #...: A9F140142-011 **Work Order #...:** CWV8M10A **Matrix.....:** SOLID
Date Sampled...: 06/10/99 12:15 **Date Received..:** 06/11/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1
% Moisture.....: 11 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	**1.4**	**0.25**	**mg/kg**
4-Amino-2,6-dinitrotoluene	**0.66**	**0.25**	**mg/kg**
2-Amino-4,6-dinitrotoluene	**0.74**	**0.25**	**mg/kg**
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
4-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	106	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW109

TOTAL Metals

Lot-Sample #...: A9F140142-011 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 12:15 **Date Received..:** 06/11/99
% Moisture.....: 11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174294						
Silver	ND	0.56 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV8M102
Arsenic	**3.8**	**1.1** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8M103**
Barium	**28.2**	**22.6** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8M101**
Cadmium	ND	0.23 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV8M104
Chromium	**12.4**	**0.56** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8M105**
Lead	**39.7**	**0.34** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8M106**
Mercury	ND	0.11 Dilution Factor: 1	mg/kg	SW846 7471A	06/24-06/28/99	CWV8M108
Selenium	ND	0.56 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV8M107

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW110

HPLC

Lot-Sample #...: A9F140142-036 **Work Order #...:** CWV9N10R **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
Prep Date.....: 06/20/99 **Analysis Date..:** 06/24/99
Prep Batch #...: 9171101
Dilution Factor: 25000
% Moisture.....: 25 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	12000	mg/kg
RDX	ND	12000	mg/kg
1,3,5-Trinitrobenzene	ND	6200	mg/kg
1,3-Dinitrobenzene	ND	6200	mg/kg
Tetryl	ND	16000	mg/kg
Nitrobenzene	ND	6200	mg/kg
2,4,6-Trinitrotoluene	**170000**	**6200**	**mg/kg**
4-Amino-2,6-dinitrotoluene	ND	6200	mg/kg
2-Amino-4,6-dinitrotoluene	ND	6200	mg/kg
2,6-Dinitrotoluene	ND	6200	mg/kg
2,4-Dinitrotoluene	ND	6200	mg/kg
2-Nitrotoluene	ND	6200	mg/kg
4-Nitrotoluene	ND	6200	mg/kg
3-Nitrotoluene	ND	6200	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	NC,DIL	(76 - 124)

NOTE(S):

NC The recovery and/or RPD were not calculated.

DIL The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW110

TOTAL Metals

Lot-Sample #...: A9F140142-036 **Matrix.....:** SOLID
Date Sampled...: 06/10/99 **Date Received..:** 06/12/99
% Moisture.....: 25

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174305						
Silver	ND	0.67	mg/kg	SW846 6010B	06/24-07/16/99	CWV9N10G
		Dilution Factor: 1				
Aluminum	**8020**	**26.8**	**mg/kg**	**SW846 6010B**	**06/24-07/15/99**	**CWV9N101**
		Dilution Factor: 1				
Arsenic	**4.9**	**1.3**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9N10H**
		Dilution Factor: 1				
Barium	**44.7**	**26.8**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9N102**
		Dilution Factor: 1				
Beryllium	ND	0.67	mg/kg	SW846 6010B	06/24-07/16/99	CWV9N103
		Dilution Factor: 1				
Cadmium	ND	0.27	mg/kg	SW846 6010B	06/24-07/16/99	CWV9N10J
		Dilution Factor: 1				
Calcium	**20100**	**670**	**mg/kg**	**SW846 6010B**	**06/24-07/15/99**	**CWV9N104**
		Dilution Factor: 1				
Chromium	**14.2**	**0.67**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9N10K**
		Dilution Factor: 1				
Cobalt	ND	6.7	mg/kg	SW846 6010B	06/24-07/16/99	CWV9N105
		Dilution Factor: 1				
Lead	**149**	**0.40**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9N10L**
		Dilution Factor: 1				
Copper	**9.5**	**3.3**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9N106**
		Dilution Factor: 1				
Antimony	**3.9**	**1.3**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9N10M**
		Dilution Factor: 1				
Iron	**16400**	**13.4**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9N107**
		Dilution Factor: 1				
Mercury	**0.22**	**0.13**	**mg/kg**	**SW846 7471A**	**06/24-06/28/99**	**CWV9N10P**
		Dilution Factor: 1				

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW110

TOTAL Metals

Lot-Sample #...: A9F140142-036 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Selenium	ND	0.67	mg/kg	SW846 6010B	06/24-07/16/99	CWV9N10N
		Dilution Factor: 1				
Potassium	ND	670	mg/kg	SW846 6010B	06/24-07/15/99	CWV9N108
		Dilution Factor: 1				
Thallium	ND	1.3	mg/kg	SW846 6010B	06/24-07/16/99	CWV9N10T
		Dilution Factor: 1				
Magnesium	**2380**	**670**	**mg/kg**	**SW846 6010B**	**06/24-07/15/99**	**CWV9N109**
		Dilution Factor: 1				
Manganese	**257**	**2.0**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9N10A**
		Dilution Factor: 1				
Sodium	ND	670	mg/kg	SW846 6010B	06/24-07/15/99	CWV9N10C
		Dilution Factor: 1				
Nickel	**9.0**	**5.4**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9N10D**
		Dilution Factor: 1				
Vanadium	**26.5**	**6.7**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9N10E**
		Dilution Factor: 1				
Zinc	**50.7 MBD**	**2.7**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV9N10F**
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

MBD This analyte is present in the associated method blank at an amount that is less than two times the reporting limit.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW101

HPLC

Lot-Sample #...: A9F140142-001 **Work Order #...:** CWV8810C **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:00 **Date Received..:** 06/11/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1
% Moisture.....: 19 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
4-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	108	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW101

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-001 **Work Order #...:** CWV88101 **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:00 **Date Received..:** 06/11/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/18/99
Prep Batch #...: 9166107
Dilution Factor: 1
% Moisture.....: 19 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	410	ug/kg
Acenaphthylene	ND	410	ug/kg
Anthracene	ND	410	ug/kg
Benzo(a)anthracene	ND	410	ug/kg
Benzo(b)fluoranthene	ND	410	ug/kg
Benzo(k)fluoranthene	ND	410	ug/kg
Benzo(ghi)perylene	ND	410	ug/kg
Benzo(a)pyrene	ND	410	ug/kg
bis(2-Chloroethoxy) methane	ND	410	ug/kg
bis(2-Chloroethyl)-ether	ND	410	ug/kg
bis(2-Ethylhexyl) phthalate	ND	410	ug/kg
4-Bromophenyl phenyl ether	ND	410	ug/kg
Butyl benzyl phthalate	ND	410	ug/kg
4-Chloroaniline	ND	410	ug/kg
4-Chloro-3-methylphenol	ND	410	ug/kg
2-Chloronaphthalene	ND	410	ug/kg
2-Chlorophenol	ND	410	ug/kg
4-Chlorophenyl phenyl ether	ND	410	ug/kg
Chrysene	ND	410	ug/kg
Dibenz(a,h)anthracene	ND	410	ug/kg
Dibenzofuran	ND	410	ug/kg
Di-n-butyl phthalate	ND	410	ug/kg
1,2-Dichlorobenzene	ND	410	ug/kg
1,3-Dichlorobenzene	ND	410	ug/kg
1,4-Dichlorobenzene	ND	410	ug/kg
3,3'-Dichlorobenzidine	ND	410	ug/kg
2,4-Dichlorophenol	ND	410	ug/kg
Diethyl phthalate	ND	410	ug/kg
2,4-Dimethylphenol	ND	410	ug/kg
Dimethyl phthalate	ND	410	ug/kg
Di-n-octyl phthalate	ND	410	ug/kg
4,6-Dinitro-2-methylphenol	ND	990	ug/kg

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW101

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-001 **Work Order #...:** CWV88101 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	990	ug/kg
2,4-Dinitrotoluene	ND	410	ug/kg
2,6-Dinitrotoluene	ND	410	ug/kg
Fluoranthene	ND	410	ug/kg
Fluorene	ND	410	ug/kg
Hexachlorobenzene	ND	410	ug/kg
Hexachlorobutadiene	ND	410	ug/kg
Hexachlorocyclopenta-diene	ND	410	ug/kg
Hexachloroethane	ND	410	ug/kg
Indeno(1,2,3-cd)pyrene	ND	410	ug/kg
Isophorone	ND	410	ug/kg
2-Methylnaphthalene	ND	410	ug/kg
2-Methylphenol	ND	410	ug/kg
Naphthalene	ND	410	ug/kg
2-Nitroaniline	ND	990	ug/kg
3-Nitroaniline	ND	990	ug/kg
4-Nitroaniline	ND	990	ug/kg
Nitrobenzene	ND	410	ug/kg
2-Nitrophenol	ND	410	ug/kg
4-Nitrophenol	ND	990	ug/kg
N-Nitrosodi-n-propyl-amine	ND	410	ug/kg
N-Nitrosodiphenylamine	ND	410	ug/kg
Pentachlorophenol	ND	990	ug/kg
Phenanthrene	ND	410	ug/kg
Phenol	ND	410	ug/kg
Pyrene	ND	410	ug/kg
1,2,4-Trichlorobenzene	ND	410	ug/kg
2,4,5-Trichlorophenol	ND	410	ug/kg
2,4,6-Trichlorophenol	ND	410	ug/kg
Carbazole	ND	410	ug/kg
4-Methylphenol	ND	410	ug/kg
bis(2-Chloroisopropyl) ether	ND	410	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	76	(23 - 120)
Terphenyl-d14	81	(18 - 137)
2-Fluorobiphenyl	71	(30 - 115)
2-Fluorophenol	68	(30 - 115)
Phenol-d5	70	(24 - 113)
2,4,6-Tribromophenol	35	(19 - 122)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW101

TOTAL Metals

Lot-Sample #...: A9F140142-001 **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:00 **Date Received..:** 06/11/99
% Moisture.....: 19

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174294						
Silver	ND	0.62	mg/kg	SW846 6010B	06/24-07/16/99	CWV88103
		Dilution Factor: 1				
Arsenic	**3.7**	**1.2**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV88104**
		Dilution Factor: 1				
Barium	ND	24.8	mg/kg	SW846 6010B	06/24-07/16/99	CWV88102
		Dilution Factor: 1				
Cadmium	ND	0.25	mg/kg	SW846 6010B	06/24-07/16/99	CWV88105
		Dilution Factor: 1				
Chromium	**8.2**	**0.62**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV88106**
		Dilution Factor: 1				
Lead	**2.8**	**0.37**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV88107**
		Dilution Factor: 1				
Mercury	ND	0.12	mg/kg	SW846 7471A	06/24-06/28/99	CWV88109
		Dilution Factor: 1				
Selenium	ND	0.62	mg/kg	SW846 6010B	06/24-07/16/99	CWV88108
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW102

HPLC

Lot-Sample #...: A9F140142-002 **Work Order #...:** CWV8910C **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:10 **Date Received..:** 06/11/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1
% Moisture.....: 22 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
4-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	103	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW102

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-002 **Work Order #...:** CWV89101 **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:10 **Date Received..:** 06/11/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/18/99
Prep Batch #...: 9166107
Dilution Factor: 1
% Moisture.....: 22 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	430	ug/kg
Acenaphthylene	ND	430	ug/kg
Anthracene	ND	430	ug/kg
Benzo(a)anthracene	ND	430	ug/kg
Benzo(b)fluoranthene	ND	430	ug/kg
Benzo(k)fluoranthene	ND	430	ug/kg
Benzo(ghi)perylene	ND	430	ug/kg
Benzo(a)pyrene	ND	430	ug/kg
bis(2-Chloroethoxy) methane	ND	430	ug/kg
bis(2-Chloroethyl)-ether	ND	430	ug/kg
bis(2-Ethylhexyl) phthalate	ND	430	ug/kg
4-Bromophenyl phenyl ether	ND	430	ug/kg
Butyl benzyl phthalate	ND	430	ug/kg
4-Chloroaniline	ND	430	ug/kg
4-Chloro-3-methylphenol	ND	430	ug/kg
2-Chloronaphthalene	ND	430	ug/kg
2-Chlorophenol	ND	430	ug/kg
4-Chlorophenyl phenyl ether	ND	430	ug/kg
Chrysene	ND	430	ug/kg
Dibenz(a,h)anthracene	ND	430	ug/kg
Dibenzofuran	ND	430	ug/kg
Di-n-butyl phthalate	ND	430	ug/kg
1,2-Dichlorobenzene	ND	430	ug/kg
1,3-Dichlorobenzene	ND	430	ug/kg
1,4-Dichlorobenzene	ND	430	ug/kg
3,3'-Dichlorobenzidine	ND	430	ug/kg
2,4-Dichlorophenol	ND	430	ug/kg
Diethyl phthalate	ND	430	ug/kg
2,4-Dimethylphenol	ND	430	ug/kg
Dimethyl phthalate	ND	430	ug/kg
Di-n-octyl phthalate	ND	430	ug/kg
4,6-Dinitro-2-methylphenol	ND	1000	ug/kg

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW102

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-002 **Work Order #...:** CWV89101 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	1000	ug/kg
2,4-Dinitrotoluene	ND	430	ug/kg
2,6-Dinitrotoluene	ND	430	ug/kg
Fluoranthene	ND	430	ug/kg
Fluorene	ND	430	ug/kg
Hexachlorobenzene	ND	430	ug/kg
Hexachlorobutadiene	ND	430	ug/kg
Hexachlorocyclopenta-diene	ND	430	ug/kg
Hexachloroethane	ND	430	ug/kg
Indeno(1,2,3-cd)pyrene	ND	430	ug/kg
Isophorone	ND	430	ug/kg
2-Methylnaphthalene	ND	430	ug/kg
2-Methylphenol	ND	430	ug/kg
Naphthalene	ND	430	ug/kg
2-Nitroaniline	ND	1000	ug/kg
3-Nitroaniline	ND	1000	ug/kg
4-Nitroaniline	ND	1000	ug/kg
Nitrobenzene	ND	430	ug/kg
2-Nitrophenol	ND	430	ug/kg
4-Nitrophenol	ND	1000	ug/kg
N-Nitrosodi-n-propyl-amine	ND	430	ug/kg
N-Nitrosodiphenylamine	ND	430	ug/kg
Pentachlorophenol	ND	1000	ug/kg
Phenanthrene	ND	430	ug/kg
Phenol	ND	430	ug/kg
Pyrene	ND	430	ug/kg
1,2,4-Trichlorobenzene	ND	430	ug/kg
2,4,5-Trichlorophenol	ND	430	ug/kg
2,4,6-Trichlorophenol	ND	430	ug/kg
Carbazole	ND	430	ug/kg
4-Methylphenol	ND	430	ug/kg
bis(2-Chloroisopropyl) ether	ND	430	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	75	(23 - 120)
Terphenyl-d14	86	(18 - 137)
2-Fluorobiphenyl	80	(30 - 115)
2-Fluorophenol	71	(30 - 115)
Phenol-d5	72	(24 - 113)
2,4,6-Tribromophenol	47	(19 - 122)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW102

TOTAL Metals

Lot-Sample #...: A9F140142-002 **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:10 **Date Received..:** 06/11/99
% Moisture.....: 22

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174294						
Silver	ND	0.64	mg/kg	SW846 6010B	06/24-07/16/99	CWV89103
		Dilution Factor: 1				
Arsenic	**11.0**	**1.3**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV89104**
		Dilution Factor: 1				
Barium	**47.4**	**25.8**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV89102**
		Dilution Factor: 1				
Cadmium	**0.26**	**0.26**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV89105**
		Dilution Factor: 1				
Chromium	**14.0**	**0.64**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV89106**
		Dilution Factor: 1				
Lead	**8.9**	**0.39**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV89107**
		Dilution Factor: 1				
Mercury	ND	0.13	mg/kg	SW846 7471A	06/24-06/28/99	CWV89109
		Dilution Factor: 1				
Selenium	**0.85**	**0.64**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV89108**
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW103

HPLC

Lot-Sample #...: A9F140142-003 **Work Order #...:** CWV8A10C **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:20 **Date Received..:** 06/11/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
4-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	109	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW103

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-003 **Work Order #...:** CWV8A101 **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:20 **Date Received..:** 06/11/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/18/99
Prep Batch #...: 9166107
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	400	ug/kg
Acenaphthylene	ND	400	ug/kg
Anthracene	ND	400	ug/kg
Benzo(a)anthracene	ND	400	ug/kg
Benzo(b)fluoranthene	ND	400	ug/kg
Benzo(k)fluoranthene	ND	400	ug/kg
Benzo(ghi)perylene	ND	400	ug/kg
Benzo(a)pyrene	ND	400	ug/kg
bis(2-Chloroethoxy) methane	ND	400	ug/kg
bis(2-Chloroethyl)-ether	ND	400	ug/kg
bis(2-Ethylhexyl) phthalate	ND	400	ug/kg
4-Bromophenyl phenyl ether	ND	400	ug/kg
Butyl benzyl phthalate	ND	400	ug/kg
4-Chloroaniline	ND	400	ug/kg
4-Chloro-3-methylphenol	ND	400	ug/kg
2-Chloronaphthalene	ND	400	ug/kg
2-Chlorophenol	ND	400	ug/kg
4-Chlorophenyl phenyl ether	ND	400	ug/kg
Chrysene	ND	400	ug/kg
Dibenz(a,h)anthracene	ND	400	ug/kg
Dibenzofuran	ND	400	ug/kg
Di-n-butyl phthalate	ND	400	ug/kg
1,2-Dichlorobenzene	ND	400	ug/kg
1,3-Dichlorobenzene	ND	400	ug/kg
1,4-Dichlorobenzene	ND	400	ug/kg
3,3'-Dichlorobenzidine	ND	400	ug/kg
2,4-Dichlorophenol	ND	400	ug/kg
Diethyl phthalate	ND	400	ug/kg
2,4-Dimethylphenol	ND	400	ug/kg
Dimethyl phthalate	ND	400	ug/kg
Di-n-octyl phthalate	ND	400	ug/kg
4,6-Dinitro-2-methylphenol	ND	970	ug/kg

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW103

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-003 **Work Order #...:** CWV8A101 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	970	ug/kg
2,4-Dinitrotoluene	ND	400	ug/kg
2,6-Dinitrotoluene	ND	400	ug/kg
Fluoranthene	ND	400	ug/kg
Fluorene	ND	400	ug/kg
Hexachlorobenzene	ND	400	ug/kg
Hexachlorobutadiene	ND	400	ug/kg
Hexachlorocyclopenta-diene	ND	400	ug/kg
Hexachloroethane	ND	400	ug/kg
Indeno(1,2,3-cd)pyrene	ND	400	ug/kg
Isophorone	ND	400	ug/kg
2-Methylnaphthalene	ND	400	ug/kg
2-Methylphenol	ND	400	ug/kg
Naphthalene	ND	400	ug/kg
2-Nitroaniline	ND	970	ug/kg
3-Nitroaniline	ND	970	ug/kg
4-Nitroaniline	ND	970	ug/kg
Nitrobenzene	ND	400	ug/kg
2-Nitrophenol	ND	400	ug/kg
4-Nitrophenol	ND	970	ug/kg
N-Nitrosodi-n-propyl-amine	ND	400	ug/kg
N-Nitrosodiphenylamine	ND	400	ug/kg
Pentachlorophenol	ND	970	ug/kg
Phenanthrene	ND	400	ug/kg
Phenol	ND	400	ug/kg
Pyrene	ND	400	ug/kg
1,2,4-Trichlorobenzene	ND	400	ug/kg
2,4,5-Trichlorophenol	ND	400	ug/kg
2,4,6-Trichlorophenol	ND	400	ug/kg
Carbazole	ND	400	ug/kg
4-Methylphenol	ND	400	ug/kg
bis(2-Chloroisopropyl) ether	ND	400	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	68	(23 - 120)
Terphenyl-d14	81	(18 - 137)
2-Fluorobiphenyl	72	(30 - 115)
2-Fluorophenol	61	(30 - 115)
Phenol-d5	65	(24 - 113)
2,4,6-Tribromophenol	20	(19 - 122)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW103

TOTAL Metals

Lot-Sample #...: A9F140142-003 **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:20 **Date Received..:** 06/11/99
% Moisture.....: 17

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174294						
Silver	ND	0.60 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV8A103
Arsenic	**12.2**	**1.2** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8A104**
Barium	**28.1**	**24.2** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8A102**
Cadmium	ND	0.24 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV8A105
Chromium	**13.9**	**0.60** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8A106**
Lead	**8.5**	**0.36** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8A107**
Mercury	ND	0.12 Dilution Factor: 1	mg/kg	SW846 7471A	06/24-06/28/99	CWV8A109
Selenium	**0.73**	**0.60** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8A108**

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW104

HPLC

Lot-Sample #...: A9F140142-004 **Work Order #...:** CWV8D10C **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:30 **Date Received..:** 06/11/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1
% Moisture.....: 14 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
4-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	102	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW104

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-004 **Work Order #...:** CWV8D101 **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:30 **Date Received..:** 06/11/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/18/99
Prep Batch #...: 9166107
Dilution Factor: 1
% Moisture.....: 14 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	380	ug/kg
Acenaphthylene	ND	380	ug/kg
Anthracene	ND	380	ug/kg
Benzo(a)anthracene	ND	380	ug/kg
Benzo(b)fluoranthene	ND	380	ug/kg
Benzo(k)fluoranthene	ND	380	ug/kg
Benzo(ghi)perylene	ND	380	ug/kg
Benzo(a)pyrene	ND	380	ug/kg
bis(2-Chloroethoxy) methane	ND	380	ug/kg
bis(2-Chloroethyl)-ether	ND	380	ug/kg
bis(2-Ethylhexyl) phthalate	ND	380	ug/kg
4-Bromophenyl phenyl ether	ND	380	ug/kg
Butyl benzyl phthalate	ND	380	ug/kg
4-Chloroaniline	ND	380	ug/kg
4-Chloro-3-methylphenol	ND	380	ug/kg
2-Chloronaphthalene	ND	380	ug/kg
2-Chlorophenol	ND	380	ug/kg
4-Chlorophenyl phenyl ether	ND	380	ug/kg
Chrysene	ND	380	ug/kg
Dibenz(a,h)anthracene	ND	380	ug/kg
Dibenzofuran	ND	380	ug/kg
Di-n-butyl phthalate	ND	380	ug/kg
1,2-Dichlorobenzene	ND	380	ug/kg
1,3-Dichlorobenzene	ND	380	ug/kg
1,4-Dichlorobenzene	ND	380	ug/kg
3,3'-Dichlorobenzidine	ND	380	ug/kg
2,4-Dichlorophenol	ND	380	ug/kg
Diethyl phthalate	ND	380	ug/kg
2,4-Dimethylphenol	ND	380	ug/kg
Dimethyl phthalate	ND	380	ug/kg
Di-n-octyl phthalate	ND	380	ug/kg
4,6-Dinitro-2-methylphenol	ND	930	ug/kg

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW104

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-004 **Work Order #...:** CWV8D101 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	930	ug/kg
2,4-Dinitrotoluene	ND	380	ug/kg
2,6-Dinitrotoluene	ND	380	ug/kg
Fluoranthene	ND	380	ug/kg
Fluorene	ND	380	ug/kg
Hexachlorobenzene	ND	380	ug/kg
Hexachlorobutadiene	ND	380	ug/kg
Hexachlorocyclopenta-diene	ND	380	ug/kg
Hexachloroethane	ND	380	ug/kg
Indeno(1,2,3-cd)pyrene	ND	380	ug/kg
Isophorone	ND	380	ug/kg
2-Methylnaphthalene	ND	380	ug/kg
2-Methylphenol	ND	380	ug/kg
Naphthalene	ND	380	ug/kg
2-Nitroaniline	ND	930	ug/kg
3-Nitroaniline	ND	930	ug/kg
4-Nitroaniline	ND	930	ug/kg
Nitrobenzene	ND	380	ug/kg
2-Nitrophenol	ND	380	ug/kg
4-Nitrophenol	ND	930	ug/kg
N-Nitrosodi-n-propyl-amine	ND	380	ug/kg
N-Nitrosodiphenylamine	ND	380	ug/kg
Pentachlorophenol	ND	930	ug/kg
Phenanthrene	ND	380	ug/kg
Phenol	ND	380	ug/kg
Pyrene	ND	380	ug/kg
1,2,4-Trichlorobenzene	ND	380	ug/kg
2,4,5-Trichlorophenol	ND	380	ug/kg
2,4,6-Trichlorophenol	ND	380	ug/kg
Carbazole	ND	380	ug/kg
4-Methylphenol	ND	380	ug/kg
bis(2-Chloroisopropyl) ether	ND	380	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	73	(23 - 120)
Terphenyl-d14	86	(18 - 137)
2-Fluorobiphenyl	76	(30 - 115)
2-Fluorophenol	65	(30 - 115)
Phenol-d5	72	(24 - 113)
2,4,6-Tribromophenol	15 *	(19 - 122)

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW104

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-004 Work Order #...: CWV8D101 Matrix.....: SOLID

NOTE(S):

* Surrogate recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW104

TOTAL Metals

Lot-Sample #...: A9F140142-004 **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:30 **Date Received..:** 06/11/99
% Moisture.....: 14

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174294						
Silver	ND	0.58 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV8D103
Arsenic	**3.6**	**1.2** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8D104**
Barium	**38.9**	**23.3** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8D102**
Cadmium	ND	0.23 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV8D105
Chromium	**15.3**	**0.58** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8D106**
ead	**5.3**	**0.35** Dilution Factor: 1	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8D107**
Mercury	ND	0.12 Dilution Factor: 1	mg/kg	SW846 7471A	06/24-06/28/99	CWV8D109
Selenium	ND	0.58 Dilution Factor: 1	mg/kg	SW846 6010B	06/24-07/16/99	CWV8D108

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW105

HPLC

Lot-Sample #...: A9F140142-006 **Work Order #...:** CWV8F10C **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:40 **Date Received..:** 06/11/99
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
2-Nitrotoluene	ND	0.25	mg/kg
4-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	107	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW105

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-006 **Work Order #...:** CWV8F101 **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:40 **Date Received..:** 06/11/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/18/99
Prep Batch #...: 9166107
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	400	ug/kg
Acenaphthylene	ND	400	ug/kg
Anthracene	ND	400	ug/kg
Benzo(a)anthracene	ND	400	ug/kg
Benzo(b)fluoranthene	ND	400	ug/kg
Benzo(k)fluoranthene	ND	400	ug/kg
Benzo(ghi)perylene	ND	400	ug/kg
Benzo(a)pyrene	ND	400	ug/kg
bis(2-Chloroethoxy) methane	ND	400	ug/kg
bis(2-Chloroethyl)-ether	ND	400	ug/kg
bis(2-Ethylhexyl) phthalate	ND	400	ug/kg
4-Bromophenyl phenyl ether	ND	400	ug/kg
Butyl benzyl phthalate	ND	400	ug/kg
4-Chloroaniline	ND	400	ug/kg
4-Chloro-3-methylphenol	ND	400	ug/kg
2-Chloronaphthalene	ND	400	ug/kg
2-Chlorophenol	ND	400	ug/kg
4-Chlorophenyl phenyl ether	ND	400	ug/kg
Chrysene	ND	400	ug/kg
Dibenz(a,h)anthracene	ND	400	ug/kg
Dibenzofuran	ND	400	ug/kg
Di-n-butyl phthalate	ND	400	ug/kg
1,2-Dichlorobenzene	ND	400	ug/kg
1,3-Dichlorobenzene	ND	400	ug/kg
1,4-Dichlorobenzene	ND	400	ug/kg
3,3'-Dichlorobenzidine	ND	400	ug/kg
2,4-Dichlorophenol	ND	400	ug/kg
Diethyl phthalate	ND	400	ug/kg
2,4-Dimethylphenol	ND	400	ug/kg
Dimethyl phthalate	ND	400	ug/kg
Di-n-octyl phthalate	ND	400	ug/kg
4,6-Dinitro-2-methylphenol	ND	970	ug/kg

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW105

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-006 **Work Order #...:** CWV8F101 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	970	ug/kg
2,4-Dinitrotoluene	ND	400	ug/kg
2,6-Dinitrotoluene	ND	400	ug/kg
Fluoranthene	ND	400	ug/kg
Fluorene	ND	400	ug/kg
Hexachlorobenzene	ND	400	ug/kg
Hexachlorobutadiene	ND	400	ug/kg
Hexachlorocyclopenta-diene	ND	400	ug/kg
Hexachloroethane	ND	400	ug/kg
Indeno(1,2,3-cd)pyrene	ND	400	ug/kg
Isophorone	ND	400	ug/kg
2-Methylnaphthalene	ND	400	ug/kg
2-Methylphenol	ND	400	ug/kg
Naphthalene	ND	400	ug/kg
2-Nitroaniline	ND	970	ug/kg
3-Nitroaniline	ND	970	ug/kg
4-Nitroaniline	ND	970	ug/kg
Nitrobenzene	ND	400	ug/kg
2-Nitrophenol	ND	400	ug/kg
4-Nitrophenol	ND	970	ug/kg
N-Nitrosodi-n-propyl-amine	ND	400	ug/kg
N-Nitrosodiphenylamine	ND	400	ug/kg
Pentachlorophenol	ND	970	ug/kg
Phenanthrene	ND	400	ug/kg
Phenol	ND	400	ug/kg
Pyrene	ND	400	ug/kg
1,2,4-Trichlorobenzene	ND	400	ug/kg
2,4,5-Trichlorophenol	ND	400	ug/kg
2,4,6-Trichlorophenol	ND	400	ug/kg
Carbazole	ND	400	ug/kg
4-Methylphenol	ND	400	ug/kg
bis(2-Chloroisopropyl) ether	ND	400	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	74	(23 - 120)
Terphenyl-d14	76	(18 - 137)
2-Fluorobiphenyl	64	(30 - 115)
2-Fluorophenol	67	(30 - 115)
Phenol-d5	67	(24 - 113)
2,4,6-Tribromophenol	36	(19 - 122)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW105

TOTAL Metals

Lot-Sample #...: A9F140142-006 **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:40 **Date Received..:** 06/11/99
% Moisture.....: 17

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9174294						
Silver	ND	0.61	mg/kg	SW846 6010B	06/24-07/16/99	CWV8F103
		Dilution Factor: 1				
Arsenic	**7.7**	**1.2**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8F104**
		Dilution Factor: 1				
Barium	ND	24.2	mg/kg	SW846 6010B	06/24-07/16/99	CWV8F102
		Dilution Factor: 1				
Cadmium	ND	0.24	mg/kg	SW846 6010B	06/24-07/16/99	CWV8F105
		Dilution Factor: 1				
Chromium	**12.0**	**0.61**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8F106**
		Dilution Factor: 1				
ead	**4.8**	**0.36**	**mg/kg**	**SW846 6010B**	**06/24-07/16/99**	**CWV8F107**
		Dilution Factor: 1				
Mercury	ND	0.12	mg/kg	SW846 7471A	06/24-06/28/99	CWV8F109
		Dilution Factor: 1				
Selenium	ND	0.61	mg/kg	SW846 6010B	06/24-07/16/99	CWV8F108
		Dilution Factor: 1				

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SWW101

HPLC

Lot-Sample #...: A9F140142-012 **Work Order #...:** CWV8N10C **Matrix.....:** WATER
Date Sampled...: 06/10/99 15:00 **Date Received..:** 06/11/99
Prep Date.....: 06/16/99 **Analysis Date..:** 07/03/99
Prep Batch #...: 9167166
Dilution Factor: 1 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.20	ug/L
2,4-Dinitrotoluene	ND	0.20	ug/L
2,6-Dinitrotoluene	ND	0.20	ug/L
Nitrobenzene	ND	0.20	ug/L
1,3,5-Trinitrobenzene	ND	0.20	ug/L
2,4,6-Trinitrotoluene	ND	0.20	ug/L
HMX	ND	0.50	ug/L
RDX	ND	0.50	ug/L
Tetryl	ND	0.20	ug/L
2-Nitrotoluene	ND	0.20	ug/L
3-Nitrotoluene	ND	0.20	ug/L
4-Nitrotoluene	ND	0.20	ug/L
4-Amino-2,6-dinitrotoluene	ND	0.20	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	81	(32 - 127)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SWW101

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-012 **Work Order #...:** CWV8N101 **Matrix.....:** WATER
Date Sampled...: 06/10/99 15:00 **Date Received..:** 06/11/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/17/99
Prep Batch #...: 9166106
Dilution Factor: 1 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
bis(2-Chloroethyl)-ether	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Chrysene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Di-n-butyl phthalate	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
Dimethyl phthalate	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
4,6-Dinitro-2-methylphenol	ND	25	ug/L
2,4-Dinitrophenol	ND	25	ug/L

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SWW101

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-012 **Work Order #...:** CWV8N101 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
Hexachlorocyclopenta-diene	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
Naphthalene	ND	10	ug/L
2-Nitroaniline	ND	25	ug/L
3-Nitroaniline	ND	25	ug/L
4-Nitroaniline	ND	25	ug/L
Nitrobenzene	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
4-Nitrophenol	ND	25	ug/L
N-Nitrosodi-n-propyl-amine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Pentachlorophenol	ND	25	ug/L
Phenanthrene	ND	10	ug/L
Phenol	ND	10	ug/L
Pyrene	ND	10	ug/L
1,2,4-Trichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
Carbazole	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
bis(2-Chloroisopropyl) ether	ND	10	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	59	(40 - 114)
Terphenyl-d14	82	(33 - 141)
2-Fluorobiphenyl	59	(45 - 118)
2-Fluorophenol	50	(21 - 100)
Phenol-d5	53	(17 - 101)
2,4,6-Tribromophenol	56	(16 - 129)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SWW101

GC Semivolatiles

Lot-Sample #...: A9F140142-012 **Work Order #...:** CWV8N102 **Matrix.....:** WATER
Date Sampled...: 06/10/99 15:00 **Date Received..:** 06/11/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9166105
Dilution Factor: 1 **Method.....:** SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	0.50	ug/L
Aroclor 1221	ND	0.50	ug/L
Aroclor 1232	ND	0.50	ug/L
Aroclor 1242	ND	0.50	ug/L
Aroclor 1248	ND	0.50	ug/L
Aroclor 1254	ND	0.50	ug/L
Aroclor 1260	ND	0.50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	73	(10 - 130)
Decachlorobiphenyl	37	(10 - 116)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SWW101

TOTAL Metals

Lot-Sample #...: A9F140142-012 **Matrix.....:** WATER
Date Sampled...: 06/10/99 15:00 **Date Received..:** 06/11/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9172344						
Mercury	ND	0.20	ug/L	SW846 7470A	06/22-06/23/99	CWV8N103
		Dilution Factor: 1				
Silver	ND	5.0	ug/L	SW846 6010B	06/22-07/16/99	CWV8N104
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	SW846 6010B	06/22-07/16/99	CWV8N105
		Dilution Factor: 1				
Cadmium	ND	2.0	ug/L	SW846 6010B	06/22-07/16/99	CWV8N106
		Dilution Factor: 1				
Barium	ND	200	ug/L	SW846 6010B	06/22-07/16/99	CWV8N10A
		Dilution Factor: 1				
Chromium	ND	5.0	ug/L	SW846 6010B	06/22-07/16/99	CWV8N107
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	SW846 6010B	06/22-07/16/99	CWV8N108
		Dilution Factor: 1				
Selenium	ND	5.0	ug/L	SW846 6010B	06/22-07/16/99	CWV8N109
		Dilution Factor: 1				

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SWW102

HPLC

Lot-Sample #...: A9F140142-013 **Work Order #...:** CWV8Q10C **Matrix.....:** WATER
Date Sampled...: 06/10/99 15:30 **Date Received..:** 06/11/99
Prep Date.....: 06/16/99 **Analysis Date..:** 07/03/99
Prep Batch #...: 9167166
Dilution Factor: 1 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
1,3-Dinitrobenzene	ND	0.20	ug/L
2,4-Dinitrotoluene	ND	0.20	ug/L
2,6-Dinitrotoluene	ND	0.20	ug/L
Nitrobenzene	ND	0.20	ug/L
1,3,5-Trinitrobenzene	ND	0.20	ug/L
2,4,6-Trinitrotoluene	ND	0.20	ug/L
HMX	ND	0.50	ug/L
RDX	ND	0.50	ug/L
Tetryl	ND	0.20	ug/L
2-Nitrotoluene	ND	0.20	ug/L
3-Nitrotoluene	ND	0.20	ug/L
4-Nitrotoluene	ND	0.20	ug/L
4-Amino-2,6-dinitrotoluene	ND	0.20	ug/L
2-Amino-4,6-dinitrotoluene	ND	0.20	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	82	(32 - 127)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SWW102

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-013 **Work Order #...:** CWV8Q101 **Matrix.....:** WATER
Date Sampled...: 06/10/99 15:30 **Date Received..:** 06/11/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/18/99
Prep Batch #...: 9166106
Dilution Factor: 1 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	10	ug/L
Acenaphthylene	ND	10	ug/L
Anthracene	ND	10	ug/L
Benzo(a)anthracene	ND	10	ug/L
Benzo(b)fluoranthene	ND	10	ug/L
Benzo(k)fluoranthene	ND	10	ug/L
Benzo(ghi)perylene	ND	10	ug/L
Benzo(a)pyrene	ND	10	ug/L
bis(2-Chloroethoxy) methane	ND	10	ug/L
bis(2-Chloroethyl)-ether	ND	10	ug/L
bis(2-Ethylhexyl) phthalate	ND	10	ug/L
4-Bromophenyl phenyl ether	ND	10	ug/L
Butyl benzyl phthalate	ND	10	ug/L
4-Chloroaniline	ND	10	ug/L
4-Chloro-3-methylphenol	ND	10	ug/L
2-Chloronaphthalene	ND	10	ug/L
2-Chlorophenol	ND	10	ug/L
4-Chlorophenyl phenyl ether	ND	10	ug/L
Chrysene	ND	10	ug/L
Dibenz(a,h)anthracene	ND	10	ug/L
Dibenzofuran	ND	10	ug/L
Di-n-butyl phthalate	ND	10	ug/L
1,2-Dichlorobenzene	ND	10	ug/L
1,3-Dichlorobenzene	ND	10	ug/L
1,4-Dichlorobenzene	ND	10	ug/L
3,3'-Dichlorobenzidine	ND	10	ug/L
2,4-Dichlorophenol	ND	10	ug/L
Diethyl phthalate	ND	10	ug/L
2,4-Dimethylphenol	ND	10	ug/L
Dimethyl phthalate	ND	10	ug/L
Di-n-octyl phthalate	ND	10	ug/L
4,6-Dinitro-2-methylphenol	ND	25	ug/L
2,4-Dinitrophenol	ND	25	ug/L

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SWW102

GC/MS Semivolatiles

Lot-Sample #...: A9F140142-013 **Work Order #...:** CWV8Q101 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrotoluene	ND	10	ug/L
2,6-Dinitrotoluene	ND	10	ug/L
Fluoranthene	ND	10	ug/L
Fluorene	ND	10	ug/L
Hexachlorobenzene	ND	10	ug/L
Hexachlorobutadiene	ND	10	ug/L
Hexachlorocyclopenta-diene	ND	10	ug/L
Hexachloroethane	ND	10	ug/L
Indeno(1,2,3-cd)pyrene	ND	10	ug/L
Isophorone	ND	10	ug/L
2-Methylnaphthalene	ND	10	ug/L
2-Methylphenol	ND	10	ug/L
Naphthalene	ND	10	ug/L
2-Nitroaniline	ND	25	ug/L
3-Nitroaniline	ND	25	ug/L
4-Nitroaniline	ND	25	ug/L
Nitrobenzene	ND	10	ug/L
2-Nitrophenol	ND	10	ug/L
4-Nitrophenol	ND	25	ug/L
N-Nitrosodi-n-propyl-amine	ND	10	ug/L
N-Nitrosodiphenylamine	ND	10	ug/L
Pentachlorophenol	ND	25	ug/L
Phenanthrene	ND	10	ug/L
Phenol	ND	10	ug/L
Pyrene	ND	10	ug/L
1,2,4-Trichlorobenzene	ND	10	ug/L
2,4,5-Trichlorophenol	ND	10	ug/L
2,4,6-Trichlorophenol	ND	10	ug/L
Carbazole	ND	10	ug/L
4-Methylphenol	ND	10	ug/L
bis(2-Chloroisopropyl) ether	ND	10	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	57	(40 - 114)
Terphenyl-d14	81	(33 - 141)
2-Fluorobiphenyl	57	(45 - 118)
2-Fluorophenol	49	(21 - 100)
Phenol-d5	51	(17 - 101)
2,4,6-Tribromophenol	54	(16 - 129)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SWW102

GC Semivolatiles

Lot-Sample #...: A9F140142-013 **Work Order #...:** CWV8Q102 **Matrix.....:** WATER
Date Sampled...: 06/10/99 15:30 **Date Received..:** 06/11/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9166105
Dilution Factor: 1 **Method.....:** SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	0.50	ug/L
Aroclor 1221	ND	0.50	ug/L
Aroclor 1232	ND	0.50	ug/L
Aroclor 1242	ND	0.50	ug/L
Aroclor 1248	ND	0.50	ug/L
Aroclor 1254	ND	0.50	ug/L
Aroclor 1260	ND	0.50	ug/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	72	(10 - 130)
Decachlorobiphenyl	74	(10 - 116)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SWW102

TOTAL Metals

Lot-Sample #...: A9F140142-013 **Matrix.....:** WATER
Date Sampled...: 06/10/99 15:30 **Date Received..:** 06/11/99

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9172344						
Mercury	ND	0.20	ug/L	SW846 7470A	06/22-06/23/99	CWV8Q103
		Dilution Factor: 1				
Silver	ND	5.0	ug/L	SW846 6010B	06/22-07/16/99	CWV8Q104
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	SW846 6010B	06/22-07/16/99	CWV8Q105
		Dilution Factor: 1				
Cadmium	ND	2.0	ug/L	SW846 6010B	06/22-07/16/99	CWV8Q106
		Dilution Factor: 1				
Barium	ND	200	ug/L	SW846 6010B	06/22-07/16/99	CWV8Q10A
		Dilution Factor: 1				
Chromium	ND	5.0	ug/L	SW846 6010B	06/22-07/16/99	CWV8Q107
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	SW846 6010B	06/22-07/16/99	CWV8Q108
		Dilution Factor: 1				
Selenium	ND	5.0	ug/L	SW846 6010B	06/22-07/16/99	CWV8Q109
		Dilution Factor: 1				

QUALITY CONTROL SECTION

QUALITY CONTROL ELEMENTS OF SW-846 METHODS

Quanterra® Incorporated conducts a quality assurance/quality control (QA/QC) program designed to provide scientifically valid and legally defensible data. Toward this end, several types of quality control indicators are incorporated into the QA/QC program. These indicators are introduced into the sample testing process to provide a mechanism for the assessment of the analytical data.

QC BATCH

Environmental samples are taken through the testing process in groups called QUALITY CONTROL BATCHES (QC batches). A QC batch contains up to twenty environmental samples of a similar matrix (water, soil) that are processed using the same reagents and standards. Quanterra requires that each environmental sample be associated with a QC batch.

Several quality control samples are included in each QC batch and are processed identically to the twenty environmental samples. These QC samples include a METHOD BLANK (MB), a LABORATORY CONTROL SAMPLE (LCS) and, where appropriate, a MATRIX SPIKE/MATRIX SPIKE DUPLICATE (MS/MSD) pair or a MATRIX SPIKE/SAMPLE DUPLICATE (MS/DU) pair. If there is insufficient sample to perform an MS/MSD or an MS/DU, then a LABORATORY CONTROL SAMPLE DUPLICATE (LCSD) is included in the QC batch.

LABORATORY CONTROL SAMPLE

The Laboratory Control Sample is a QC sample that is created by adding known concentrations of a full or partial set of target analytes to a matrix similar to that of the environmental samples in the QC batch. The LCS analyte recovery results are used to monitor the analytical process and provide evidence that the laboratory is performing the method within acceptable guidelines. Failure to meet the established recovery guidelines requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the LCS recoveries are biased high and the associated sample is ND for the parameter(s) of interest, the batch is acceptable.

At times, a Laboratory Control Sample Duplicate (LCSD) is also included in the QC batch. An LCSD is a QC sample that is created and handled identically to the LCS. Analyte recovery data from the LCSD is assessed in the same way as that of the LCS. The LCSD recoveries, together with the LCS recoveries, are used to determine the reproducibility (precision) of the analytical system. Precision data are expressed as relative percent differences (RPDs). Failure of the RPDs to fall within the laboratory-generated acceptance windows requires the repreparation and reanalysis of all samples in the QC batch. The only exception is that if the MS/MSD RPDs are within acceptance criteria, the batch is acceptable.

METHOD BLANK

The Method Blank is a QC sample consisting of all the reagents used in analyzing the environmental samples contained in the QC batch. Method Blank results are used to determine if interference or contamination in the analytical system could lead to the reporting of false positive data or elevated analyte concentrations. All target analytes must be below the reporting limits (RL) or the associated sample(s) must be ND except for the common laboratory contaminants indicated below.

Volatile (GC or GC/MS)	Semivolatile (GC/MS)	Metals
Methylene chloride	Phthalate Esters	Copper
Acetone		Iron
2-Butanone		Zinc
		Lead*

** for analyses run on TJA Trace ICP or GFAA only*

QUALITY CONTROL ELEMENTS OF SW-846 METHODS
(Continued)

The listed volatile and semivolatile compounds may be present in concentrations up to 5 times the reporting limits. The listed metals may be present in concentrations up to 2 times the reporting limit or must be twenty fold less than the results of the environmental samples. Failure to meet these Method Blank criteria requires the repreparation and reanalysis of all samples in the QC batch.

MATRIX SPIKE/MATRIX SPIKE DUPLICATE

A Matrix Spike and a Matrix Spike Duplicate are a pair of environmental samples to which known concentrations of a full or partial set of target analytes are added. The MS/MSD results are determined in the same manner as the results of the environmental sample used to prepare the MS/MSD. The analyte recoveries and the relative percent differences (RPDs) of the recoveries are calculated and used to evaluate the effect of the sample matrix on the analytical results. When these values fail to meet acceptance criteria, the data is reviewed to determine the cause. If, in the analyst's judgment, sample matrix effects are indicated, no corrective action is performed. Otherwise, the MS/MSD and the environmental sample used to prepare them are reprepared and reanalyzed.

For certain methods, a Matrix Spike/Sample Duplicate (MS/DU) may be included in the QC batch in place of the MS/MSD. For the parameters (i.e. pH, ignitability) where it is not possible to prepare a spiked sample, a Sample Duplicate may be included in the QC batch.

SURROGATE COMPOUNDS

In addition to these batch-related QC indicators, each organic environmental and QC sample are spiked with surrogate compounds. Surrogates are organic chemicals that behave similarly to the analytes of interest and that are rarely present in the environment. Surrogate recoveries are used to monitor the individual performance of a sample in the analytical system.

The acceptance criteria do not apply to samples that are diluted. All other surrogate recoveries will be reported. If the LCS, LCSD, or the Method Blank surrogates fail to meet recovery criteria (exception for dilutions), the entire batch of samples is reprepared and reanalyzed.

If the surrogate recoveries are biased high in the LCS, LCSD, or the Method Blank and the associated sample(s) are ND, the batch is acceptable. If the surrogate recoveries are outside criteria for environmental or MS/MSD samples, the batch may be acceptable based on the analyst's judgment that sample matrix effects are indicated.

For the GC/MS BNA methods, the surrogate criteria is that two of the three surrogates for each fraction must meet acceptance criteria. The third surrogate must have a recovery of ten percent or greater.

For the Pesticide/PCB, PAH, TPH, and Herbicide methods, the surrogate criteria is that one of two surrogate compounds meet acceptance criteria.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 Work Order #...: CX575102 Matrix.....: SOLID
LCS Lot-Sample#: A9F210000-184
Prep Date.....: 06/18/99 Analysis Date..: 06/18/99
Prep Batch #...: 9172184
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Acetone	94	(80 - 120)	SW846 8260B
Benzene	93	(85 - 120)	SW846 8260B
Bromodichloromethane	92	(35 - 155)	SW846 8260B
Bromoform	91	(45 - 169)	SW846 8260B
Bromomethane	56	(10 - 242)	SW846 8260B
2-Butanone	82 a	(85 - 119)	SW846 8260B
Carbon disulfide	85	(81 - 125)	SW846 8260B
Carbon tetrachloride	99	(70 - 140)	SW846 8260B
Chlorobenzene	92	(88 - 119)	SW846 8260B
Dibromochloromethane	91	(53 - 149)	SW846 8260B
Chloroethane	84	(82 - 114)	SW846 8260B
Chloroform	97	(51 - 138)	SW846 8260B
Chloromethane	60	(10 - 273)	SW846 8260B
1,1-Dichloroethane	93	(59 - 155)	SW846 8260B
,2-Dichloroethane	99	(49 - 155)	SW846 8260B
1,1-Dichloroethene	91	(76 - 128)	SW846 8260B
cis-1,2-Dichloroethene	104	(50 - 150)	SW846 8260B
trans-1,2-Dichloroethene	88	(54 - 156)	SW846 8260B
1,2-Dichloropropane	91	(10 - 210)	SW846 8260B
cis-1,3-Dichloropropene	87	(10 - 227)	SW846 8260B
trans-1,3-Dichloropropene	90	(17 - 183)	SW846 8260B
Ethylbenzene	93	(37 - 162)	SW846 8260B
2-Hexanone	91	(87 - 129)	SW846 8260B
Methylene chloride	87	(10 - 221)	SW846 8260B
4-Methyl-2-pentanone	96	(90 - 125)	SW846 8260B
Styrene	85	(79 - 100)	SW846 8260B
1,1,2,2-Tetrachloroethane	91	(46 - 157)	SW846 8260B
Tetrachloroethene	96	(64 - 148)	SW846 8260B
Toluene	93	(86 - 118)	SW846 8260B
1,1,1-Trichloroethane	99	(52 - 162)	SW846 8260B
1,1,2-Trichloroethane	95	(52 - 150)	SW846 8260B
Trichloroethene	91	(86 - 116)	SW846 8260B
Vinyl chloride	72	(10 - 251)	SW846 8260B
Xylenes (total)	91	(83 - 129)	SW846 8260B

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 **Work Order #...:** CX575102 **Matrix.....:** SOLID
LCS Lot-Sample#: A9F210000-184

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(70 - 135)
1,2-Dichloroethane-d4	107	(75 - 117)
Toluene-d8	101	(86 - 122)
Bromofluorobenzene	101	(60 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 Work Order #...: CX1Q1102 Matrix.....: SOLID
LCS Lot-Sample#: A9F170000-297
Prep Date.....: 06/17/99 Analysis Date..: 06/17/99
Prep Batch #...: 9168297
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Acetone	139 a	(80 - 120)	SW846 8260B
Benzene	101	(85 - 120)	SW846 8260B
Bromodichloromethane	101	(35 - 155)	SW846 8260B
Bromoform	103	(45 - 169)	SW846 8260B
Bromomethane	78	(10 - 242)	SW846 8260B
2-Butanone	118	(85 - 119)	SW846 8260B
Carbon disulfide	94	(81 - 125)	SW846 8260B
Carbon tetrachloride	106	(70 - 140)	SW846 8260B
Chlorobenzene	100	(88 - 119)	SW846 8260B
Dibromochloromethane	100	(53 - 149)	SW846 8260B
Chloroethane	96	(82 - 114)	SW846 8260B
Chloroform	105	(51 - 138)	SW846 8260B
Chloromethane	72	(10 - 273)	SW846 8260B
1,1-Dichloroethane	102	(59 - 155)	SW846 8260B
1,2-Dichloroethane	107	(49 - 155)	SW846 8260B
1,1-Dichloroethene	99	(76 - 128)	SW846 8260B
cis-1,2-Dichloroethene	113	(50 - 150)	SW846 8260B
trans-1,2-Dichloroethene	94	(54 - 156)	SW846 8260B
1,2-Dichloropropane	101	(10 - 210)	SW846 8260B
cis-1,3-Dichloropropene	98	(10 - 227)	SW846 8260B
trans-1,3-Dichloropropene	100	(17 - 183)	SW846 8260B
Ethylbenzene	100	(37 - 162)	SW846 8260B
2-Hexanone	146 a	(87 - 129)	SW846 8260B
Methylene chloride	101	(10 - 221)	SW846 8260B
4-Methyl-2-pentanone	125	(90 - 125)	SW846 8260B
Styrene	95	(79 - 100)	SW846 8260B
1,1,2,2-Tetrachloroethane	108	(46 - 157)	SW846 8260B
Tetrachloroethene	100	(64 - 148)	SW846 8260B
Toluene	100	(86 - 118)	SW846 8260B
1,1,1-Trichloroethane	105	(52 - 162)	SW846 8260B
1,1,2-Trichloroethane	103	(52 - 150)	SW846 8260B
Trichloroethene	98	(86 - 116)	SW846 8260B
Vinyl chloride	86	(10 - 251)	SW846 8260B
Xylenes (total)	99	(83 - 129)	SW846 8260B

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 **Work Order #...:** CX1Q1102 **Matrix.....:** SOLID
LCS Lot-Sample#: A9F170000-297

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	109	(70 - 135)
1,2-Dichloroethane-d4	107	(75 - 117)
Toluene-d8	102	(86 - 122)
Bromofluorobenzene	101	(60 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 Work Order #...: CX5P0102 Matrix.....: SOLID
LCS Lot-Sample#: A9F210000-281
Prep Date.....: 06/21/99 Analysis Date..: 06/21/99
Prep Batch #...: 9172281
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Acetone	110	(80 - 120)	SW846 8260B
Benzene	98	(85 - 120)	SW846 8260B
Bromodichloromethane	97	(35 - 155)	SW846 8260B
Bromoform	94	(45 - 169)	SW846 8260B
Bromomethane	65	(10 - 242)	SW846 8260B
2-Butanone	82 a	(85 - 119)	SW846 8260B
Carbon disulfide	95	(81 - 125)	SW846 8260B
Carbon tetrachloride	106	(70 - 140)	SW846 8260B
Chlorobenzene	96	(88 - 119)	SW846 8260B
Dibromochloromethane	95	(53 - 149)	SW846 8260B
Chloroethane	94	(82 - 114)	SW846 8260B
Chloroform	102	(51 - 138)	SW846 8260B
Chloromethane	75	(10 - 273)	SW846 8260B
1,1-Dichloroethane	98	(59 - 155)	SW846 8260B
1,2-Dichloroethane	103	(49 - 155)	SW846 8260B
1,1-Dichloroethene	98	(76 - 128)	SW846 8260B
cis-1,2-Dichloroethene	109	(50 - 150)	SW846 8260B
trans-1,2-Dichloroethene	92	(54 - 156)	SW846 8260B
1,2-Dichloropropane	96	(10 - 210)	SW846 8260B
cis-1,3-Dichloropropene	89	(10 - 227)	SW846 8260B
trans-1,3-Dichloropropene	90	(17 - 183)	SW846 8260B
Ethylbenzene	92	(37 - 162)	SW846 8260B
2-Hexanone	99	(87 - 129)	SW846 8260B
Methylene chloride	96	(10 - 221)	SW846 8260B
4-Methyl-2-pentanone	98	(90 - 125)	SW846 8260B
Styrene	87	(79 - 100)	SW846 8260B
1,1,2,2-Tetrachloroethane	91	(46 - 157)	SW846 8260B
Tetrachloroethene	100	(64 - 148)	SW846 8260B
Toluene	96	(86 - 118)	SW846 8260B
1,1,1-Trichloroethane	104	(52 - 162)	SW846 8260B
1,1,2-Trichloroethane	97	(52 - 150)	SW846 8260B
Trichloroethene	97	(86 - 116)	SW846 8260B
Vinyl chloride	86	(10 - 251)	SW846 8260B
Xylenes (total)	95	(83 - 129)	SW846 8260B

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 **Work Order #...:** CX5P0102 **Matrix.....:** SOLID
LCS Lot-Sample#: A9F210000-281

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(70 - 135)
1,2-Dichloroethane-d4	108	(75 - 117)
Toluene-d8	101	(86 - 122)
Bromofluorobenzene	98	(60 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 Work Order #...: CX51W102 Matrix.....: SOLID
LCS Lot-Sample#: A9F210000-112
Prep Date.....: 06/21/99 Analysis Date..: 06/25/99
Prep Batch #...: 9172112
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Acenaphthene	68	(51 - 101)	SW846 8270C
Acenaphthylene	68	(33 - 145)	SW846 8270C
Anthracene	75	(27 - 133)	SW846 8270C
Benzo(a)anthracene	73	(33 - 143)	SW846 8270C
Benzo(b)fluoranthene	74	(24 - 159)	SW846 8270C
Benzo(k)fluoranthene	67	(60 - 125)	SW846 8270C
Benzo(ghi)perylene	77	(10 - 219)	SW846 8270C
Benzo(a)pyrene	70	(17 - 163)	SW846 8270C
bis(2-Chloroethoxy) methane	63	(33 - 184)	SW846 8270C
bis(2-Chloroethyl)-ether	62	(12 - 158)	SW846 8270C
bis(2-Ethylhexyl) phthalate	66	(10 - 158)	SW846 8270C
4-Bromophenyl phenyl ether	77	(33 - 127)	SW846 8270C
Butyl benzyl phthalate	64	(10 - 122)	SW846 8270C
4-Chloroaniline	38 a	(43 - 91)	SW846 8270C
4-Chloro-3-methylphenol	67	(46 - 106)	SW846 8270C
2-Chloronaphthalene	68	(60 - 118)	SW846 8270C
2-Chlorophenol	63	(44 - 103)	SW846 8270C
4-Chlorophenyl phenyl ether	74	(25 - 158)	SW846 8270C
Chrysene	71	(17 - 168)	SW846 8270C
Dibenz(a,h)anthracene	81	(10 - 227)	SW846 8270C
Dibenzofuran	71 a	(85 - 117)	SW846 8270C
Di-n-butyl phthalate	73	(10 - 118)	SW846 8270C
1,2-Dichlorobenzene	63	(32 - 129)	SW846 8270C
1,3-Dichlorobenzene	60	(10 - 172)	SW846 8270C
1,4-Dichlorobenzene	60	(51 - 95)	SW846 8270C
3,3'-Dichlorobenzidine	42	(10 - 262)	SW846 8270C
2,4-Dichlorophenol	66	(39 - 135)	SW846 8270C
Diethyl phthalate	72	(10 - 114)	SW846 8270C
2,4-Dimethylphenol	56	(32 - 119)	SW846 8270C
Dimethyl phthalate	75	(10 - 112)	SW846 8270C

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 Work Order #...: CX51W102 Matrix.....: SOLID
LCS Lot-Sample#: A9F210000-112

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Di-n-octyl phthalate	60	(10 - 146)	SW846 8270C
4,6-Dinitro-2-methylphenol	61	(10 - 181)	SW846 8270C
2,4-Dinitrophenol	53	(10 - 191)	SW846 8270C
2,4-Dinitrotoluene	78	(54 - 129)	SW846 8270C
2,6-Dinitrotoluene	81	(50 - 151)	SW846 8270C
Fluoranthene	77	(26 - 137)	SW846 8270C
Fluorene	73	(59 - 121)	SW846 8270C
Hexachlorobenzene	79	(10 - 152)	SW846 8270C
Hexachlorobutadiene	58	(24 - 116)	SW846 8270C
Hexachlorocyclopentadiene	27	(2.0- 55)	SW846 8270C
Hexachloroethane	57	(40 - 113)	SW846 8270C
Indeno(1,2,3-cd)pyrene	90	(10 - 171)	SW846 8270C
Isophorone	58	(21 - 196)	SW846 8270C
2-Methylnaphthalene	62	(15 - 111)	SW846 8270C
2-Methylphenol	61	(10 - 103)	SW846 8270C
Naphthalene	60	(21 - 133)	SW846 8270C
2-Nitroaniline	69	(32 - 165)	SW846 8270C
3-Nitroaniline	59	(31 - 177)	SW846 8270C
4-Nitroaniline	57	(38 - 229)	SW846 8270C
Nitrobenzene	58	(35 - 180)	SW846 8270C
2-Nitrophenol	66	(29 - 182)	SW846 8270C
4-Nitrophenol	50	(16 - 192)	SW846 8270C
N-Nitrosodi-n-propylamine	59	(39 - 95)	SW846 8270C
N-Nitrosodiphenylamine	78	(28 - 121)	SW846 8270C
Pentachlorophenol	37	(24 - 115)	SW846 8270C
Phenanthrene	76	(54 - 120)	SW846 8270C
Phenol	63	(36 - 103)	SW846 8270C
Pyrene	67	(46 - 147)	SW846 8270C
1,2,4-Trichlorobenzene	62	(51 - 101)	SW846 8270C
2,4,5-Trichlorophenol	73	(13 - 136)	SW846 8270C
2,4,6-Trichlorophenol	65	(37 - 144)	SW846 8270C
Carbazole	75	(50 - 150)	SW846 8270C
4-Methylphenol	62	(10 - 103)	SW846 8270C
2,2'-oxybis(1-Chloropropane)	80	(36 - 166)	SW846 8270C

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CX51W102 **Matrix.....:** SOLID
LCS Lot-Sample#: A9F210000-112

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	55	(23 - 120)
Terphenyl-d14	72	(18 - 137)
2-Fluorobiphenyl	65	(30 - 115)
2-Fluorophenol	60	(30 - 115)
Phenol-d5	59	(24 - 113)
2,4,6-Tribromophenol	67	(19 - 122)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVLT102 **Matrix.....:** WATER
LCS Lot-Sample#: A9F150000-106
Prep Date.....: 06/15/99 **Analysis Date..:** 06/17/99
Prep Batch #...: 9166106
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Acenaphthene	82	(47 - 145)	SW846 8270C
Acenaphthylene	77	(47 - 111)	SW846 8270C
Anthracene	82	(53 - 107)	SW846 8270C
Benzo(a)anthracene	89	(53 - 110)	SW846 8270C
Benzo(b)fluoranthene	86	(43 - 110)	SW846 8270C
Benzo(k)fluoranthene	88	(46 - 120)	SW846 8270C
Benzo(ghi)perylene	75	(17 - 120)	SW846 8270C
Benzo(a)pyrene	79	(28 - 114)	SW846 8270C
bis(2-Chloroethoxy) methane	78	(50 - 106)	SW846 8270C
bis(2-Chloroethyl)-ether	73	(44 - 95)	SW846 8270C
bis(2-Ethylhexyl) phthalate	88	(30 - 123)	SW846 8270C
4-Bromophenyl phenyl ether	88	(52 - 114)	SW846 8270C
Butyl benzyl phthalate	84	(35 - 110)	SW846 8270C
4-Chloroaniline	43	(43 - 91)	SW846 8270C
4-Chloro-3-methylphenol	79	(22 - 147)	SW846 8270C
2-Chloronaphthalene	84	(43 - 111)	SW846 8270C
2-Chlorophenol	70	(23 - 134)	SW846 8270C
4-Chlorophenyl phenyl ether	88	(48 - 124)	SW846 8270C
Chrysene	86	(54 - 120)	SW846 8270C
Dibenz(a,h)anthracene	77	(23 - 112)	SW846 8270C
Dibenzofuran	82 a	(85 - 117)	SW846 8270C
Di-n-butyl phthalate	83	(44 - 115)	SW846 8270C
1,2-Dichlorobenzene	66	(43 - 95)	SW846 8270C
1,3-Dichlorobenzene	62	(41 - 92)	SW846 8270C
1,4-Dichlorobenzene	63	(20 - 124)	SW846 8270C
3,3'-Dichlorobenzidine	45	(19 - 137)	SW846 8270C
2,4-Dichlorophenol	77	(33 - 93)	SW846 8270C
Diethyl phthalate	84	(16 - 129)	SW846 8270C
2,4-Dimethylphenol	39	(23 - 74)	SW846 8270C
Dimethyl phthalate	84	(10 - 115)	SW846 8270C

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 Work Order #...: CWVLT102 Matrix.....: WATER
LCS Lot-Sample#: A9F150000-106

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Di-n-octyl phthalate	95	(25 - 123)	SW846 8270C
4,6-Dinitro-2-methylphenol	106	(10 - 115)	SW846 8270C
2,4-Dinitrophenol	107 a	(10 - 96)	SW846 8270C
2,4-Dinitrotoluene	92	(60 - 134)	SW846 8270C
2,6-Dinitrotoluene	94	(40 - 121)	SW846 8270C
Fluoranthene	85	(38 - 131)	SW846 8270C
Fluorene	84	(45 - 124)	SW846 8270C
Hexachlorobenzene	87	(53 - 110)	SW846 8270C
Hexachlorobutadiene	73	(45 - 96)	SW846 8270C
Hexachlorocyclopentadiene	7.1 a	(16 - 88)	SW846 8270C
Hexachloroethane	60	(38 - 90)	SW846 8270C
Indeno(1,2,3-cd)pyrene	78	(28 - 112)	SW846 8270C
Isophorone	74	(44 - 105)	SW846 8270C
2-Methylnaphthalene	78	(43 - 82)	SW846 8270C
2-Methylphenol	66	(20 - 95)	SW846 8270C
Naphthalene	74	(44 - 99)	SW846 8270C
2-Nitroaniline	83	(52 - 170)	SW846 8270C
3-Nitroaniline	72	(55 - 172)	SW846 8270C
4-Nitroaniline	57 a	(74 - 195)	SW846 8270C
Nitrobenzene	78	(44 - 102)	SW846 8270C
2-Nitrophenol	83	(10 - 99)	SW846 8270C
4-Nitrophenol	84	(30 - 162)	SW846 8270C
N-Nitrosodi-n-propylamine	71	(0.0- 230)	SW846 8270C
N-Nitrosodiphenylamine	77	(37 - 134)	SW846 8270C
Pentachlorophenol	81	(14 - 176)	SW846 8270C
Phenanthrene	86	(50 - 189)	SW846 8270C
Phenol	69	(5.0- 112)	SW846 8270C
Pyrene	85	(68 - 131)	SW846 8270C
1,2,4-Trichlorobenzene	75	(41 - 105)	SW846 8270C
2,4,5-Trichlorophenol	84	(20 - 159)	SW846 8270C
2,4,6-Trichlorophenol	81	(22 - 102)	SW846 8270C
Carbazole	65	(50 - 150)	SW846 8270C
4-Methylphenol	63	(10 - 85)	SW846 8270C
2,2'-oxybis(1-Chloropropane)	85	(21 - 122)	SW846 8270C

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVLT102 **Matrix.....:** WATER
LCS Lot-Sample#: A9F150000-106

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	77	(40 - 114)
Terphenyl-d14	87	(33 - 141)
2-Fluorobiphenyl	80	(45 - 118)
2-Fluorophenol	64	(21 - 100)
Phenol-d5	68	(17 - 101)
2,4,6-Tribromophenol	77	(16 - 129)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 Work Order #...: CWVLV102 Matrix.....: SOLID
LCS Lot-Sample#: A9F150000-107
Prep Date.....: 06/15/99 Analysis Date..: 06/17/99
Prep Batch #...: 9166107
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Acenaphthene	82	(51 - 101)	SW846 8270C
Acenaphthylene	81	(33 - 145)	SW846 8270C
Anthracene	85	(27 - 133)	SW846 8270C
Benzo(a)anthracene	93	(33 - 143)	SW846 8270C
Benzo(b)fluoranthene	88	(24 - 159)	SW846 8270C
Benzo(k)fluoranthene	76	(60 - 125)	SW846 8270C
Benzo(ghi)perylene	87	(10 - 219)	SW846 8270C
Benzo(a)pyrene	81	(17 - 163)	SW846 8270C
bis(2-Chloroethoxy) methane	78	(33 - 184)	SW846 8270C
bis(2-Chloroethyl)-ether	72	(12 - 158)	SW846 8270C
bis(2-Ethylhexyl) phthalate	100	(10 - 158)	SW846 8270C
4-Bromophenyl phenyl ether	88	(33 - 127)	SW846 8270C
Butyl benzyl phthalate	80	(10 - 122)	SW846 8270C
4-Chloroaniline	56	(43 - 91)	SW846 8270C
4-Chloro-3-methylphenol	81	(46 - 106)	SW846 8270C
2-Chloronaphthalene	84	(60 - 118)	SW846 8270C
2-Chlorophenol	73	(44 - 103)	SW846 8270C
4-Chlorophenyl phenyl ether	88	(25 - 158)	SW846 8270C
Chrysene	84	(17 - 168)	SW846 8270C
Dibenz(a,h)anthracene	87	(10 - 227)	SW846 8270C
Dibenzofuran	83 a	(85 - 117)	SW846 8270C
Di-n-butyl phthalate	82	(10 - 118)	SW846 8270C
1,2-Dichlorobenzene	72	(32 - 129)	SW846 8270C
1,3-Dichlorobenzene	69	(10 - 172)	SW846 8270C
1,4-Dichlorobenzene	70	(51 - 95)	SW846 8270C
3,3'-Dichlorobenzidine	57	(10 - 262)	SW846 8270C
2,4-Dichlorophenol	78	(39 - 135)	SW846 8270C
Diethyl phthalate	84	(10 - 114)	SW846 8270C
2,4-Dimethylphenol	64	(32 - 119)	SW846 8270C
Dimethyl phthalate	83	(10 - 112)	SW846 8270C

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 Work Order #...: CWVLV102 Matrix.....: SOLID
LCS Lot-Sample#: A9F150000-107

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Di-n-octyl phthalate	82	(10 - 146)	SW846 8270C
4,6-Dinitro-2-methylphenol	79	(10 - 181)	SW846 8270C
2,4-Dinitrophenol	58	(10 - 191)	SW846 8270C
2,4-Dinitrotoluene	93	(54 - 129)	SW846 8270C
2,6-Dinitrotoluene	93	(50 - 151)	SW846 8270C
Fluoranthene	85	(26 - 137)	SW846 8270C
Fluorene	84	(59 - 121)	SW846 8270C
Hexachlorobenzene	88	(10 - 152)	SW846 8270C
Hexachlorobutadiene	79	(24 - 116)	SW846 8270C
Hexachlorocyclopentadiene	49	(2.0- 55)	SW846 8270C
Hexachloroethane	71	(40 - 113)	SW846 8270C
Indeno(1,2,3-cd)pyrene	88	(10 - 171)	SW846 8270C
Isophorone	72	(21 - 196)	SW846 8270C
2-Methylnaphthalene	78	(15 - 111)	SW846 8270C
2-Methylphenol	70	(10 - 103)	SW846 8270C
Naphthalene	75	(21 - 133)	SW846 8270C
2-Nitroaniline	87	(32 - 165)	SW846 8270C
3-Nitroaniline	83	(31 - 177)	SW846 8270C
4-Nitroaniline	72	(38 - 229)	SW846 8270C
Nitrobenzene	76	(35 - 180)	SW846 8270C
2-Nitrophenol	82	(29 - 182)	SW846 8270C
4-Nitrophenol	84	(16 - 192)	SW846 8270C
N-Nitrosodi-n-propylamine	70	(39 - 95)	SW846 8270C
N-Nitrosodiphenylamine	87	(28 - 121)	SW846 8270C
Pentachlorophenol	44	(24 - 115)	SW846 8270C
Phenanthrene	86	(54 - 120)	SW846 8270C
Phenol	74	(36 - 103)	SW846 8270C
Pyrene	82	(46 - 147)	SW846 8270C
1,2,4-Trichlorobenzene	78	(51 - 101)	SW846 8270C
2,4,5-Trichlorophenol	74	(13 - 136)	SW846 8270C
2,4,6-Trichlorophenol	62	(37 - 144)	SW846 8270C
Carbazole	93	(50 - 150)	SW846 8270C
4-Methylphenol	68	(10 - 103)	SW846 8270C
2,2'-oxybis(1-Chloropropane)	83	(36 - 166)	SW846 8270C

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVLV102 **Matrix.....:** SOLID
LCS Lot-Sample#: A9F150000-107

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	76	(23 - 120)
Terphenyl-d14	85	(18 - 137)
2-Fluorobiphenyl	81	(30 - 115)
2-Fluorophenol	68	(30 - 115)
Phenol-d5	74	(24 - 113)
2,4,6-Tribromophenol	52	(19 - 122)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A9F140142 **Work Order #...:** CWX9J102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: H9F160000-166 CWX9J103-LCSD
Prep Date.....: 06/16/99 **Analysis Date..:** 06/17/99
Prep Batch #...: 9167166
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
1,3-Dinitrobenzene	**105**	**(75 - 121)**			**SW846 8330**
	98	**(75 - 121)**	**7.1**	**(0-27)**	**SW846 8330**
2,4-Dinitrotoluene	**104**	**(73 - 118)**			**SW846 8330**
	95	**(73 - 118)**	**9.0**	**(0-30)**	**SW846 8330**
2,6-Dinitrotoluene	**101**	**(71 - 123)**			**SW846 8330**
	93	**(71 - 123)**	**8.6**	**(0-31)**	**SW846 8330**
Nitrobenzene	**99**	**(62 - 115)**			**SW846 8330**
	89	**(62 - 115)**	**11**	**(0-28)**	**SW846 8330**
1,3,5-Trinitrobenzene	**105**	**(76 - 120)**			**SW846 8330**
	98	**(76 - 120)**	**6.6**	**(0-30)**	**SW846 8330**
2,4,6-Trinitrotoluene	**104**	**(73 - 122)**			**SW846 8330**
	98	**(73 - 122)**	**6.1**	**(0-27)**	**SW846 8330**
HMX	**97**	**(70 - 125)**			**SW846 8330**
	92	**(70 - 125)**	**5.2**	**(0-28)**	**SW846 8330**
RDX	**109**	**(78 - 125)**			**SW846 8330**
	101	**(78 - 125)**	**6.8**	**(0-24)**	**SW846 8330**
Tetryl	**104**	**(72 - 125)**			**SW846 8330**
	98	**(72 - 125)**	**5.9**	**(0-27)**	**SW846 8330**
2-Nitrotoluene	**92**	**(52 - 115)**			**SW846 8330**
	81	**(52 - 115)**	**13**	**(0-30)**	**SW846 8330**
3-Nitrotoluene	**98**	**(57 - 115)**			**SW846 8330**
	83	**(57 - 115)**	**16**	**(0-35)**	**SW846 8330**
4-Nitrotoluene	**97**	**(57 - 115)**			**SW846 8330**
	83	**(57 - 115)**	**15**	**(0-33)**	**SW846 8330**
4-Amino-2,6-dinitrotoluene	**98**	**(66 - 115)**			**SW846 8330**
	86	**(66 - 115)**	**13**	**(0-27)**	**SW846 8330**
2-Amino-4,6-dinitrotoluene	**100**	**(67 - 115)**			**SW846 8330**
	86	**(67 - 115)**	**14**	**(0-29)**	**SW846 8330**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	89	(32 - 127)
	75	(32 - 127)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A9F140142 **Work Order #...:** CX3DD102-LCS **Matrix.....:** SOLID
LCS Lot-Sample#: H9F180000-280 CX3DD103-LCSD
Prep Date.....: 06/18/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
HMX	**100**	**(77 - 122)**			**SW846 8330**
	99	**(77 - 122)**	**1.5**	**(0-17)**	**SW846 8330**
RDX	**99**	**(83 - 121)**			**SW846 8330**
	97	**(83 - 121)**	**2.3**	**(0-16)**	**SW846 8330**
1,3,5-Trinitrobenzene	**93**	**(81 - 120)**			**SW846 8330**
	92	**(81 - 120)**	**1.5**	**(0-15)**	**SW846 8330**
1,3-Dinitrobenzene	**98**	**(82 - 117)**			**SW846 8330**
	97	**(82 - 117)**	**1.0**	**(0-15)**	**SW846 8330**
Tetryl	**67**	**(51 - 120)**			**SW846 8330**
	68	**(51 - 120)**	**2.3**	**(0-20)**	**SW846 8330**
Nitrobenzene	**99**	**(83 - 117)**			**SW846 8330**
	98	**(83 - 117)**	**0.99**	**(0-15)**	**SW846 8330**
2,4,6-Trinitrotoluene	**96**	**(74 - 126)**			**SW846 8330**
	96	**(74 - 126)**	**0.060**	**(0-15)**	**SW846 8330**
4-Amino-2,6-dinitrotoluene	**99**	**(81 - 123)**			**SW846 8330**
	96	**(81 - 123)**	**2.6**	**(0-15)**	**SW846 8330**
2-Amino-4,6-dinitrotoluene	**98**	**(80 - 121)**			**SW846 8330**
	96	**(80 - 121)**	**1.3**	**(0-16)**	**SW846 8330**
2,6-Dinitrotoluene	**99**	**(82 - 121)**			**SW846 8330**
	98	**(82 - 121)**	**1.2**	**(0-15)**	**SW846 8330**
2,4-Dinitrotoluene	**99**	**(81 - 120)**			**SW846 8330**
	98	**(81 - 120)**	**0.54**	**(0-15)**	**SW846 8330**
2-Nitrotoluene	**99**	**(81 - 117)**			**SW846 8330**
	103	**(81 - 117)**	**4.8**	**(0-15)**	**SW846 8330**
4-Nitrotoluene	**101**	**(81 - 117)**			**SW846 8330**
	98	**(81 - 117)**	**3.8**	**(0-15)**	**SW846 8330**
3-Nitrotoluene	**99**	**(80 - 118)**			**SW846 8330**
	99	**(80 - 118)**	**0.14**	**(0-15)**	**SW846 8330**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	97	(76 - 124)
	100	(76 - 124)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A9F140142 **Work Order #...:** CX493102-LCS **Matrix.....:** SOLID
LCS Lot-Sample#: H9F190000-118 CX493103-LCSD
Prep Date.....: 06/19/99 **Analysis Date..:** 06/24/99
Prep Batch #...: 9170118
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
HMX	**106**	**(77 - 122)**			**SW846 8330**
	103	**(77 - 122)**	**2.8**	**(0-17)**	**SW846 8330**
RDX	**104**	**(83 - 121)**			**SW846 8330**
	102	**(83 - 121)**	**1.9**	**(0-16)**	**SW846 8330**
1,3,5-Trinitrobenzene	**99**	**(81 - 120)**			**SW846 8330**
	98	**(81 - 120)**	**2.0**	**(0-15)**	**SW846 8330**
1,3-Dinitrobenzene	**103**	**(82 - 117)**			**SW846 8330**
	102	**(82 - 117)**	**1.6**	**(0-15)**	**SW846 8330**
Tetryl	**66**	**(51 - 120)**			**SW846 8330**
	61	**(51 - 120)**	**6.6**	**(0-20)**	**SW846 8330**
Nitrobenzene	**104**	**(83 - 117)**			**SW846 8330**
	102	**(83 - 117)**	**1.6**	**(0-15)**	**SW846 8330**
2,4,6-Trinitrotoluene	**106**	**(74 - 126)**			**SW846 8330**
	103	**(74 - 126)**	**2.5**	**(0-15)**	**SW846 8330**
4-Amino-2,6-dinitrotoluene	**107**	**(81 - 123)**			**SW846 8330**
	104	**(81 - 123)**	**2.9**	**(0-15)**	**SW846 8330**
2-Amino-4,6-dinitrotoluene	**105**	**(80 - 121)**			**SW846 8330**
	102	**(80 - 121)**	**2.3**	**(0-16)**	**SW846 8330**
2,6-Dinitrotoluene	**106**	**(82 - 121)**			**SW846 8330**
	103	**(82 - 121)**	**2.3**	**(0-15)**	**SW846 8330**
2,4-Dinitrotoluene	**105**	**(81 - 120)**			**SW846 8330**
	102	**(81 - 120)**	**2.9**	**(0-15)**	**SW846 8330**
2-Nitrotoluene	**104**	**(81 - 117)**			**SW846 8330**
	102	**(81 - 117)**	**2.2**	**(0-15)**	**SW846 8330**
4-Nitrotoluene	**103**	**(81 - 117)**			**SW846 8330**
	100	**(81 - 117)**	**3.3**	**(0-15)**	**SW846 8330**
3-Nitrotoluene	**106**	**(80 - 118)**			**SW846 8330**
	102	**(80 - 118)**	**4.0**	**(0-15)**	**SW846 8330**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	111	(76 - 124)
	104	(76 - 124)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A9F140142 **Work Order #...:** CX50J102-LCS **Matrix.....:** SOLID
LCS Lot-Sample#: H9F200000-101 CX50J103-LCSD
Prep Date.....: 06/20/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9171101
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
HMX	**107**	**(77 - 122)**			**SW846 8330**
	104	**(77 - 122)**	**3.1**	**(0-17)**	**SW846 8330**
RDX	**105**	**(83 - 121)**			**SW846 8330**
	103	**(83 - 121)**	**2.8**	**(0-16)**	**SW846 8330**
1,3,5-Trinitrobenzene	**99**	**(81 - 120)**			**SW846 8330**
	97	**(81 - 120)**	**1.9**	**(0-15)**	**SW846 8330**
1,3-Dinitrobenzene	**105**	**(82 - 117)**			**SW846 8330**
	103	**(82 - 117)**	**1.9**	**(0-15)**	**SW846 8330**
Tetryl	**70**	**(51 - 120)**			**SW846 8330**
	69	**(51 - 120)**	**2.1**	**(0-20)**	**SW846 8330**
Nitrobenzene	**105**	**(83 - 117)**			**SW846 8330**
	102	**(83 - 117)**	**3.2**	**(0-15)**	**SW846 8330**
2,4,6-Trinitrotoluene	**106**	**(74 - 126)**			**SW846 8330**
	103	**(74 - 126)**	**2.3**	**(0-15)**	**SW846 8330**
4-Amino-2,6-dinitrotoluene	**105**	**(81 - 123)**			**SW846 8330**
	102	**(81 - 123)**	**3.1**	**(0-15)**	**SW846 8330**
2-Amino-4,6-dinitrotoluene	**105**	**(80 - 121)**			**SW846 8330**
	102	**(80 - 121)**	**3.2**	**(0-16)**	**SW846 8330**
2,6-Dinitrotoluene	**107**	**(82 - 121)**			**SW846 8330**
	105	**(82 - 121)**	**2.5**	**(0-15)**	**SW846 8330**
2,4-Dinitrotoluene	**106**	**(81 - 120)**			**SW846 8330**
	102	**(81 - 120)**	**3.3**	**(0-15)**	**SW846 8330**
2-Nitrotoluene	**108**	**(81 - 117)**			**SW846 8330**
	101	**(81 - 117)**	**6.5**	**(0-15)**	**SW846 8330**
4-Nitrotoluene	**106**	**(81 - 117)**			**SW846 8330**
	101	**(81 - 117)**	**4.5**	**(0-15)**	**SW846 8330**
3-Nitrotoluene	**106**	**(80 - 118)**			**SW846 8330**
	105	**(80 - 118)**	**1.4**	**(0-15)**	**SW846 8330**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	114	(76 - 124)
	109	(76 - 124)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVLR102-LCS **Matrix.....:** WATER
LCS Lot-Sample#: A9F150000-105 CWVLR103-LCSD
Prep Date.....: 06/15/99 **Analysis Date..:** 06/22/99
Prep Batch #...: 9166105
Dilution Factor: 2

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**96**	**(66 - 111)**			**SW846 8082**
	83	**(66 - 111)**	**13**	**(0-23)**	**SW846 8082**
Aroclor 1260	**102**	**(65 - 111)**			**SW846 8082**
	93	**(65 - 111)**	**8.8**	**(0-23)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	108	(10 - 130)
	81	(10 - 130)
Decachlorobiphenyl	49	(10 - 116)
	47	(10 - 116)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVLW102 **Matrix.....:** SOLID
LCS Lot-Sample#: A9F150000-108
Prep Date.....: 06/15/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9166108
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Aroclor 1016	**88**	**(60 - 133)**	**SW846 8082**
Aroclor 1260	**103**	**(59 - 129)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	102	(10 - 129)
Decachlorobiphenyl	112	(10 - 138)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A9F210000-344 **Prep Batch #...:** 9172344					
Mercury	92	(80 - 120)	SW846 7470A	06/22-06/23/99	CX5X2111
		Dilution Factor: 1			
Silver	110	(80 - 120)	SW846 6010B	06/22-07/16/99	CX5X2112
		Dilution Factor: 1			
Arsenic	98	(80 - 120)	SW846 6010B	06/22-07/16/99	CX5X210R
		Dilution Factor: 1			
Aluminum	99	(87 - 115)	SW846 6010B	06/22-07/15/99	CX5X211A
		Dilution Factor: 1			
Cadmium	98	(80 - 120)	SW846 6010B	06/22-07/16/99	CX5X210T
		Dilution Factor: 1			
Barium	100	(87 - 110)	SW846 6010B	06/22-07/16/99	CX5X211C
		Dilution Factor: 1			
Chromium	98	(80 - 120)	SW846 6010B	06/22-07/16/99	CX5X210U
		Dilution Factor: 1			
Beryllium	95	(85 - 110)	SW846 6010B	06/22-07/16/99	CX5X211D
		Dilution Factor: 1			
Lead	96	(80 - 120)	SW846 6010B	06/22-07/16/99	CX5X210V
		Dilution Factor: 1			
Calcium	101	(86 - 109)	SW846 6010B	06/22-07/15/99	CX5X2113
		Dilution Factor: 1			
Antimony	97	(80 - 120)	SW846 6010B	06/22-07/16/99	CX5X210W
		Dilution Factor: 1			
Selenium	98	(80 - 120)	SW846 6010B	06/22-07/16/99	CX5X210X
		Dilution Factor: 1			
Cobalt	95	(83 - 107)	SW846 6010B	06/22-07/16/99	CX5X2114
		Dilution Factor: 1			
Thallium	101	(80 - 120)	SW846 6010B	06/22-07/16/99	CX5X2110
		Dilution Factor: 1			

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** WATER

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	100	(84 - 112)	SW846 6010B	06/22-07/16/99	CX5X2115
		Dilution Factor: 1			
Iron	110	(80 - 120)	SW846 6010B	06/22-07/16/99	CX5X2116
		Dilution Factor: 1			
Potassium	94	(87 - 106)	SW846 6010B	06/22-07/15/99	CX5X2117
		Dilution Factor: 1			
Magnesium	98	(88 - 112)	SW846 6010B	06/22-07/15/99	CX5X2118
		Dilution Factor: 1			
Manganese	98	(88 - 117)	SW846 6010B	06/22-07/15/99	CX5X2119
		Dilution Factor: 1			
Sodium	101	(88 - 107)	SW846 6010B	06/22-07/15/99	CX5X211F
		Dilution Factor: 1			
.ckel	97	(85 - 116)	SW846 6010B	06/22-07/16/99	CX5X211G
		Dilution Factor: 1			
Vanadium	97	(86 - 111)	SW846 6010B	06/22-07/16/99	CX5X211H
		Dilution Factor: 1			
Zinc	103	(83 - 120)	SW846 6010B	06/22-07/16/99	CX5X211E
		Dilution Factor: 1			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: A9F230000-294 **Prep Batch #...:** 9174294					
Silver	103	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8JR10A
		Dilution Factor: 1			
Aluminum	98	(80 - 113)	SW846 6010B	06/24-07/15/99	CX8JR11A
		Dilution Factor: 1			
Arsenic	91	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8JR10C
		Dilution Factor: 1			
Barium	96	(80 - 109)	SW846 6010B	06/24-07/16/99	CX8JR109
		Dilution Factor: 1			
Cadmium	94	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8JR10D
		Dilution Factor: 1			
Beryllium	90	(80 - 105)	SW846 6010B	06/24-07/16/99	CX8JR11C
		Dilution Factor: 1			
Chromium	96	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8JR10E
		Dilution Factor: 1			
Calcium	97	(80 - 109)	SW846 6010B	06/24-07/15/99	CX8JR11D
		Dilution Factor: 1			
Lead	92	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8JR10F
		Dilution Factor: 1			
Cobalt	90	(80 - 104)	SW846 6010B	06/24-07/16/99	CX8JR11E
		Dilution Factor: 1			
Copper	97	(80 - 113)	SW846 6010B	06/24-07/16/99	CX8JR11F
		Dilution Factor: 1			
Antimony	90	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8JR118
		Dilution Factor: 1			
Selenium	88	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8JR10G
		Dilution Factor: 1			
Mercury	92	(70 - 130)	SW846 7471A	06/24-06/28/99	CX8JR10H
		Dilution Factor: 1			

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	111	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8JR11G
		Dilution Factor: 1			
Potassium	90	(80 - 103)	SW846 6010B	06/24-07/15/99	CX8JR11H
		Dilution Factor: 1			
Thallium	95	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8JR119
		Dilution Factor: 1			
Magnesium	95	(80 - 109)	SW846 6010B	06/24-07/15/99	CX8JR112
		Dilution Factor: 1			
Manganese	97	(80 - 114)	SW846 6010B	06/24-07/16/99	CX8JR113
		Dilution Factor: 1			
Sodium	91	(80 - 107)	SW846 6010B	06/24-07/15/99	CX8JR114
		Dilution Factor: 1			
Nickel	94	(80 - 112)	SW846 6010B	06/24-07/16/99	CX8JR115
		Dilution Factor: 1			
Vanadium	94	(80 - 111)	SW846 6010B	06/24-07/16/99	CX8JR116
		Dilution Factor: 1			
Zinc	100	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8JR117
		Dilution Factor: 1			
LCS Lot-Sample#: A9F230000-305 **Prep Batch #...:** 9174305					
Silver	107	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8M810X
		Dilution Factor: 1			
Aluminum	100	(80 - 113)	SW846 6010B	06/24-07/15/99	CX8M8118
		Dilution Factor: 1			
Arsenic	96	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8M8110
		Dilution Factor: 1			
Barium	101	(80 - 109)	SW846 6010B	06/24-07/16/99	CX8M8119
		Dilution Factor: 1			
Beryllium	95	(80 - 105)	SW846 6010B	06/24-07/16/99	CX8M811A
		Dilution Factor: 1			
Cadmium	97	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8M8111
		Dilution Factor: 1			

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Calcium	98	(80 - 109)	SW846 6010B	06/24-07/15/99	CX8M811C
		Dilution Factor: 1			
Chromium	101	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8M8112
		Dilution Factor: 1			
Cobalt	95	(80 - 104)	SW846 6010B	06/24-07/16/99	CX8M811D
		Dilution Factor: 1			
Lead	97	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8M8113
		Dilution Factor: 1			
Copper	102	(80 - 113)	SW846 6010B	06/24-07/16/99	CX8M811E
		Dilution Factor: 1			
Antimony	95	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8M8114
		Dilution Factor: 1			
ron	120	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8M811F
		Dilution Factor: 1			
Selenium	92	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8M8115
		Dilution Factor: 1			
Mercury	86	(70 - 130)	SW846 7471A	06/24-06/28/99	CX8M8116
		Dilution Factor: 1			
Potassium	90	(80 - 103)	SW846 6010B	06/24-07/15/99	CX8M811G
		Dilution Factor: 1			
Thallium	101	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8M8117
		Dilution Factor: 1			
Magnesium	95	(80 - 109)	SW846 6010B	06/24-07/15/99	CX8M811H
		Dilution Factor: 1			
Manganese	103	(80 - 114)	SW846 6010B	06/24-07/16/99	CX8M810R
		Dilution Factor: 1			
Sodium	92	(80 - 107)	SW846 6010B	06/24-07/15/99	CX8M810T
		Dilution Factor: 1			
Nickel	96	(80 - 112)	SW846 6010B	06/24-07/16/99	CX8M810U
		Dilution Factor: 1			

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Vanadium	99	(80 - 111)	SW846 6010B	06/24-07/16/99	CX8M810V
		Dilution Factor: 1			
Zinc	102	(80 - 120)	SW846 6010B	06/24-07/16/99	CX8M810W
		Dilution Factor: 1			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

General Chemistry

Client Lot #...: A9F140142 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon		Work Order #: CXP61102	LCS Lot-Sample#: A9G050000-124		
	110	(69 - 130)	SMCA WALKLEY-BLAC	07/05/99	9186124

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 **Work Order #...:** CX575101 **Matrix.....:** SOLID
MB Lot-Sample #: A9F210000-184

Prep Date.....: 06/18/99
Analysis Date..: 06/18/99 **Prep Batch #...:** 9172184
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	ug/kg	SW846 8260B
Benzene	ND	5.0	ug/kg	SW846 8260B
Bromodichloromethane	ND	5.0	ug/kg	SW846 8260B
Bromoform	ND	5.0	ug/kg	SW846 8260B
Bromomethane	ND	5.0	ug/kg	SW846 8260B
2-Butanone	ND	10	ug/kg	SW846 8260B
Carbon disulfide	ND	5.0	ug/kg	SW846 8260B
Carbon tetrachloride	ND	5.0	ug/kg	SW846 8260B
Chlorobenzene	ND	5.0	ug/kg	SW846 8260B
Dibromochloromethane	ND	5.0	ug/kg	SW846 8260B
Chloroethane	ND	5.0	ug/kg	SW846 8260B
Chloroform	ND	5.0	ug/kg	SW846 8260B
Chloromethane	ND	5.0	ug/kg	SW846 8260B
1,1-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
,2-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
,1-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
cis-1,2-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
trans-1,2-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
1,2-Dichloropropane	ND	5.0	ug/kg	SW846 8260B
cis-1,3-Dichloropropene	ND	5.0	ug/kg	SW846 8260B
trans-1,3-Dichloropropene	ND	5.0	ug/kg	SW846 8260B
Ethylbenzene	ND	5.0	ug/kg	SW846 8260B
2-Hexanone	ND	10	ug/kg	SW846 8260B
Methylene chloride	ND	5.0	ug/kg	SW846 8260B
4-Methyl-2-pentanone	ND	10	ug/kg	SW846 8260B
Styrene	ND	5.0	ug/kg	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	5.0	ug/kg	SW846 8260B
Tetrachloroethene	ND	5.0	ug/kg	SW846 8260B
Toluene	ND	5.0	ug/kg	SW846 8260B
1,1,1-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
1,1,2-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
Trichloroethene	ND	5.0	ug/kg	SW846 8260B
Vinyl chloride	ND	5.0	ug/kg	SW846 8260B
Xylenes (total)	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(70 - 135)
1,2-Dichloroethane-d4	109	(75 - 117)
luene-d8	101	(86 - 122)
omofluorobenzene	98	(60 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 **Work Order #...:** CX5P0101 **Matrix.....:** SOLID
MB Lot-Sample #: A9F210000-281

Prep Date.....: 06/21/99
Analysis Date..: 06/21/99 **Prep Batch #...:** 9172281
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	ug/kg	SW846 8260B
Benzene	ND	5.0	ug/kg	SW846 8260B
Bromodichloromethane	ND	5.0	ug/kg	SW846 8260B
Bromoform	ND	5.0	ug/kg	SW846 8260B
Bromomethane	ND	5.0	ug/kg	SW846 8260B
2-Butanone	ND	10	ug/kg	SW846 8260B
Carbon disulfide	ND	5.0	ug/kg	SW846 8260B
Carbon tetrachloride	ND	5.0	ug/kg	SW846 8260B
Chlorobenzene	ND	5.0	ug/kg	SW846 8260B
Dibromochloromethane	ND	5.0	ug/kg	SW846 8260B
Chloroethane	ND	5.0	ug/kg	SW846 8260B
Chloroform	ND	5.0	ug/kg	SW846 8260B
Chloromethane	ND	5.0	ug/kg	SW846 8260B
1,1-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
1,2-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
1,1-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
cis-1,2-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
trans-1,2-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
1,2-Dichloropropane	ND	5.0	ug/kg	SW846 8260B
cis-1,3-Dichloropropene	ND	5.0	ug/kg	SW846 8260B
trans-1,3-Dichloropropene	ND	5.0	ug/kg	SW846 8260B
Ethylbenzene	ND	5.0	ug/kg	SW846 8260B
2-Hexanone	ND	10	ug/kg	SW846 8260B
Methylene chloride	ND	5.0	ug/kg	SW846 8260B
4-Methyl-2-pentanone	ND	10	ug/kg	SW846 8260B
Styrene	ND	5.0	ug/kg	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	5.0	ug/kg	SW846 8260B
Tetrachloroethene	ND	5.0	ug/kg	SW846 8260B
Toluene	ND	5.0	ug/kg	SW846 8260B
1,1,1-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
1,1,2-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
Trichloroethene	ND	5.0	ug/kg	SW846 8260B
Vinyl chloride	ND	5.0	ug/kg	SW846 8260B
Xylenes (total)	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	100	(70 - 135)
1,2-Dichloroethane-d4	100	(75 - 117)
Toluene-d8	91	(86 - 122)
Bromofluorobenzene	88	(60 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 **Work Order #...:** CX1Q1101 **Matrix.....:** SOLID
MB Lot-Sample #: A9F170000-297

Prep Date.....: 06/17/99
Analysis Date..: 06/17/99 **Prep Batch #...:** 9168297
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acetone	ND	10	ug/kg	SW846 8260B
Benzene	ND	5.0	ug/kg	SW846 8260B
Bromodichloromethane	ND	5.0	ug/kg	SW846 8260B
Bromoform	ND	5.0	ug/kg	SW846 8260B
Bromomethane	ND	5.0	ug/kg	SW846 8260B
2-Butanone	ND	10	ug/kg	SW846 8260B
Carbon disulfide	ND	5.0	ug/kg	SW846 8260B
Carbon tetrachloride	ND	5.0	ug/kg	SW846 8260B
Chlorobenzene	ND	5.0	ug/kg	SW846 8260B
Dibromochloromethane	ND	5.0	ug/kg	SW846 8260B
Chloroethane	ND	5.0	ug/kg	SW846 8260B
Chloroform	ND	5.0	ug/kg	SW846 8260B
Chloromethane	ND	5.0	ug/kg	SW846 8260B
1,1-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
1,2-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
1,1-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
cis-1,2-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
trans-1,2-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
1,2-Dichloropropane	ND	5.0	ug/kg	SW846 8260B
cis-1,3-Dichloropropene	ND	5.0	ug/kg	SW846 8260B
trans-1,3-Dichloropropene	ND	5.0	ug/kg	SW846 8260B
Ethylbenzene	ND	5.0	ug/kg	SW846 8260B
2-Hexanone	ND	10	ug/kg	SW846 8260B
Methylene chloride	ND	5.0	ug/kg	SW846 8260B
4-Methyl-2-pentanone	ND	10	ug/kg	SW846 8260B
Styrene	ND	5.0	ug/kg	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	5.0	ug/kg	SW846 8260B
Tetrachloroethene	ND	5.0	ug/kg	SW846 8260B
Toluene	ND	5.0	ug/kg	SW846 8260B
1,1,1-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
1,1,2-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
Trichloroethene	ND	5.0	ug/kg	SW846 8260B
Vinyl chloride	ND	5.0	ug/kg	SW846 8260B
Xylenes (total)	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(70 - 135)
1,2-Dichloroethane-d4	106	(75 - 117)
Toluene-d8	101	(86 - 122)
Bromofluorobenzene	99	(60 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVLT101 **Matrix.....:** WATER
MB Lot-Sample #: A9F150000-106

Prep Date.....: 06/15/99
Analysis Date..: 06/17/99 **Prep Batch #...:** 9166106
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	10	ug/L	SW846 8270C
Acenaphthylene	ND	10	ug/L	SW846 8270C
Anthracene	ND	10	ug/L	SW846 8270C
Benzo(a)anthracene	ND	10	ug/L	SW846 8270C
Benzo(b)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(k)fluoranthene	ND	10	ug/L	SW846 8270C
Benzo(ghi)perylene	ND	10	ug/L	SW846 8270C
Benzo(a)pyrene	ND	10	ug/L	SW846 8270C
bis(2-Chloroethoxy) methane	ND	10	ug/L	SW846 8270C
bis(2-Chloroethyl)- ether	ND	10	ug/L	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	10	ug/L	SW846 8270C
-Bromophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Butyl benzyl phthalate	ND	10	ug/L	SW846 8270C
4-Chloroaniline	ND	10	ug/L	SW846 8270C
4-Chloro-3-methylphenol	ND	10	ug/L	SW846 8270C
2-Chloronaphthalene	ND	10	ug/L	SW846 8270C
2-Chlorophenol	ND	10	ug/L	SW846 8270C
4-Chlorophenyl phenyl ether	ND	10	ug/L	SW846 8270C
Chrysene	ND	10	ug/L	SW846 8270C
Dibenz(a,h)anthracene	ND	10	ug/L	SW846 8270C
Dibenzofuran	ND	10	ug/L	SW846 8270C
Di-n-butyl phthalate	ND	10	ug/L	SW846 8270C
1,2-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,3-Dichlorobenzene	ND	10	ug/L	SW846 8270C
1,4-Dichlorobenzene	ND	10	ug/L	SW846 8270C
3,3'-Dichlorobenzidine	ND	10	ug/L	SW846 8270C
2,4-Dichlorophenol	ND	10	ug/L	SW846 8270C
Diethyl phthalate	ND	10	ug/L	SW846 8270C
2,4-Dimethylphenol	ND	10	ug/L	SW846 8270C
Dimethyl phthalate	ND	10	ug/L	SW846 8270C
Di-n-octyl phthalate	ND	10	ug/L	SW846 8270C
4,6-Dinitro- 2-methylphenol	ND	25	ug/L	SW846 8270C
2,4-Dinitrophenol	ND	25	ug/L	SW846 8270C
,4-Dinitrotoluene	ND	10	ug/L	SW846 8270C
,6-Dinitrotoluene	ND	10	ug/L	SW846 8270C

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVLT101 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Fluoranthene	ND	10	ug/L	SW846 8270C
Fluorene	ND	10	ug/L	SW846 8270C
Hexachlorobenzene	ND	10	ug/L	SW846 8270C
Hexachlorobutadiene	ND	10	ug/L	SW846 8270C
Hexachlorocyclopenta-diene	ND	10	ug/L	SW846 8270C
Hexachloroethane	ND	10	ug/L	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	10	ug/L	SW846 8270C
Isophorone	ND	10	ug/L	SW846 8270C
2-Methylnaphthalene	ND	10	ug/L	SW846 8270C
2-Methylphenol	ND	10	ug/L	SW846 8270C
Naphthalene	ND	10	ug/L	SW846 8270C
2-Nitroaniline	ND	25	ug/L	SW846 8270C
3-Nitroaniline	ND	25	ug/L	SW846 8270C
4-Nitroaniline	ND	25	ug/L	SW846 8270C
Nitrobenzene	ND	10	ug/L	SW846 8270C
2-Nitrophenol	ND	10	ug/L	SW846 8270C
4-Nitrophenol	ND	25	ug/L	SW846 8270C
-Nitrosodi-n-propyl-amine	ND	10	ug/L	SW846 8270C
N-Nitrosodiphenylamine	ND	10	ug/L	SW846 8270C
Pentachlorophenol	ND	25	ug/L	SW846 8270C
Phenanthrene	ND	10	ug/L	SW846 8270C
Phenol	ND	10	ug/L	SW846 8270C
Pyrene	ND	10	ug/L	SW846 8270C
1,2,4-Trichlorobenzene	ND	10	ug/L	SW846 8270C
2,4,5-Trichlorophenol	ND	10	ug/L	SW846 8270C
2,4,6-Trichlorophenol	ND	10	ug/L	SW846 8270C
Carbazole	ND	10	ug/L	SW846 8270C
4-Methylphenol	ND	10	ug/L	SW846 8270C
bis(2-Chloroisopropyl) ether	ND	10	ug/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	73	(40 - 114)
Terphenyl-d14	79	(33 - 141)
2-Fluorobiphenyl	71	(45 - 118)
2-Fluorophenol	62	(21 - 100)
Phenol-d5	67	(17 - 101)
2,4,6-Tribromophenol	64	(16 - 129)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVLV101 **Matrix.....:** SOLID
MB Lot-Sample #: A9F150000-107

Prep Date.....: 06/15/99
Analysis Date..: 06/17/99 **Prep Batch #...:** 9166107
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	330	ug/kg	SW846 8270C
Acenaphthylene	ND	330	ug/kg	SW846 8270C
Anthracene	ND	330	ug/kg	SW846 8270C
Benzo(a)anthracene	ND	330	ug/kg	SW846 8270C
Benzo(b)fluoranthene	ND	330	ug/kg	SW846 8270C
Benzo(k)fluoranthene	ND	330	ug/kg	SW846 8270C
Benzo(ghi)perylene	ND	330	ug/kg	SW846 8270C
Benzo(a)pyrene	ND	330	ug/kg	SW846 8270C
bis(2-Chloroethoxy) methane	ND	330	ug/kg	SW846 8270C
bis(2-Chloroethyl)- ether	ND	330	ug/kg	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	330	ug/kg	SW846 8270C
-Bromophenyl phenyl ether	ND	330	ug/kg	SW846 8270C
Butyl benzyl phthalate	ND	330	ug/kg	SW846 8270C
4-Chloroaniline	ND	330	ug/kg	SW846 8270C
4-Chloro-3-methylphenol	ND	330	ug/kg	SW846 8270C
2-Chloronaphthalene	ND	330	ug/kg	SW846 8270C
2-Chlorophenol	ND	330	ug/kg	SW846 8270C
4-Chlorophenyl phenyl ether	ND	330	ug/kg	SW846 8270C
Chrysene	ND	330	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	ND	330	ug/kg	SW846 8270C
Dibenzofuran	ND	330	ug/kg	SW846 8270C
Di-n-butyl phthalate	ND	330	ug/kg	SW846 8270C
1,2-Dichlorobenzene	ND	330	ug/kg	SW846 8270C
1,3-Dichlorobenzene	ND	330	ug/kg	SW846 8270C
1,4-Dichlorobenzene	ND	330	ug/kg	SW846 8270C
3,3'-Dichlorobenzidine	ND	330	ug/kg	SW846 8270C
2,4-Dichlorophenol	ND	330	ug/kg	SW846 8270C
Diethyl phthalate	ND	330	ug/kg	SW846 8270C
2,4-Dimethylphenol	ND	330	ug/kg	SW846 8270C
Dimethyl phthalate	ND	330	ug/kg	SW846 8270C
Di-n-octyl phthalate	ND	330	ug/kg	SW846 8270C
4,6-Dinitro-2-methylphenol	ND	800	ug/kg	SW846 8270C
2,4-Dinitrophenol	ND	800	ug/kg	SW846 8270C
,4-Dinitrotoluene	ND	330	ug/kg	SW846 8270C
,6-Dinitrotoluene	ND	330	ug/kg	SW846 8270C

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVLV101 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Fluoranthene	ND	330	ug/kg	SW846 8270C
Fluorene	ND	330	ug/kg	SW846 8270C
Hexachlorobenzene	ND	330	ug/kg	SW846 8270C
Hexachlorobutadiene	ND	330	ug/kg	SW846 8270C
Hexachlorocyclopenta-diene	ND	330	ug/kg	SW846 8270C
Hexachloroethane	ND	330	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg	SW846 8270C
Isophorone	ND	330	ug/kg	SW846 8270C
2-Methylnaphthalene	ND	330	ug/kg	SW846 8270C
2-Methylphenol	ND	330	ug/kg	SW846 8270C
Naphthalene	ND	330	ug/kg	SW846 8270C
2-Nitroaniline	ND	800	ug/kg	SW846 8270C
3-Nitroaniline	ND	800	ug/kg	SW846 8270C
4-Nitroaniline	ND	800	ug/kg	SW846 8270C
Nitrobenzene	ND	330	ug/kg	SW846 8270C
2-Nitrophenol	ND	330	ug/kg	SW846 8270C
4-Nitrophenol	ND	800	ug/kg	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	330	ug/kg	SW846 8270C
N-Nitrosodiphenylamine	ND	330	ug/kg	SW846 8270C
Pentachlorophenol	ND	800	ug/kg	SW846 8270C
Phenanthrene	ND	330	ug/kg	SW846 8270C
Phenol	ND	330	ug/kg	SW846 8270C
Pyrene	ND	330	ug/kg	SW846 8270C
1,2,4-Trichlorobenzene	ND	330	ug/kg	SW846 8270C
2,4,5-Trichlorophenol	ND	330	ug/kg	SW846 8270C
2,4,6-Trichlorophenol	ND	330	ug/kg	SW846 8270C
Carbazole	ND	330	ug/kg	SW846 8270C
4-Methylphenol	ND	330	ug/kg	SW846 8270C
bis(2-Chloroisopropyl) ether	ND	330	ug/kg	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	71	(23 - 120)
Terphenyl-d14	75	(18 - 137)
2-Fluorobiphenyl	71	(30 - 115)
2-Fluorophenol	64	(30 - 115)
Phenol-d5	67	(24 - 113)
2,4,6-Tribromophenol	60	(19 - 122)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CX51W101 **Matrix.....:** SOLID
MB Lot-Sample #: A9F210000-112

Prep Date.....: 06/21/99
Analysis Date..: 06/25/99 **Prep Batch #...:** 9172112
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	330	ug/kg	SW846 8270C
Acenaphthylene	ND	330	ug/kg	SW846 8270C
Anthracene	ND	330	ug/kg	SW846 8270C
Benzo(a)anthracene	ND	330	ug/kg	SW846 8270C
Benzo(b)fluoranthene	ND	330	ug/kg	SW846 8270C
Benzo(k)fluoranthene	ND	330	ug/kg	SW846 8270C
Benzo(ghi)perylene	ND	330	ug/kg	SW846 8270C
Benzo(a)pyrene	ND	330	ug/kg	SW846 8270C
bis(2-Chloroethoxy) methane	ND	330	ug/kg	SW846 8270C
bis(2-Chloroethyl)- ether	ND	330	ug/kg	SW846 8270C
bis(2-Ethylhexyl) phthalate	ND	330	ug/kg	SW846 8270C
·Bromophenyl phenyl ether	ND	330	ug/kg	SW846 8270C
Butyl benzyl phthalate	ND	330	ug/kg	SW846 8270C
4-Chloroaniline	ND	330	ug/kg	SW846 8270C
4-Chloro-3-methylphenol	ND	330	ug/kg	SW846 8270C
2-Chloronaphthalene	ND	330	ug/kg	SW846 8270C
2-Chlorophenol	ND	330	ug/kg	SW846 8270C
4-Chlorophenyl phenyl ether	ND	330	ug/kg	SW846 8270C
Chrysene	ND	330	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	ND	330	ug/kg	SW846 8270C
Dibenzofuran	ND	330	ug/kg	SW846 8270C
Di-n-butyl phthalate	ND	330	ug/kg	SW846 8270C
1,2-Dichlorobenzene	ND	330	ug/kg	SW846 8270C
1,3-Dichlorobenzene	ND	330	ug/kg	SW846 8270C
1,4-Dichlorobenzene	ND	330	ug/kg	SW846 8270C
3,3'-Dichlorobenzidine	ND	330	ug/kg	SW846 8270C
2,4-Dichlorophenol	ND	330	ug/kg	SW846 8270C
Diethyl phthalate	ND	330	ug/kg	SW846 8270C
2,4-Dimethylphenol	ND	330	ug/kg	SW846 8270C
Dimethyl phthalate	ND	330	ug/kg	SW846 8270C
Di-n-octyl phthalate	ND	330	ug/kg	SW846 8270C
4,6-Dinitro- 2-methylphenol	ND	800	ug/kg	SW846 8270C
2,4-Dinitrophenol	ND	800	ug/kg	SW846 8270C
4-Dinitrotoluene	ND	330	ug/kg	SW846 8270C
6-Dinitrotoluene	ND	330	ug/kg	SW846 8270C

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CX51W101 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Fluoranthene	ND	330	ug/kg	SW846 8270C
Fluorene	ND	330	ug/kg	SW846 8270C
Hexachlorobenzene	ND	330	ug/kg	SW846 8270C
Hexachlorobutadiene	ND	330	ug/kg	SW846 8270C
Hexachlorocyclopenta-diene	ND	330	ug/kg	SW846 8270C
Hexachloroethane	ND	330	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg	SW846 8270C
Isophorone	ND	330	ug/kg	SW846 8270C
2-Methylnaphthalene	ND	330	ug/kg	SW846 8270C
2-Methylphenol	ND	330	ug/kg	SW846 8270C
Naphthalene	ND	330	ug/kg	SW846 8270C
2-Nitroaniline	ND	800	ug/kg	SW846 8270C
3-Nitroaniline	ND	800	ug/kg	SW846 8270C
4-Nitroaniline	ND	800	ug/kg	SW846 8270C
Nitrobenzene	ND	330	ug/kg	SW846 8270C
2-Nitrophenol	ND	330	ug/kg	SW846 8270C
'-Nitrophenol	ND	800	ug/kg	SW846 8270C
-Nitrosodi-n-propyl-amine	ND	330	ug/kg	SW846 8270C
N-Nitrosodiphenylamine	ND	330	ug/kg	SW846 8270C
Pentachlorophenol	ND	800	ug/kg	SW846 8270C
Phenanthrene	ND	330	ug/kg	SW846 8270C
Phenol	ND	330	ug/kg	SW846 8270C
Pyrene	ND	330	ug/kg	SW846 8270C
1,2,4-Trichlorobenzene	ND	330	ug/kg	SW846 8270C
2,4,5-Trichlorophenol	ND	330	ug/kg	SW846 8270C
2,4,6-Trichlorophenol	ND	330	ug/kg	SW846 8270C
Carbazole	ND	330	ug/kg	SW846 8270C
4-Methylphenol	ND	330	ug/kg	SW846 8270C
bis(2-Chloroisopropyl) ether	ND	330	ug/kg	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	49	(23 - 120)
Terphenyl-d14	74	(18 - 137)
2-Fluorobiphenyl	54	(30 - 115)
2-Fluorophenol	52	(30 - 115)
Phenol-d5	49	(24 - 113)
2,4,6-Tribromophenol	51	(19 - 122)

NOTE(S):

lculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

HPLC

Client Lot #...: A9F140142 **Work Order #...:** CX50J101 **Matrix.....:** SOLID
MB Lot-Sample #: H9F200000-101

Prep Date.....: 06/20/99
Analysis Date..: 06/23/99 **Prep Batch #...:** 9171101
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
HMX	ND	0.50	mg/kg	SW846 8330
RDX	ND	0.50	mg/kg	SW846 8330
1,3,5-Trinitrobenzene	ND	0.25	mg/kg	SW846 8330
1,3-Dinitrobenzene	ND	0.25	mg/kg	SW846 8330
Tetryl	ND	0.65	mg/kg	SW846 8330
Nitrobenzene	ND	0.25	mg/kg	SW846 8330
2,4,6-Trinitrotoluene	ND	0.25	mg/kg	SW846 8330
4-Amino-2,6-dinitrotoluen	ND	0.25	mg/kg	SW846 8330
2-Amino-4,6-dinitrotoluen	ND	0.25	mg/kg	SW846 8330
2,6-Dinitrotoluene	ND	0.25	mg/kg	SW846 8330
2,4-Dinitrotoluene	ND	0.25	mg/kg	SW846 8330
2-Nitrotoluene	ND	0.25	mg/kg	SW846 8330
4-Nitrotoluene	ND	0.25	mg/kg	SW846 8330
-Nitrotoluene	ND	0.25	mg/kg	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	103	(76 - 124)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

HPLC

Client Lot #...: A9F140142 **Work Order #...:** CX493101 **Matrix.....:** SOLID
MB Lot-Sample #: H9F190000-118

Prep Date.....: 06/19/99
Analysis Date..: 06/24/99 **Prep Batch #...:** 9170118
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
HMX	ND	0.50	mg/kg	SW846 8330
RDX	ND	0.50	mg/kg	SW846 8330
1,3,5-Trinitrobenzene	ND	0.25	mg/kg	SW846 8330
1,3-Dinitrobenzene	ND	0.25	mg/kg	SW846 8330
Tetryl	ND	0.65	mg/kg	SW846 8330
Nitrobenzene	ND	0.25	mg/kg	SW846 8330
2,4,6-Trinitrotoluene	ND	0.25	mg/kg	SW846 8330
4-Amino-2,6-dinitrotoluen	ND	0.25	mg/kg	SW846 8330
2-Amino-4,6-dinitrotoluen	ND	0.25	mg/kg	SW846 8330
2,6-Dinitrotoluene	ND	0.25	mg/kg	SW846 8330
2,4-Dinitrotoluene	ND	0.25	mg/kg	SW846 8330
2-Nitrotoluene	ND	0.25	mg/kg	SW846 8330
4-Nitrotoluene	ND	0.25	mg/kg	SW846 8330
3-Nitrotoluene	ND	0.25	mg/kg	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	114	(76 - 124)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

HPLC

Client Lot #...: A9F140142 **Work Order #...:** CX3DD101 **Matrix.....:** SOLID
MB Lot-Sample #: H9F180000-280

Prep Date.....: 06/18/99
Analysis Date..: 06/23/99 **Prep Batch #...:** 9169280
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
HMX	ND	0.50	mg/kg	SW846 8330
RDX	ND	0.50	mg/kg	SW846 8330
1,3,5-Trinitrobenzene	ND	0.25	mg/kg	SW846 8330
1,3-Dinitrobenzene	ND	0.25	mg/kg	SW846 8330
Tetryl	ND	0.65	mg/kg	SW846 8330
Nitrobenzene	ND	0.25	mg/kg	SW846 8330
2,4,6-Trinitrotoluene	ND	0.25	mg/kg	SW846 8330
4-Amino-2,6-dinitrotoluen	ND	0.25	mg/kg	SW846 8330
2-Amino-4,6-dinitrotoluen	ND	0.25	mg/kg	SW846 8330
2,6-Dinitrotoluene	ND	0.25	mg/kg	SW846 8330
2,4-Dinitrotoluene	ND	0.25	mg/kg	SW846 8330
2-Nitrotoluene	ND	0.25	mg/kg	SW846 8330
4-Nitrotoluene	ND	0.25	mg/kg	SW846 8330
3-Nitrotoluene	ND	0.25	mg/kg	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	100	(76 - 124)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

HPLC

Client Lot #...: A9F140142 **Work Order #...:** CWX9J101 **Matrix.....:** WATER
MB Lot-Sample #: H9F160000-166

Prep Date.....: 06/16/99
Analysis Date..: 06/17/99 **Prep Batch #...:** 9167166
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
1,3-Dinitrobenzene	ND	0.20	ug/L	SW846 8330
2,4-Dinitrotoluene	ND	0.20	ug/L	SW846 8330
2,6-Dinitrotoluene	ND	0.20	ug/L	SW846 8330
Nitrobenzene	ND	0.20	ug/L	SW846 8330
1,3,5-Trinitrobenzene	ND	0.20	ug/L	SW846 8330
2,4,6-Trinitrotoluene	ND	0.20	ug/L	SW846 8330
HMX	ND	0.50	ug/L	SW846 8330
RDX	ND	0.50	ug/L	SW846 8330
Tetryl	ND	0.20	ug/L	SW846 8330
2-Nitrotoluene	ND	0.20	ug/L	SW846 8330
3-Nitrotoluene	ND	0.20	ug/L	SW846 8330
4-Nitrotoluene	ND	0.20	ug/L	SW846 8330
4-Amino-2,6-dinitrotoluen	ND	0.20	ug/L	SW846 8330
2-Amino-4,6-dinitrotoluen	ND	0.20	ug/L	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	93	(32 - 127)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVLR101 **Matrix.....:** WATER
MB Lot-Sample #: A9F150000-105

Prep Date.....: 06/15/99
Analysis Date..: 06/22/99 **Prep Batch #...:** 9166105
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Aroclor 1016	ND	0.50	ug/L	SW846 8082
Aroclor 1221	ND	0.50	ug/L	SW846 8082
Aroclor 1232	ND	0.50	ug/L	SW846 8082
Aroclor 1242	ND	0.50	ug/L	SW846 8082
Aroclor 1248	ND	0.50	ug/L	SW846 8082
Aroclor 1254	ND	0.50	ug/L	SW846 8082
Aroclor 1260	ND	0.50	ug/L	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	75	(10 - 130)
Decachlorobiphenyl	79	(10 - 116)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVLW101 **Matrix.....:** SOLID
MB Lot-Sample #: A9F150000-108

Prep Date.....: 06/15/99
Analysis Date..: 06/23/99 **Prep Batch #...:** 9166108
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Aroclor 1016	ND	33	ug/kg	SW846 8082
Aroclor 1221	ND	33	ug/kg	SW846 8082
Aroclor 1232	ND	33	ug/kg	SW846 8082
Aroclor 1242	ND	33	ug/kg	SW846 8082
Aroclor 1248	ND	33	ug/kg	SW846 8082
Aroclor 1254	ND	33	ug/kg	SW846 8082
Aroclor 1260	ND	33	ug/kg	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	88	(10 - 129)
Decachlorobiphenyl	102	(10 - 138)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: A9F210000-344 **Prep Batch #...:** 9172344						
Mercury	ND	0.20	ug/L	SW846 7470A	06/22-06/23/99	CX5X2108
		Dilution Factor: 1				
Silver	ND	5.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X2109
		Dilution Factor: 1				
Aluminum	ND	200	ug/L	SW846 6010B	06/22-07/15/99	CX5X210J
		Dilution Factor: 1				
Arsenic	ND	10.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X2101
		Dilution Factor: 1				
Cadmium	ND	2.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X2102
		Dilution Factor: 1				
Barium	ND	200	ug/L	SW846 6010B	06/22-07/16/99	CX5X210K
		Dilution Factor: 1				
eryllium	ND	5.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X210L
		Dilution Factor: 1				
Chromium	ND	5.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X2103
		Dilution Factor: 1				
Calcium	ND	5000	ug/L	SW846 6010B	06/22-07/15/99	CX5X210A
		Dilution Factor: 1				
Lead	ND	3.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X2104
		Dilution Factor: 1				
Antimony	ND	10.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X2105
		Dilution Factor: 1				
Cobalt	ND	50.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X210C
		Dilution Factor: 1				
Selenium	ND	5.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X2106
		Dilution Factor: 1				
Thallium	ND	10.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X2107
		Dilution Factor: 1				
Copper	ND	25.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X210D
		Dilution Factor: 1				

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** WATER

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	**174**	**100**	**ug/L**	**SW846 6010B**	**06/22-07/16/99**	**CX5X210E**
		Dilution Factor: 1				
Potassium	ND	5000	ug/L	SW846 6010B	06/22-07/15/99	CX5X210F
		Dilution Factor: 1				
Magnesium	ND	5000	ug/L	SW846 6010B	06/22-07/15/99	CX5X210G
		Dilution Factor: 1				
Manganese	ND	15.0	ug/L	SW846 6010B	06/22-07/15/99	CX5X210H
		Dilution Factor: 1				
Sodium	ND	5000	ug/L	SW846 6010B	06/22-07/15/99	CX5X210N
		Dilution Factor: 1				
Nickel	ND	40.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X210P
		Dilution Factor: 1				
Vanadium	ND	50.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X210Q
		Dilution Factor: 1				
Zinc	ND	20.0	ug/L	SW846 6010B	06/22-07/16/99	CX5X210M
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** SOLID

MB Lot-Sample #: A9F230000-294 **Prep Batch #...:** 9174294

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Aluminum	ND	20.0	mg/kg	SW846 6010B	06/24-07/15/99	CX8JR10T
		Dilution Factor: 1				
Silver	ND	0.50	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR102
		Dilution Factor: 1				
Arsenic	ND	1.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR103
		Dilution Factor: 1				
Barium	ND	20.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR101
		Dilution Factor: 1				
Beryllium	ND	0.50	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR10U
		Dilution Factor: 1				
Cadmium	ND	0.20	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR104
		Dilution Factor: 1				
Calcium	ND	500	mg/kg	SW846 6010B	06/24-07/15/99	CX8JR10V
		Dilution Factor: 1				
Chromium	ND	0.50	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR105
		Dilution Factor: 1				
Cobalt	ND	5.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR10W
		Dilution Factor: 1				
Lead	ND	0.30	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR106
		Dilution Factor: 1				
Antimony	ND	1.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR10Q
		Dilution Factor: 1				
Copper	ND	2.5	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR10X
		Dilution Factor: 1				
Iron	ND	10.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR110
		Dilution Factor: 1				
Mercury	ND	0.10	mg/kg	SW846 7471A	06/24-06/28/99	CX8JR108
		Dilution Factor: 1				
Selenium	ND	0.50	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR107
		Dilution Factor: 1				

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Potassium	ND	500	mg/kg	SW846 6010B	06/24-07/15/99	CX8JR111
		Dilution Factor: 1				
Thallium	ND	1.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR10R
		Dilution Factor: 1				
Magnesium	ND	500	mg/kg	SW846 6010B	06/24-07/15/99	CX8JR10J
		Dilution Factor: 1				
Manganese	ND	1.5	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR10K
		Dilution Factor: 1				
Sodium	ND	500	mg/kg	SW846 6010B	06/24-07/15/99	CX8JR10L
		Dilution Factor: 1				
Nickel	ND	4.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR10M
		Dilution Factor: 1				
Vanadium	ND	5.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR10N
		Dilution Factor: 1				
Zinc	ND	2.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8JR10P
		Dilution Factor: 1				

MB Lot-Sample #: A9F230000-305 **Prep Batch #...:** 9174305

Aluminum	ND	20.0	mg/kg	SW846 6010B	06/24-07/15/99	CX8M810G
		Dilution Factor: 1				
Silver	ND	0.50	mg/kg	SW846 6010B	06/24-07/16/99	CX8M8106
		Dilution Factor: 1				
Arsenic	ND	1.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8M8107
		Dilution Factor: 1				
Barium	ND	20.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8M810H
		Dilution Factor: 1				
Beryllium	ND	0.50	mg/kg	SW846 6010B	06/24-07/16/99	CX8M810J
		Dilution Factor: 1				
Cadmium	ND	0.20	mg/kg	SW846 6010B	06/24-07/16/99	CX8M8108
		Dilution Factor: 1				
Calcium	ND	500	mg/kg	SW846 6010B	06/24-07/15/99	CX8M810K
		Dilution Factor: 1				

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Chromium	ND	0.50	mg/kg	SW846 6010B	06/24-07/16/99	CX8M8109
		Dilution Factor: 1				
Cobalt	ND	5.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8M810L
		Dilution Factor: 1				
Lead	ND	0.30	mg/kg	SW846 6010B	06/24-07/16/99	CX8M810A
		Dilution Factor: 1				
Antimony	ND	1.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8M810C
		Dilution Factor: 1				
Copper	ND	2.5	mg/kg	SW846 6010B	06/24-07/16/99	CX8M810M
		Dilution Factor: 1				
Iron	ND	10.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8M810N
		Dilution Factor: 1				
Mercury	ND	0.10	mg/kg	SW846 7471A	06/24-06/28/99	CX8M810E
		Dilution Factor: 1				
Selenium	ND	0.50	mg/kg	SW846 6010B	06/24-07/16/99	CX8M810D
		Dilution Factor: 1				
Potassium	ND	500	mg/kg	SW846 6010B	06/24-07/15/99	CX8M810P
		Dilution Factor: 1				
Thallium	ND	1.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8M810F
		Dilution Factor: 1				
Magnesium	ND	500	mg/kg	SW846 6010B	06/24-07/15/99	CX8M810Q
		Dilution Factor: 1				
Manganese	ND	1.5	mg/kg	SW846 6010B	06/24-07/16/99	CX8M8101
		Dilution Factor: 1				
Sodium	ND	500	mg/kg	SW846 6010B	06/24-07/15/99	CX8M8102
		Dilution Factor: 1				
Nickel	ND	4.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8M8103
		Dilution Factor: 1				
Vanadium	ND	5.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8M8104
		Dilution Factor: 1				
Zinc	3.5	2.0	mg/kg	SW846 6010B	06/24-07/16/99	CX8M8105
		Dilution Factor: 1				

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: A9F140142 Matrix.....: SOLID

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

METHOD BLANK REPORT

General Chemistry

Client Lot #...: A9F140142 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids		Work Order #:	CWX83101	MB Lot-Sample #:	A9F160000-139	
	ND	0.10	%	MCAWW 160.3 MOD	06/16-06/17/99	9167139
		Dilution Factor: 1				
Percent Solids		Work Order #:	CWXDW101	MB Lot-Sample #:	A9F160000-187	
	ND	0.10	%	MCAWW 160.3 MOD	06/16-06/17/99	9167187
		Dilution Factor: 1				
Percent Solids		Work Order #:	CX6JR101	MB Lot-Sample #:	A9F220000-141	
	ND	0.10	%	MCAWW 160.3 MOD	06/22-06/23/99	9173141
		Dilution Factor: 1				
Total Organic Carbon		Work Order #:	CXP61101	MB Lot-Sample #:	A9G050000-124	
	ND	100	mg/kg	SMCA WALKLEY-BLAC	07/05/99	9186124
		Dilution Factor: 1				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 Work Order #...: CWX78110-MS Matrix.....: SOLID
MS Lot-Sample #: A9F160107-010 CWX78111-MSD
Date Sampled...: 06/11/99 16:00 Date Received..: 06/14/99
Prep Date.....: 06/21/99 Analysis Date..: 06/21/99
Prep Batch #...: 9172281
Dilution Factor: 1 % Moisture.....: 14

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acetone	101	(80 - 120)			SW846 8260B
	103	(80 - 120)	1.4	(0-18)	SW846 8260B
Benzene	95	(84 - 121)			SW846 8260B
	93	(84 - 121)	2.4	(0-10)	SW846 8260B
Bromodichloromethane	90	(35 - 155)			SW846 8260B
	90	(35 - 155)	0.91	(0-21)	SW846 8260B
Bromoform	97	(45 - 169)			SW846 8260B
	100	(45 - 169)	3.3	(0-22)	SW846 8260B
Bromomethane	71	(10 - 242)			SW846 8260B
	71	(10 - 242)	0.53	(0-11)	SW846 8260B
2-Butanone	114	(85 - 119)			SW846 8260B
	120 a	(85 - 119)	4.4	(0-17)	SW846 8260B
Carbon disulfide	90	(81 - 125)			SW846 8260B
	89	(81 - 125)	0.94	(0-9.0)	SW846 8260B
Carbon tetrachloride	89	(70 - 140)			SW846 8260B
	89	(70 - 140)	0.12	(0-18)	SW846 8260B
Chlorobenzene	91	(76 - 122)			SW846 8260B
	90	(76 - 122)	1.5	(0-11)	SW846 8260B
Dibromochloromethane	93	(53 - 149)			SW846 8260B
	93	(53 - 149)	0.22	(0-16)	SW846 8260B
Chloroethane	94	(82 - 114)			SW846 8260B
	91	(82 - 114)	3.6	(0-11)	SW846 8260B
Chloroform	96	(51 - 138)			SW846 8260B
	94	(51 - 138)	2.6	(0-15)	SW846 8260B
Chloromethane	74	(10 - 273)			SW846 8260B
	71	(10 - 273)	4.1	(0-18)	SW846 8260B
1,1-Dichloroethane	97	(33 - 137)			SW846 8260B
	95	(33 - 137)	1.8	(0-14)	SW846 8260B
1,2-Dichloroethane	92	(49 - 155)			SW846 8260B
	91	(49 - 155)	0.87	(0-16)	SW846 8260B
1,1-Dichloroethene	97	(75 - 131)			SW846 8260B
	95	(75 - 131)	2.0	(0-17)	SW846 8260B
cis-1,2-Dichloroethene	107	(50 - 150)			SW846 8260B
	105	(50 - 150)	2.2	(0-50)	SW846 8260B
trans-1,2-Dichloroethene	89	(54 - 156)			SW846 8260B
	87	(54 - 156)	2.4	(0-10)	SW846 8260B
1,2-Dichloropropane	95	(10 - 210)			SW846 8260B
	91	(10 - 210)	3.6	(0-13)	SW846 8260B
is-1,3-Dichloropropene	87	(10 - 227)			SW846 8260B
	86	(10 - 227)	1.5	(0-14)	SW846 8260B

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 **Work Order #...:** CWX78110-MS **Matrix.....:** SOLID
MS Lot-Sample #: A9F160107-010 CWX78111-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
trans-1,3-Dichloropropene	90	(17 - 183)			SW846 8260B
	91	(17 - 183)	1.3	(0-14)	SW846 8260B
Ethylbenzene	89	(37 - 162)			SW846 8260B
	89	(37 - 162)	0.19	(0-14)	SW846 8260B
2-Hexanone	116	(87 - 129)			SW846 8260B
	124	(87 - 129)	7.0	(0-17)	SW846 8260B
Methylene chloride	83	(10 - 221)			SW846 8260B
	80	(10 - 221)	3.5	(0-22)	SW846 8260B
4-Methyl-2-pentanone	116	(90 - 125)			SW846 8260B
	128 a	(90 - 125)	9.9	(0-12)	SW846 8260B
Styrene	84	(79 - 100)			SW846 8260B
	82	(79 - 100)	1.4	(0-10)	SW846 8260B
1,1,2,2-Tetrachloroethane	108	(46 - 157)			SW846 8260B
	109	(46 - 157)	1.3	(0-24)	SW846 8260B
Tetrachloroethene	90	(64 - 148)			SW846 8260B
	90	(64 - 148)	0.39	(0-10)	SW846 8260B
Toluene	95	(79 - 129)			SW846 8260B
	93	(79 - 129)	2.0	(0-10)	SW846 8260B
1,1,1-Trichloroethane	93	(52 - 162)			SW846 8260B
	91	(52 - 162)	2.0	(0-12)	SW846 8260B
1,1,2-Trichloroethane	99	(52 - 150)			SW846 8260B
	99	(52 - 150)	0.72	(0-19)	SW846 8260B
Trichloroethene	90	(78 - 121)			SW846 8260B
	89	(78 - 121)	1.0	(0-11)	SW846 8260B
Vinyl chloride	78	(10 - 251)			SW846 8260B
	76	(10 - 251)	2.6	(0-24)	SW846 8260B
Xylenes (total)	90	(83 - 129)			SW846 8260B
	88	(83 - 129)	2.7	(0-10)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(70 - 135)
	97	(70 - 135)
1,2-Dichloroethane-d4	100	(75 - 117)
	96	(75 - 117)
Toluene-d8	97	(86 - 122)
	94	(86 - 122)
Bromofluorobenzene	90	(60 - 137)
	87	(60 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 Work Order #...: CWV9K10X-MS Matrix.....: SOLID
MS Lot-Sample #: A9F140142-033 CWV9K110-MSD
Date Sampled...: 06/10/99 Date Received..: 06/12/99
Prep Date.....: 06/18/99 Analysis Date..: 06/18/99
Prep Batch #...: 9172184
Dilution Factor: 1 % Moisture.....: 8.5

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acetone	142 a	(80 - 120)			SW846 8260B
	148 a	(80 - 120)	3.6	(0-18)	SW846 8260B
Benzene	112	(84 - 121)			SW846 8260B
	107	(84 - 121)	4.1	(0-10)	SW846 8260B
Bromodichloromethane	114	(35 - 155)			SW846 8260B
	108	(35 - 155)	5.0	(0-21)	SW846 8260B
Bromoform	122	(45 - 169)			SW846 8260B
	114	(45 - 169)	7.3	(0-22)	SW846 8260B
Bromomethane	78	(10 - 242)			SW846 8260B
	75	(10 - 242)	3.9	(0-11)	SW846 8260B
2-Butanone	119	(85 - 119)			SW846 8260B
	131 a	(85 - 119)	10	(0-17)	SW846 8260B
Carbon disulfide	102	(81 - 125)			SW846 8260B
	98	(81 - 125)	3.8	(0-9.0)	SW846 8260B
Carbon tetrachloride	123	(70 - 140)			SW846 8260B
	114	(70 - 140)	7.3	(0-18)	SW846 8260B
Chlorobenzene	109	(76 - 122)			SW846 8260B
	103	(76 - 122)	5.9	(0-11)	SW846 8260B
Dibromochloromethane	119	(53 - 149)			SW846 8260B
	113	(53 - 149)	5.1	(0-16)	SW846 8260B
Chloroethane	113	(82 - 114)			SW846 8260B
	113	(82 - 114)	0.06	(0-11)	SW846 8260B
Chloroform	119	(51 - 138)			SW846 8260B
	116	(51 - 138)	2.2	(0-15)	SW846 8260B
Chloromethane	84	(10 - 273)			SW846 8260B
	84	(10 - 273)	0.27	(0-18)	SW846 8260B
1,1-Dichloroethane	112	(33 - 137)			SW846 8260B
	114	(33 - 137)	1.5	(0-14)	SW846 8260B
1,2-Dichloroethane	122	(49 - 155)			SW846 8260B
	116	(49 - 155)	5.4	(0-16)	SW846 8260B
1,1-Dichloroethene	111	(75 - 131)			SW846 8260B
	110	(75 - 131)	1.2	(0-17)	SW846 8260B
cis-1,2-Dichloroethene	125	(50 - 150)			SW846 8260B
	120	(50 - 150)	3.7	(0-50)	SW846 8260B
trans-1,2-Dichloroethene	104	(54 - 156)			SW846 8260B
	100	(54 - 156)	3.3	(0-10)	SW846 8260B
1,2-Dichloropropane	110	(10 - 210)			SW846 8260B
	110	(10 - 210)	0.12	(0-13)	SW846 8260B
cis-1,3-Dichloropropene	101	(10 - 227)			SW846 8260B
	90	(10 - 227)	12	(0-14)	SW846 8260B

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 **Work Order #...:** CWV9K10X-MS **Matrix.....:** SOLID
MS Lot-Sample #: A9F140142-033 CWV9K110-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
trans-1,3-Dichloropropene	110	(17 - 183)			SW846 8260B
	101	(17 - 183)	8.9	(0-14)	SW846 8260B
Ethylbenzene	111	(37 - 162)			SW846 8260B
	104	(37 - 162)	6.3	(0-14)	SW846 8260B
2-Hexanone	145 a	(87 - 129)			SW846 8260B
	142 a	(87 - 129)	2.0	(0-17)	SW846 8260B
Methylene chloride	100	(10 - 221)			SW846 8260B
	101	(10 - 221)	1.7	(0-22)	SW846 8260B
4-Methyl-2-pentanone	135 a	(90 - 125)			SW846 8260B
	134 a	(90 - 125)	1.1	(0-12)	SW846 8260B
Styrene	101 a	(79 - 100)			SW846 8260B
	92	(79 - 100)	9.5	(0-10)	SW846 8260B
1,1,2,2-Tetrachloroethane	128	(46 - 157)			SW846 8260B
	132	(46 - 157)	3.2	(0-24)	SW846 8260B
Tetrachloroethene	116	(64 - 148)			SW846 8260B
	107	(64 - 148)	7.9	(0-10)	SW846 8260B
Toluene	114	(79 - 129)			SW846 8260B
	109	(79 - 129)	4.2	(0-10)	SW846 8260B
1,1,1-Trichloroethane	121	(52 - 162)			SW846 8260B
	116	(52 - 162)	4.7	(0-12)	SW846 8260B
1,1,2-Trichloroethane	123	(52 - 150)			SW846 8260B
	120	(52 - 150)	2.6	(0-19)	SW846 8260B
Trichloroethene	113	(78 - 121)			SW846 8260B
	102	(78 - 121)	10	(0-11)	SW846 8260B
Vinyl chloride	109	(10 - 251)			SW846 8260B
	105	(10 - 251)	3.6	(0-24)	SW846 8260B
Xylenes (total)	111	(83 - 129)			SW846 8260B
	104	(83 - 129)	6.5	(0-10)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	114	(70 - 135)
	116	(70 - 135)
1,2-Dichloroethane-d4	118 *	(75 - 117)
	118 *	(75 - 117)
Toluene-d8	104	(86 - 122)
	102	(86 - 122)
Bromofluorobenzene	94	(60 - 137)
	92	(60 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

* Surrogate recovery is outside stated control limits.

a Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 Work Order #...: CWV8T111-MS Matrix.....: SOLID
MS Lot-Sample #: A9F140142-015 CWV8T112-MSD
Date Sampled...: 06/11/99 Date Received..: 06/12/99
Prep Date.....: 06/17/99 Analysis Date..: 06/17/99
Prep Batch #...: 9168297
Dilution Factor: 1 % Moisture.....: 20

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acetone	108	(80 - 120)			SW846 8260B
	124 a	(80 - 120)	14	(0-18)	SW846 8260B
Benzene	90	(84 - 121)			SW846 8260B
	94	(84 - 121)	3.7	(0-10)	SW846 8260B
Bromodichloromethane	93	(35 - 155)			SW846 8260B
	96	(35 - 155)	3.4	(0-21)	SW846 8260B
Bromoform	98	(45 - 169)			SW846 8260B
	102	(45 - 169)	4.6	(0-22)	SW846 8260B
Bromomethane	65	(10 - 242)			SW846 8260B
	69	(10 - 242)	5.3	(0-11)	SW846 8260B
2-Butanone	94	(85 - 119)			SW846 8260B
	112 p	(85 - 119)	18	(0-17)	SW846 8260B
Carbon disulfide	82	(81 - 125)			SW846 8260B
	88	(81 - 125)	7.2	(0-9.0)	SW846 8260B
Carbon tetrachloride	96	(70 - 140)			SW846 8260B
	97	(70 - 140)	1.1	(0-18)	SW846 8260B
Chlorobenzene	90	(76 - 122)			SW846 8260B
	92	(76 - 122)	2.9	(0-11)	SW846 8260B
Dibromochloromethane	93	(53 - 149)			SW846 8260B
	96	(53 - 149)	3.7	(0-16)	SW846 8260B
Chloroethane	84	(82 - 114)			SW846 8260B
	88	(82 - 114)	4.6	(0-11)	SW846 8260B
Chloroform	94	(51 - 138)			SW846 8260B
	97	(51 - 138)	3.7	(0-15)	SW846 8260B
Chloromethane	63	(10 - 273)			SW846 8260B
	65	(10 - 273)	4.3	(0-18)	SW846 8260B
1,1-Dichloroethane	90	(33 - 137)			SW846 8260B
	94	(33 - 137)	5.2	(0-14)	SW846 8260B
1,2-Dichloroethane	98	(49 - 155)			SW846 8260B
	99	(49 - 155)	1.3	(0-16)	SW846 8260B
1,1-Dichloroethene	86	(75 - 131)			SW846 8260B
	91	(75 - 131)	5.5	(0-17)	SW846 8260B
cis-1,2-Dichloroethene	100	(50 - 150)			SW846 8260B
	105	(50 - 150)	4.5	(0-50)	SW846 8260B
trans-1,2-Dichloroethene	81	(54 - 156)			SW846 8260B
	86	(54 - 156)	6.8	(0-10)	SW846 8260B
1,2-Dichloropropane	89	(10 - 210)			SW846 8260B
	94	(10 - 210)	5.3	(0-13)	SW846 8260B
s-1,3-Dichloropropene	88	(10 - 227)			SW846 8260B
	91	(10 - 227)	2.8	(0-14)	SW846 8260B

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: A9F140142 **Work Order #...:** CWV8T111-MS **Matrix.....:** SOLID
MS Lot-Sample #: A9F140142-015 CWV8T112-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
trans-1,3-Dichloropropene	89	(17 - 183)			SW846 8260B
	93	(17 - 183)	5.1	(0-14)	SW846 8260B
Ethylbenzene	90	(37 - 162)			SW846 8260B
	89	(37 - 162)	0.82	(0-14)	SW846 8260B
2-Hexanone	107	(87 - 129)			SW846 8260B
	126	(87 - 129)	16	(0-17)	SW846 8260B
Methylene chloride	75	(10 - 221)			SW846 8260B
	81	(10 - 221)	6.2	(0-22)	SW846 8260B
4-Methyl-2-pentanone	99	(90 - 125)			SW846 8260B
	117 p	(90 - 125)	17	(0-12)	SW846 8260B
Styrene	85	(79 - 100)			SW846 8260B
	88	(79 - 100)	2.6	(0-10)	SW846 8260B
1,1,2,2-Tetrachloroethane	94	(46 - 157)			SW846 8260B
	104	(46 - 157)	11	(0-24)	SW846 8260B
Tetrachloroethene	91	(64 - 148)			SW846 8260B
	92	(64 - 148)	0.70	(0-10)	SW846 8260B
Toluene	89	(79 - 129)			SW846 8260B
	92	(79 - 129)	3.5	(0-10)	SW846 8260B
1,1,1-Trichloroethane	94	(52 - 162)			SW846 8260B
	97	(52 - 162)	2.9	(0-12)	SW846 8260B
1,1,2-Trichloroethane	93	(52 - 150)			SW846 8260B
	98	(52 - 150)	4.7	(0-19)	SW846 8260B
Trichloroethene	90	(78 - 121)			SW846 8260B
	92	(78 - 121)	2.6	(0-11)	SW846 8260B
Vinyl chloride	79	(10 - 251)			SW846 8260B
	81	(10 - 251)	1.6	(0-24)	SW846 8260B
Xylenes (total)	89	(83 - 129)			SW846 8260B
	92	(83 - 129)	3.4	(0-10)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	106	(70 - 135)
	99	(70 - 135)
1,2-Dichloroethane-d4	108	(75 - 117)
	102	(75 - 117)
Toluene-d8	101	(86 - 122)
	94	(86 - 122)
Bromofluorobenzene	97	(60 - 137)
	90	(60 - 137)

NOTE(S):

lculations are performed before rounding to avoid round-off errors in calculated results.

d print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

p Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVA210U-MS **Matrix.....:** WATER
MS Lot-Sample #: A9F140142-043 CWVA210V-MSD
Date Sampled...: 06/11/99 **Date Received..:** 06/12/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/18/99
Prep Batch #...: 9166106
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	81	(47 - 145)			SW846 8270C
	76	(47 - 145)	6.9	(0-28)	SW846 8270C
Acenaphthylene	77	(30 - 122)			SW846 8270C
	72	(30 - 122)	6.4	(0-19)	SW846 8270C
Anthracene	84	(18 - 133)			SW846 8270C
	79	(18 - 133)	6.6	(0-28)	SW846 8270C
Benzo(a)anthracene	92	(17 - 130)			SW846 8270C
	88	(17 - 130)	4.5	(0-31)	SW846 8270C
Benzo(b)fluoranthene	84	(29 - 108)			SW846 8270C
	78	(29 - 108)	8.1	(0-22)	SW846 8270C
Benzo(k)fluoranthene	86	(19 - 116)			SW846 8270C
	84	(19 - 116)	1.5	(0-40)	SW846 8270C
Benzo(ghi)perylene	97	(10 - 128)			SW846 8270C
	90	(10 - 128)	6.9	(0-51)	SW846 8270C
Benzo(a)pyrene	81	(13 - 126)			SW846 8270C
	76	(13 - 126)	6.0	(0-27)	SW846 8270C
bis(2-Chloroethoxy) methane	72	(29 - 130)			SW846 8270C
	67	(29 - 130)	6.7	(0-25)	SW846 8270C
bis(2-Chloroethyl)-ether	68	(29 - 103)			SW846 8270C
	64	(29 - 103)	5.5	(0-30)	SW846 8270C
bis(2-Ethylhexyl) phthalate	92	(12 - 145)			SW846 8270C
	87	(12 - 145)	5.0	(0-35)	SW846 8270C
4-Bromophenyl phenyl ether	92	(32 - 128)			SW846 8270C
	88	(32 - 128)	4.1	(0-33)	SW846 8270C
Butyl benzyl phthalate	85	(10 - 152)			SW846 8270C
	80	(10 - 152)	6.0	(0-38)	SW846 8270C
4-Chloroaniline	47	(43 - 91)			SW846 8270C
	41 a	(43 - 91)	15	(0-17)	SW846 8270C
4-Chloro-3-methylphenol	78	(22 - 147)			SW846 8270C
	71	(22 - 147)	8.8	(0-37)	SW846 8270C
2-Chloronaphthalene	80	(27 - 125)			SW846 8270C
	76	(27 - 125)	6.2	(0-21)	SW846 8270C

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVA210U-MS **Matrix.....:** WATER
MS Lot-Sample #: A9F140142-043 CWVA210V-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2-Chlorophenol	65	(23 - 134)			SW846 8270C
	63	(23 - 134)	4.1	(0-29)	SW846 8270C
4-Chlorophenyl phenyl ether	91	(33 - 131)			SW846 8270C
	86	(33 - 131)	5.8	(0-37)	SW846 8270C
Chrysene	89	(20 - 138)			SW846 8270C
	85	(20 - 138)	3.8	(0-36)	SW846 8270C
Dibenz(a,h)anthracene	92	(18 - 116)			SW846 8270C
	88	(18 - 116)	4.7	(0-37)	SW846 8270C
Dibenzofuran	83 a	(85 - 117)			SW846 8270C
	78 a	(85 - 117)	6.4	(0-11)	SW846 8270C
Di-n-butyl phthalate	87	(24 - 126)			SW846 8270C
	83	(24 - 126)	5.4	(0-25)	SW846 8270C
1,2-Dichlorobenzene	65	(28 - 103)			SW846 8270C
	62	(28 - 103)	4.6	(0-20)	SW846 8270C
,3-Dichlorobenzene	62	(31 - 97)			SW846 8270C
	59	(31 - 97)	4.2	(0-20)	SW846 8270C
1,4-Dichlorobenzene	63	(20 - 124)			SW846 8270C
	60	(20 - 124)	4.4	(0-32)	SW846 8270C
3,3'-Dichlorobenzidine	48	(10 - 139)			SW846 8270C
	42	(10 - 139)	13	(0-40)	SW846 8270C
2,4-Dichlorophenol	72	(34 - 100)			SW846 8270C
	67	(34 - 100)	6.6	(0-36)	SW846 8270C
Diethyl phthalate	87	(27 - 110)			SW846 8270C
	82	(27 - 110)	6.2	(0-26)	SW846 8270C
2,4-Dimethylphenol	34	(11 - 78)			SW846 8270C
	30	(11 - 78)	13	(0-24)	SW846 8270C
Dimethyl phthalate	86	(10 - 101)			SW846 8270C
	80	(10 - 101)	6.8	(0-28)	SW846 8270C
Di-n-octyl phthalate	86	(31 - 110)			SW846 8270C
	83	(31 - 110)	3.8	(0-31)	SW846 8270C
4,6-Dinitro-2-methylphenol	108	(10 - 181)			SW846 8270C
	103	(10 - 181)	4.9	(0-35)	SW846 8270C
2,4-Dinitrophenol	100	(10 - 114)			SW846 8270C
	99	(10 - 114)	1.1	(0-34)	SW846 8270C
2,4-Dinitrotoluene	97	(39 - 139)			SW846 8270C
	92	(39 - 139)	5.3	(0-22)	SW846 8270C
2,6-Dinitrotoluene	97	(23 - 130)			SW846 8270C
	91	(23 - 130)	6.2	(0-24)	SW846 8270C
uoranthene	90	(26 - 123)			SW846 8270C
	84	(26 - 123)	7.0	(0-30)	SW846 8270C

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVA210U-MS **Matrix.....:** WATER
MS Lot-Sample #: A9F140142-043 CWVA210V-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Fluorene	87	(32 - 122)			SW846 8270C
	82	(32 - 122)	6.2	(0-28)	SW846 8270C
Hexachlorobenzene	93	(34 - 129)			SW846 8270C
	87	(34 - 129)	6.0	(0-36)	SW846 8270C
Hexachlorobutadiene	72	(31 - 109)			SW846 8270C
	64	(31 - 109)	11	(0-21)	SW846 8270C
Hexachlorocyclopenta-diene	0.0 a	(16 - 88)			SW846 8270C
	0.0 a	(16 - 88)	0.0	(0-31)	SW846 8270C
Hexachloroethane	59	(32 - 95)			SW846 8270C
	56	(32 - 95)	5.2	(0-12)	SW846 8270C
Indeno(1,2,3-cd)pyrene	95	(13 - 127)			SW846 8270C
	90	(13 - 127)	5.1	(0-41)	SW846 8270C
Isophorone	71	(19 - 133)			SW846 8270C
	65	(19 - 133)	8.8	(0-15)	SW846 8270C
Methylnaphthalene	76	(43 - 82)			SW846 8270C
	69	(43 - 82)	8.5	(0-15)	SW846 8270C
2-Methylphenol	60	(20 - 95)			SW846 8270C
	56	(20 - 95)	7.0	(0-26)	SW846 8270C
Naphthalene	71	(32 - 111)			SW846 8270C
	66	(32 - 111)	7.1	(0-23)	SW846 8270C
2-Nitroaniline	83	(52 - 170)			SW846 8270C
	77	(52 - 170)	7.0	(0-39)	SW846 8270C
3-Nitroaniline	67	(55 - 172)			SW846 8270C
	64	(55 - 172)	4.7	(0-39)	SW846 8270C
4-Nitroaniline	55 a	(74 - 195)			SW846 8270C
	51 a	(74 - 195)	6.7	(0-48)	SW846 8270C
Nitrobenzene	72	(34 - 114)			SW846 8270C
	67	(34 - 114)	6.4	(0-15)	SW846 8270C
2-Nitrophenol	77	(19 - 107)			SW846 8270C
	73	(19 - 107)	6.0	(0-20)	SW846 8270C
4-Nitrophenol	76	(10 - 132)			SW846 8270C
	74	(10 - 132)	4.0	(0-47)	SW846 8270C
N-Nitrosodi-n-propyl-amine	65	(10 - 230)			SW846 8270C
	60	(10 - 230)	9.2	(0-55)	SW846 8270C
N-Nitrosodiphenylamine	80	(37 - 134)			SW846 8270C
	75	(37 - 134)	6.1	(0-32)	SW846 8270C
Pentachlorophenol	82	(14 - 176)			SW846 8270C
	76	(14 - 176)	8.0	(0-49)	SW846 8270C
enanthrene	89	(30 - 120)			SW846 8270C
	84	(30 - 120)	6.5	(0-27)	SW846 8270C

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWVA210U-MS **Matrix.....:** WATER
MS Lot-Sample #: A9F140142-043 CWVA210V-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Phenol	**64**	**(10 - 112)**			**SW846 8270C**
	61	**(10 - 112)**	**4.0**	**(0-23)**	**SW846 8270C**
Pyrene	**85**	**(52 - 115)**			**SW846 8270C**
	81	**(52 - 115)**	**4.3**	**(0-25)**	**SW846 8270C**
1,2,4-Trichlorobenzene	**73**	**(44 - 142)**			**SW846 8270C**
	67	**(44 - 142)**	**8.0**	**(0-28)**	**SW846 8270C**
2,4,5-Trichlorophenol	**82**	**(20 - 159)**			**SW846 8270C**
	77	**(20 - 159)**	**6.4**	**(0-33)**	**SW846 8270C**
2,4,6-Trichlorophenol	**79**	**(18 - 118)**			**SW846 8270C**
	75	**(18 - 118)**	**5.0**	**(0-36)**	**SW846 8270C**
Carbazole	**67**	**(50 - 150)**			**SW846 8270C**
	63	**(50 - 150)**	**5.1**	**(0-50)**	**SW846 8270C**
4-Methylphenol	**59**	**(10 - 85)**			**SW846 8270C**
	55	**(10 - 85)**	**7.1**	**(0-32)**	**SW846 8270C**
2,2'-oxybis(1-Chloro-propane)	**79**	**(19 - 150)**			**SW846 8270C**
	75	**(19 - 150)**	**5.6**	**(0-26)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	72	(40 - 114)
	68	(40 - 114)
Terphenyl-d14	88	(33 - 141)
	85	(33 - 141)
2-Fluorobiphenyl	76	(45 - 118)
	72	(45 - 118)
2-Fluorophenol	60	(21 - 100)
	59	(21 - 100)
Phenol-d5	64	(17 - 101)
	62	(17 - 101)
2,4,6-Tribromophenol	79	(16 - 129)
	77	(16 - 129)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWV8A10D-MS **Matrix.....:** SOLID
MS Lot-Sample #: A9F140142-003 CWV8A10E-MSD
Date Sampled...: 06/09/99 19:20 **Date Received..:** 06/11/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/18/99
Prep Batch #...: 9166107
Dilution Factor: 1 **% Moisture.....:** 17

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	85	(47 - 145)			SW846 8270C
	82	(47 - 145)	3.4	(0-28)	SW846 8270C
Acenaphthylene	85	(33 - 145)			SW846 8270C
	82	(33 - 145)	2.7	(0-21)	SW846 8270C
Anthracene	79	(27 - 133)			SW846 8270C
	80	(27 - 133)	0.45	(0-35)	SW846 8270C
Benzo(a)anthracene	91	(33 - 143)			SW846 8270C
	88	(33 - 143)	2.4	(0-39)	SW846 8270C
Benzo(b)fluoranthene	84	(24 - 159)			SW846 8270C
	80	(24 - 159)	4.6	(0-25)	SW846 8270C
Benzo(k)fluoranthene	83	(22 - 133)			SW846 8270C
	80	(22 - 133)	4.2	(0-54)	SW846 8270C
enzo(ghi)perylene	94	(10 - 219)			SW846 8270C
	92	(10 - 219)	2.2	(0-65)	SW846 8270C
Benzo(a)pyrene	84	(17 - 163)			SW846 8270C
	81	(17 - 163)	4.2	(0-35)	SW846 8270C
bis(2-Chloroethoxy) methane	81	(33 - 184)			SW846 8270C
	77	(33 - 184)	5.5	(0-46)	SW846 8270C
bis(2-Chloroethyl)-ether	73	(12 - 158)			SW846 8270C
	69	(12 - 158)	6.5	(0-54)	SW846 8270C
bis(2-Ethylhexyl) phthalate	100	(10 - 158)			SW846 8270C
	82	(10 - 158)	19	(0-35)	SW846 8270C
4-Bromophenyl phenyl ether	91	(53 - 127)			SW846 8270C
	89	(53 - 127)	2.6	(0-35)	SW846 8270C
Butyl benzyl phthalate	83	(10 - 122)			SW846 8270C
	80	(10 - 122)	4.2	(0-38)	SW846 8270C
4-Chloroaniline	46	(43 - 91)			SW846 8270C
	51	(43 - 91)	9.9	(0-17)	SW846 8270C
4-Chloro-3-methylphenol	84	(22 - 147)			SW846 8270C
	78	(22 - 147)	7.0	(0-37)	SW846 8270C
Chloronaphthalene	88	(60 - 118)			SW846 8270C
	86	(60 - 118)	3.1	(0-23)	SW846 8270C

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWV8A10D-MS **Matrix.....:** SOLID
MS Lot-Sample #: A9F140142-003 CWV8A10E-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2-Chlorophenol	75	(23 - 134)			SW846 8270C
	71	(23 - 134)	6.4	(0-29)	SW846 8270C
4-Chlorophenyl phenyl ether	94	(25 - 158)			SW846 8270C
	91	(25 - 158)	2.6	(0-43)	SW846 8270C
Chrysene	82	(17 - 168)			SW846 8270C
	83	(17 - 168)	0.76	(0-30)	SW846 8270C
Dibenz(a,h)anthracene	92	(10 - 227)			SW846 8270C
	89	(10 - 227)	3.1	(0-48)	SW846 8270C
Dibenzofuran	86	(85 - 117)			SW846 8270C
	84 a	(85 - 117)	2.6	(0-11)	SW846 8270C
Di-n-butyl phthalate	86	(10 - 118)			SW846 8270C
	83	(10 - 118)	4.4	(0-25)	SW846 8270C
1,2-Dichlorobenzene	70	(32 - 129)			SW846 8270C
	69	(32 - 129)	1.1	(0-43)	SW846 8270C
3-Dichlorobenzene	67	(10 - 172)			SW846 8270C
	66	(10 - 172)	1.6	(0-43)	SW846 8270C
1,4-Dichlorobenzene	68	(20 - 124)			SW846 8270C
	68	(20 - 124)	0.28	(0-32)	SW846 8270C
3,3'-Dichlorobenzidine	42	(10 - 262)			SW846 8270C
	45	(10 - 262)	7.0	(0-45)	SW846 8270C
2,4-Dichlorophenol	84	(39 - 135)			SW846 8270C
	79	(39 - 135)	7.1	(0-32)	SW846 8270C
Diethyl phthalate	87	(10 - 114)			SW846 8270C
	83	(10 - 114)	4.7	(0-43)	SW846 8270C
2,4-Dimethylphenol	74	(32 - 119)			SW846 8270C
	70	(32 - 119)	4.8	(0-30)	SW846 8270C
Dimethyl phthalate	86	(10 - 112)			SW846 8270C
	83	(10 - 112)	3.9	(0-44)	SW846 8270C
Di-n-octyl phthalate	88	(10 - 146)			SW846 8270C
	79	(10 - 146)	11	(0-31)	SW846 8270C
4,6-Dinitro-2-methylphenol	116	(10 - 181)			SW846 8270C
	106	(10 - 181)	9.2	(0-35)	SW846 8270C
2,4-Dinitrophenol	123	(10 - 191)			SW846 8270C
	111	(10 - 191)	10	(0-34)	SW846 8270C
2,4-Dinitrotoluene	100	(39 - 139)			SW846 8270C
	94	(39 - 139)	5.7	(0-22)	SW846 8270C
2,6-Dinitrotoluene	103	(50 - 151)			SW846 8270C
	98	(50 - 151)	4.9	(0-41)	SW846 8270C
uoranthene	89	(26 - 137)			SW846 8270C
	86	(26 - 137)	3.7	(0-27)	SW846 8270C

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 Work Order #...: CWV8A10D-MS Matrix.....: SOLID
MS Lot-Sample #: A9F140142-003 CWV8A10E-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Fluorene	88	(59 - 121)			SW846 8270C
	86	(59 - 121)	2.7	(0-30)	SW846 8270C
Hexachlorobenzene	90	(10 - 152)			SW846 8270C
	89	(10 - 152)	1.9	(0-37)	SW846 8270C
Hexachlorobutadiene	79	(24 - 116)			SW846 8270C
	77	(24 - 116)	2.8	(0-33)	SW846 8270C
Hexachlorocyclopenta-diene	29	(2.0- 55)			SW846 8270C
	30	(2.0- 55)	0.47	(0-31)	SW846 8270C
Hexachloroethane	66	(40 - 113)			SW846 8270C
	66	(40 - 113)	1.1	(0-25)	SW846 8270C
Indeno(1,2,3-cd)pyrene	87	(10 - 171)			SW846 8270C
	87	(10 - 171)	0.78	(0-50)	SW846 8270C
Isophorone	73	(21 - 196)			SW846 8270C
	69	(21 - 196)	5.8	(0-30)	SW846 8270C
-Methylnaphthalene	83	(15 - 111)			SW846 8270C
	79	(15 - 111)	4.2	(0-31)	SW846 8270C
2-Methylphenol	75	(10 - 103)			SW846 8270C
	70	(10 - 103)	5.8	(0-32)	SW846 8270C
Naphthalene	76	(21 - 133)			SW846 8270C
	74	(21 - 133)	3.4	(0-21)	SW846 8270C
2-Nitroaniline	87	(32 - 165)			SW846 8270C
	85	(32 - 165)	2.6	(0-42)	SW846 8270C
3-Nitroaniline	77	(31 - 177)			SW846 8270C
	73	(31 - 177)	5.5	(0-48)	SW846 8270C
4-Nitroaniline	72	(38 - 229)			SW846 8270C
	71	(38 - 229)	1.8	(0-47)	SW846 8270C
Nitrobenzene	76	(35 - 180)			SW846 8270C
	74	(35 - 180)	3.7	(0-31)	SW846 8270C
2-Nitrophenol	87	(29 - 182)			SW846 8270C
	83	(29 - 182)	4.7	(0-29)	SW846 8270C
4-Nitrophenol	74	(10 - 132)			SW846 8270C
	68	(10 - 132)	7.9	(0-47)	SW846 8270C
N-Nitrosodi-n-propyl-amine	73	(10 - 230)			SW846 8270C
	68	(10 - 230)	6.7	(0-55)	SW846 8270C
N-Nitrosodiphenylamine	88	(10 - 230)			SW846 8270C
	86	(10 - 230)	2.2	(0-32)	SW846 8270C
Pentachlorophenol	44	(14 - 176)			SW846 8270C
	36	(14 - 176)	21	(0-49)	SW846 8270C
henanthrene	78	(54 - 120)			SW846 8270C
	82	(54 - 120)	4.5	(0-35)	SW846 8270C

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWV8A10D-MS **Matrix.....:** SOLID
MS Lot-Sample #: A9F140142-003 CWV8A10E-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Phenol	**75**	**(10 - 112)**			**SW846 8270C**
	70	**(10 - 112)**	**7.5**	**(0-23)**	**SW846 8270C**
Pyrene	**84**	**(52 - 115)**			**SW846 8270C**
	80	**(52 - 115)**	**4.6**	**(0-25)**	**SW846 8270C**
1,2,4-Trichlorobenzene	**81**	**(44 - 142)**			**SW846 8270C**
	78	**(44 - 142)**	**4.1**	**(0-28)**	**SW846 8270C**
2,4,5-Trichlorophenol	**71**	**(13 - 136)**			**SW846 8270C**
	66	**(13 - 136)**	**7.6**	**(0-41)**	**SW846 8270C**
2,4,6-Trichlorophenol	**70**	**(37 - 144)**			**SW846 8270C**
	60	**(37 - 144)**	**16**	**(0-30)**	**SW846 8270C**
Carbazole	**85**	**(50 - 150)**			**SW846 8270C**
	85	**(50 - 150)**	**0.11**	**(0-50)**	**SW846 8270C**
4-Methylphenol	**73**	**(10 - 103)**			**SW846 8270C**
	69	**(10 - 103)**	**5.6**	**(0-32)**	**SW846 8270C**
2,2'-oxybis(1-Chloro-propane)	**84**	**(36 - 166)**			**SW846 8270C**
	81	**(36 - 166)**	**3.8**	**(0-26)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	81	(23 - 120)
	77	(23 - 120)
Terphenyl-d14	87	(18 - 137)
	83	(18 - 137)
2-Fluorobiphenyl	84	(30 - 115)
	81	(30 - 115)
2-Fluorophenol	69	(30 - 115)
	65	(30 - 115)
Phenol-d5	78	(24 - 113)
	71	(24 - 113)
2,4,6-Tribromophenol	61	(19 - 122)
	50	(19 - 122)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWV8E10G-MS **Matrix.....:** SOLID
MS Lot-Sample #: A9F140142-005 CWV8E10H-MSD
Date Sampled...: 06/10/99 10:00 **Date Received..:** 06/11/99
Prep Date.....: 06/21/99 **Analysis Date..:** 06/25/99
Prep Batch #...: 9172112
Dilution Factor: 1 **% Moisture.....:** 11

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Acenaphthene	68	(47 - 145)			SW846 8270C
	74	(47 - 145)	7.4	(0-28)	SW846 8270C
Acenaphthylene	68	(33 - 145)			SW846 8270C
	73	(33 - 145)	6.1	(0-21)	SW846 8270C
Anthracene	70	(27 - 133)			SW846 8270C
	75	(27 - 133)	7.1	(0-35)	SW846 8270C
Benzo(a)anthracene	66	(33 - 143)			SW846 8270C
	70	(33 - 143)	6.2	(0-39)	SW846 8270C
Benzo(b)fluoranthene	65	(24 - 159)			SW846 8270C
	70	(24 - 159)	7.5	(0-25)	SW846 8270C
Benzo(k)fluoranthene	68	(22 - 133)			SW846 8270C
	73	(22 - 133)	6.5	(0-54)	SW846 8270C
Benzo(ghi)perylene	68	(10 - 219)			SW846 8270C
	69	(10 - 219)	1.8	(0-65)	SW846 8270C
Benzo(a)pyrene	65	(17 - 163)			SW846 8270C
	70	(17 - 163)	6.8	(0-35)	SW846 8270C
bis(2-Chloroethoxy) methane	67	(33 - 184)			SW846 8270C
	73	(33 - 184)	8.9	(0-46)	SW846 8270C
bis(2-Chloroethyl)-ether	65	(12 - 158)			SW846 8270C
	72	(12 - 158)	9.5	(0-54)	SW846 8270C
bis(2-Ethylhexyl) phthalate	62	(10 - 158)			SW846 8270C
	67	(10 - 158)	7.0	(0-35)	SW846 8270C
4-Bromophenyl phenyl ether	74	(53 - 127)			SW846 8270C
	80	(53 - 127)	7.8	(0-35)	SW846 8270C
Butyl benzyl phthalate	61	(10 - 122)			SW846 8270C
	65	(10 - 122)	6.5	(0-38)	SW846 8270C
4-Chloroaniline	33 a	(43 - 91)			SW846 8270C
	39 a	(43 - 91)	16	(0-17)	SW846 8270C
4-Chloro-3-methylphenol	64	(22 - 147)			SW846 8270C
	67	(22 - 147)	3.1	(0-37)	SW846 8270C
2-Chloronaphthalene	71	(60 - 118)			SW846 8270C
	78	(60 - 118)	8.8	(0-23)	SW846 8270C

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWV8E10G-MS **Matrix.....:** SOLID
MS Lot-Sample #: A9F140142-005 CWV8E10H-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
2-Chlorophenol	65	(23 - 134)			SW846 8270C
	73	(23 - 134)	11	(0-29)	SW846 8270C
4-Chlorophenyl phenyl ether	73	(25 - 158)			SW846 8270C
	77	(25 - 158)	5.4	(0-43)	SW846 8270C
Chrysene	70	(17 - 168)			SW846 8270C
	73	(17 - 168)	4.4	(0-30)	SW846 8270C
Dibenz(a,h)anthracene	73	(10 - 227)			SW846 8270C
	76	(10 - 227)	4.3	(0-48)	SW846 8270C
Dibenzofuran	70 a	(85 - 117)			SW846 8270C
	76 a	(85 - 117)	7.5	(0-11)	SW846 8270C
Di-n-butyl phthalate	69	(10 - 118)			SW846 8270C
	72	(10 - 118)	5.0	(0-25)	SW846 8270C
1,2-Dichlorobenzene	67	(32 - 129)			SW846 8270C
	74	(32 - 129)	10	(0-43)	SW846 8270C
3-Dichlorobenzene	64	(10 - 172)			SW846 8270C
	70	(10 - 172)	9.1	(0-43)	SW846 8270C
1,4-Dichlorobenzene	64	(20 - 124)			SW846 8270C
	70	(20 - 124)	8.8	(0-32)	SW846 8270C
3,3'-Dichlorobenzidine	32	(10 - 262)			SW846 8270C
	36	(10 - 262)	11	(0-45)	SW846 8270C
2,4-Dichlorophenol	69	(39 - 135)			SW846 8270C
	72	(39 - 135)	3.9	(0-32)	SW846 8270C
Diethyl phthalate	68	(10 - 114)			SW846 8270C
	72	(10 - 114)	5.5	(0-43)	SW846 8270C
2,4-Dimethylphenol	58	(32 - 119)			SW846 8270C
	61	(32 - 119)	5.5	(0-30)	SW846 8270C
Dimethyl phthalate	71	(10 - 112)			SW846 8270C
	67	(10 - 112)	4.8	(0-44)	SW846 8270C
Di-n-octyl phthalate	58	(10 - 146)			SW846 8270C
	65	(10 - 146)	11	(0-31)	SW846 8270C
4,6-Dinitro-2-methylphenol	52	(10 - 181)			SW846 8270C
	52	(10 - 181)	0.33	(0-35)	SW846 8270C
2,4-Dinitrophenol	37	(10 - 191)			SW846 8270C
	28	(10 - 191)	28	(0-34)	SW846 8270C
2,4-Dinitrotoluene	83	(39 - 139)			SW846 8270C
	82	(39 - 139)	1.4	(0-22)	SW846 8270C
2,6-Dinitrotoluene	81	(50 - 151)			SW846 8270C
	81	(50 - 151)	0.74	(0-41)	SW846 8270C
uoranthene	74	(26 - 137)			SW846 8270C
	77	(26 - 137)	4.8	(0-27)	SW846 8270C

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 Work Order #...: CWV8E10G-MS Matrix.....: SOLID
MS Lot-Sample #: A9F140142-005 CWV8E10H-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Fluorene	71	(59 - 121)			SW846 8270C
	76	(59 - 121)	6.5	(0-30)	SW846 8270C
Hexachlorobenzene	79	(10 - 152)			SW846 8270C
	84	(10 - 152)	7.3	(0-37)	SW846 8270C
Hexachlorobutadiene	65	(24 - 116)			SW846 8270C
	71	(24 - 116)	8.7	(0-33)	SW846 8270C
Hexachlorocyclopenta-diene	20	(2.0- 55)			SW846 8270C
	24	(2.0- 55)	19	(0-31)	SW846 8270C
Hexachloroethane	58	(40 - 113)			SW846 8270C
	64	(40 - 113)	8.9	(0-25)	SW846 8270C
Indeno(1,2,3-cd)pyrene	68	(10 - 171)			SW846 8270C
	83	(10 - 171)	19	(0-50)	SW846 8270C
Isophorone	60	(21 - 196)			SW846 8270C
	65	(21 - 196)	8.0	(0-30)	SW846 8270C
Methylnaphthalene	67	(15 - 111)			SW846 8270C
	72	(15 - 111)	7.2	(0-31)	SW846 8270C
2-Methylphenol	62	(10 - 103)			SW846 8270C
	68	(10 - 103)	9.9	(0-32)	SW846 8270C
Naphthalene	66	(21 - 133)			SW846 8270C
	72	(21 - 133)	8.7	(0-21)	SW846 8270C
2-Nitroaniline	64	(32 - 165)			SW846 8270C
	67	(32 - 165)	4.3	(0-42)	SW846 8270C
3-Nitroaniline	55	(31 - 177)			SW846 8270C
	59	(31 - 177)	7.2	(0-48)	SW846 8270C
4-Nitroaniline	49	(38 - 229)			SW846 8270C
	42	(38 - 229)	14	(0-47)	SW846 8270C
Nitrobenzene	61	(35 - 180)			SW846 8270C
	67	(35 - 180)	9.4	(0-31)	SW846 8270C
2-Nitrophenol	70	(29 - 182)			SW846 8270C
	76	(29 - 182)	8.2	(0-29)	SW846 8270C
4-Nitrophenol	35	(10 - 132)			SW846 8270C
	34	(10 - 132)	2.6	(0-47)	SW846 8270C
N-Nitrosodi-n-propyl-amine	58	(10 - 230)			SW846 8270C
	65	(10 - 230)	11	(0-55)	SW846 8270C
N-Nitrosodiphenylamine	72	(10 - 230)			SW846 8270C
	76	(10 - 230)	4.1	(0-32)	SW846 8270C
Pentachlorophenol	8.3 a	(14 - 176)			SW846 8270C
	9.0 a	(14 - 176)	7.6	(0-49)	SW846 8270C
ıenanthrene	73	(54 - 120)			SW846 8270C
	77	(54 - 120)	4.9	(0-35)	SW846 8270C

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MATRIX SPIKE SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWV8E10G-MS **Matrix.....:** SOLID
MS Lot-Sample #: A9F140142-005 CWV8E10H-MSD

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Phenol	**63**	**(10 - 112)**			**SW846 8270C**
	71	**(10 - 112)**	**12**	**(0-23)**	**SW846 8270C**
Pyrene	**66**	**(52 - 115)**			**SW846 8270C**
	70	**(52 - 115)**	**6.5**	**(0-25)**	**SW846 8270C**
1,2,4-Trichlorobenzene	**69**	**(44 - 142)**			**SW846 8270C**
	75	**(44 - 142)**	**8.6**	**(0-28)**	**SW846 8270C**
2,4,5-Trichlorophenol	**70**	**(13 - 136)**			**SW846 8270C**
	64	**(13 - 136)**	**8.8**	**(0-41)**	**SW846 8270C**
2,4,6-Trichlorophenol	**57**	**(37 - 144)**			**SW846 8270C**
	43	**(37 - 144)**	**29**	**(0-30)**	**SW846 8270C**
Carbazole	**71**	**(50 - 150)**			**SW846 8270C**
	74	**(50 - 150)**	**4.0**	**(0-50)**	**SW846 8270C**
4-Methylphenol	**62**	**(10 - 103)**			**SW846 8270C**
	69	**(10 - 103)**	**11**	**(0-32)**	**SW846 8270C**
2,2'-oxybis(1-Chloro-propane)	**85**	**(36 - 166)**			**SW846 8270C**
	94	**(36 - 166)**	**10**	**(0-26)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Nitrobenzene-d5	59	(23 - 120)
	65	(23 - 120)
Terphenyl-d14	74	(18 - 137)
	78	(18 - 137)
2-Fluorobiphenyl	70	(30 - 115)
	76	(30 - 115)
2-Fluorophenol	61	(30 - 115)
	67	(30 - 115)
Phenol-d5	61	(24 - 113)
	69	(24 - 113)
2,4,6-Tribromophenol	56	(19 - 122)
	40	(19 - 122)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

a Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: A9F140142 Work Order #...: CWV8910D-MS Matrix.....: SOLID
MS Lot-Sample #: A9F140142-002 CWV8910E-MSD
Date Sampled...: 06/09/99 19:10 Date Received..: 06/11/99
Prep Date.....: 06/18/99 Analysis Date..: 06/23/99
Prep Batch #...: 9169280
Dilution Factor: 1 % Moisture.....: 22

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
HMX	**107**	**(72 - 122)**			**SW846 8330**
	103	**(72 - 122)**	**3.5**	**(0-17)**	**SW846 8330**
RDX	**102**	**(71 - 121)**			**SW846 8330**
	98	**(71 - 121)**	**4.5**	**(0-16)**	**SW846 8330**
1,3,5-Trinitrobenzene	**103**	**(81 - 120)**			**SW846 8330**
	99	**(81 - 120)**	**3.4**	**(0-15)**	**SW846 8330**
1,3-Dinitrobenzene	**105**	**(82 - 117)**			**SW846 8330**
	102	**(82 - 117)**	**3.4**	**(0-15)**	**SW846 8330**
Tetryl	**93**	**(51 - 124)**			**SW846 8330**
	89	**(51 - 124)**	**5.3**	**(0-20)**	**SW846 8330**
Nitrobenzene	**106**	**(83 - 117)**			**SW846 8330**
	103	**(83 - 117)**	**2.4**	**(0-15)**	**SW846 8330**
2,4,6-Trinitrotoluene	**102**	**(74 - 126)**			**SW846 8330**
	99	**(74 - 126)**	**2.9**	**(0-15)**	**SW846 8330**
4-Amino-2,6-dinitrotoluen	**106**	**(71 - 123)**			**SW846 8330**
	103	**(71 - 123)**	**2.4**	**(0-15)**	**SW846 8330**
2-Amino-4,6-dinitrotoluen	**106**	**(75 - 121)**			**SW846 8330**
	102	**(75 - 121)**	**3.4**	**(0-16)**	**SW846 8330**
2,6-Dinitrotoluene	**107**	**(78 - 125)**			**SW846 8330**
	106	**(78 - 125)**	**1.3**	**(0-15)**	**SW846 8330**
2,4-Dinitrotoluene	**107**	**(81 - 120)**			**SW846 8330**
	105	**(81 - 120)**	**1.9**	**(0-15)**	**SW846 8330**
2-Nitrotoluene	**107**	**(81 - 117)**			**SW846 8330**
	106	**(81 - 117)**	**1.2**	**(0-15)**	**SW846 8330**
4-Nitrotoluene	**108**	**(80 - 117)**			**SW846 8330**
	107	**(80 - 117)**	**1.4**	**(0-15)**	**SW846 8330**
3-Nitrotoluene	**105**	**(80 - 118)**			**SW846 8330**
	101	**(80 - 118)**	**3.2**	**(0-15)**	**SW846 8330**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	106	(76 - 124)
	105	(76 - 124)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

MATRIX SPIKE SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: A9F140142 **Work Order #...:** CWV8T10W-MS **Matrix.....:** SOLID
MS Lot-Sample #: A9F140142-015 CWV8T10X-MSD
Date Sampled...: 06/11/99 **Date Received..:** 06/12/99
Prep Date.....: 06/15/99 **Analysis Date..:** 06/23/99
Prep Batch #...: 9166108
Dilution Factor: 1 **% Moisture.....:** 20

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
Aroclor 1016	**87**	**(44 - 139)**			**SW846 8082**
	70	**(44 - 139)**	**22**	**(0-28)**	**SW846 8082**
Aroclor 1260	**102**	**(44 - 139)**			**SW846 8082**
	90	**(44 - 139)**	**12**	**(0-28)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	97	(10 - 129)
	66	(10 - 129)
Decachlorobiphenyl	105	(10 - 138)
	95	(10 - 138)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:00 **Date Received..:** 06/11/99

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A9F140142-001 **Prep Batch #...:** 9174294							
Aluminum	NC,MSB	(80 - 120)			SW846 6010B	06/24-07/15/99	CWV8811Q
	NC,MSB	(80 - 120)		(0-20)	SW846 6010B	06/24-07/15/99	CWV8811R
		Dilution Factor: 1					
Silver	99	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV8810F
	99	(80 - 120)	0.21	(0-20)	SW846 6010B	06/24-07/16/99	CWV8810G
		Dilution Factor: 1					
Arsenic	88	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV8810H
	83	(80 - 120)	5.8	(0-20)	SW846 6010B	06/24-07/16/99	CWV8810J
		Dilution Factor: 1					
Barium	94	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV8810D
	88	(80 - 120)	6.1	(0-20)	SW846 6010B	06/24-07/16/99	CWV8810E
		Dilution Factor: 1					
eryllium	76 N	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV8811U
	71 N	(80 - 120)	5.9	(0-20)	SW846 6010B	06/24-07/16/99	CWV8811V
		Dilution Factor: 1					
Cadmium	87	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV8810K
	82	(80 - 120)	6.0	(0-20)	SW846 6010B	06/24-07/16/99	CWV8810L
		Dilution Factor: 1					
Calcium	116	(80 - 120)			SW846 6010B	06/24-07/15/99	CWV8811X
	189 N,*	(80 - 120)	30	(0-20)	SW846 6010B	06/24-07/15/99	CWV88120
		Dilution Factor: 1					
Chromium	95	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV8810M
	87	(80 - 120)	6.9	(0-20)	SW846 6010B	06/24-07/16/99	CWV8810N
		Dilution Factor: 1					
Cobalt	87	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV88122
	83	(80 - 120)	5.4	(0-20)	SW846 6010B	06/24-07/16/99	CWV88123
		Dilution Factor: 1					
Lead	88	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV8810P
	83	(80 - 120)	6.3	(0-20)	SW846 6010B	06/24-07/16/99	CWV8810Q
		Dilution Factor: 1					
Antimony	69 N	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV8811J
	66 N	(80 - 120)	5.3	(0-20)	SW846 6010B	06/24-07/16/99	CWV8811K
		Dilution Factor: 1					

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:00 **Date Received..:** 06/11/99

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	95	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV88125
	90	(80 - 120)	4.9	(0-20)	SW846 6010B	06/24-07/16/99	CWV88126
		Dilution Factor: 1					
Iron	NC,MSB	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV88128
	NC,MSB	(80 - 120)		(0-20)	SW846 6010B	06/24-07/16/99	CWV88129
		Dilution Factor: 1					
Mercury	95	(70 - 130)			SW846 7471A	06/24-06/28/99	CWV8810U
	88	(70 - 130)	6.8	(0-20)	SW846 7471A	06/24-06/28/99	CWV8810V
		Dilution Factor: 1					
Selenium	84	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV8810R
	80	(80 - 120)	4.8	(0-20)	SW846 6010B	06/24-07/16/99	CWV8810T
		Dilution Factor: 1					
Potassium	96	(80 - 120)			SW846 6010B	06/24-07/15/99	CWV8812C
	97	(80 - 120)	1.3	(0-20)	SW846 6010B	06/24-07/15/99	CWV8812D
		Dilution Factor: 1					
Thallium	91	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV8811M
	87	(80 - 120)	4.8	(0-20)	SW846 6010B	06/24-07/16/99	CWV8811N
		Dilution Factor: 1					
Magnesium	98	(80 - 120)			SW846 6010B	06/24-07/15/99	CWV8810X
	116	(80 - 120)	12	(0-20)	SW846 6010B	06/24-07/15/99	CWV88110
		Dilution Factor: 1					
Manganese	113	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV88112
	119	(80 - 120)	3.0	(0-20)	SW846 6010B	06/24-07/16/99	CWV88113
		Dilution Factor: 1					
Sodium	95	(80 - 120)			SW846 6010B	06/24-07/15/99	CWV88115
	96	(80 - 120)	0.83	(0-20)	SW846 6010B	06/24-07/15/99	CWV88116
		Dilution Factor: 1					
Nickel	90	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV88118
	82	(80 - 120)	7.7	(0-20)	SW846 6010B	06/24-07/16/99	CWV88119
		Dilution Factor: 1					
Vanadium	93	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV8811C
	87	(80 - 120)	5.0	(0-20)	SW846 6010B	06/24-07/16/99	CWV8811D
		Dilution Factor: 1					

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MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** SOLID
Date Sampled...: 06/09/99 19:00 **Date Received..:** 06/11/99

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	94	(80 - 120)			SW846 6010B	06/24-07/16/99	CWV8811F
	87	(80 - 120)	6.1	(0-20)	SW846 6010B	06/24-07/16/99	CWV8811G

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** WATER
Date Sampled...: 06/11/99 14:20 **Date Received..:** 06/12/99

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A9F150184-015 **Prep Batch #...:** 9172344							
Mercury	98	(80 - 120)			SW846 7470A	06/22-06/23/99	CWWDK105
	103	(80 - 120)	4.9	(0-20)	SW846 7470A	06/22-06/23/99	CWWDK106
		Dilution Factor: 1					
Silver	117	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK108
	121 N	(80 - 120)	3.0	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK109
		Dilution Factor: 1					
Aluminum	103	(80 - 120)			SW846 6010B	06/22-07/15/99	CWWDK112
	104	(80 - 120)	0.64	(0-20)	SW846 6010B	06/22-07/15/99	CWWDK113
		Dilution Factor: 1					
Arsenic	105	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK10C
	110	(80 - 120)	3.9	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK10D
		Dilution Factor: 1					
Cadmium	103	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK10F
	107	(80 - 120)	3.6	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK10G
		Dilution Factor: 1					
Barium	103	(80 - 120)			SW846 6010B	06/22-07/15/99	CWWDK115
	105	(80 - 120)	2.2	(0-20)	SW846 6010B	06/22-07/15/99	CWWDK116
		Dilution Factor: 1					
Beryllium	102	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK118
	106	(80 - 120)	4.0	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK119
		Dilution Factor: 1					
Chromium	105	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK10J
	109	(80 - 120)	3.4	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK10K
		Dilution Factor: 1					
Calcium	101	(80 - 120)			SW846 6010B	06/22-07/15/99	CWWDK11C
	102	(80 - 120)	0.97	(0-20)	SW846 6010B	06/22-07/15/99	CWWDK11D
		Dilution Factor: 1					
Lead	103	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK10M
	107	(80 - 120)	3.6	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK10N
		Dilution Factor: 1					
Antimony	105	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK10Q
	109	(80 - 120)	3.4	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK10R
		Dilution Factor: 1					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** WATER
Date Sampled...: 06/11/99 14:20 **Date Received..:** 06/12/99

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Cobalt	101	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK11F
	105	(80 - 120)	3.9	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK11G
		Dilution Factor: 1					
Selenium	106	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK10U
	110	(80 - 120)	3.7	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK10V
		Dilution Factor: 1					
Thallium	109	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK10X
	113	(80 - 120)	3.7	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK110
		Dilution Factor: 1					
Copper	106	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK11J
	111	(80 - 120)	3.8	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK11K
		Dilution Factor: 1					
Iron	102	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK11M
	102	(80 - 120)	0.08	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK11N
		Dilution Factor: 1					
Potassium	100	(80 - 120)			SW846 6010B	06/22-07/15/99	CWWDK11Q
	101	(80 - 120)	1.2	(0-20)	SW846 6010B	06/22-07/15/99	CWWDK11R
		Dilution Factor: 1					
Magnesium	101	(80 - 120)			SW846 6010B	06/22-07/15/99	CWWDK11U
	103	(80 - 120)	1.4	(0-20)	SW846 6010B	06/22-07/15/99	CWWDK11V
		Dilution Factor: 1					
Manganese	102	(80 - 120)			SW846 6010B	06/22-07/15/99	CWWDK11X
	104	(80 - 120)	2.0	(0-20)	SW846 6010B	06/22-07/15/99	CWWDK120
		Dilution Factor: 1					
Sodium	98	(80 - 120)			SW846 6010B	06/22-07/15/99	CWWDK122
	101	(80 - 120)	1.9	(0-20)	SW846 6010B	06/22-07/15/99	CWWDK123
		Dilution Factor: 1					
Nickel	101	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK125
	105	(80 - 120)	3.6	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK126
		Dilution Factor: 1					
Vanadium	104	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK128
	109	(80 - 120)	3.9	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK129
		Dilution Factor: 1					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** WATER
Date Sampled...: 06/11/99 14:20 **Date Received..:** 06/12/99

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	106	(80 - 120)			SW846 6010B	06/22-07/16/99	CWWDK12C
	109	(80 - 120)	2.9	(0-20)	SW846 6010B	06/22-07/16/99	CWWDK12D

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

N Spiked analyte recovery is outside stated control limits.

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** SOLID
Date Sampled...: 06/11/99 14:20 **Date Received..:** 06/12/99

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MS Lot-Sample #: A9F150184-016 **Prep Batch #...:** 9174305							
Aluminum	NC,MSB	(80 - 120)			SW846 6010B	06/24-07/15/99	CWWDR105
	NC,MSB	(80 - 120)		(0-20)	SW846 6010B	06/24-07/15/99	CWWDR106
		Dilution Factor: 1					
Silver	108	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR11J
	123 N	(80 - 120)	13	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR11K
		Dilution Factor: 1					
Arsenic	84	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR11M
	85	(80 - 120)	1.1	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR11N
		Dilution Factor: 1					
Barium	92	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR108
	84	(80 - 120)	6.1	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR109
		Dilution Factor: 1					
Beryllium	83	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR10C
	85	(80 - 120)	1.4	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR10D
		Dilution Factor: 1					
Cadmium	96	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR11Q
	96	(80 - 120)	0.60	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR11R
		Dilution Factor: 1					
Calcium	104	(80 - 120)			SW846 6010B	06/24-07/15/99	CWWDR10F
	310 N,*	(80 - 120)	72	(0-20)	SW846 6010B	06/24-07/15/99	CWWDR10G
		Dilution Factor: 1					
Chromium	80	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR11U
	75 N	(80 - 120)	2.7	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR11V
		Dilution Factor: 1					
Cobalt	60 N	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR10J
	63 N	(80 - 120)	2.7	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR10K
		Dilution Factor: 1					
Lead	88	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR11X
	89	(80 - 120)	0.93	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR120
		Dilution Factor: 1					
Antimony	55 N	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR122
	55 N	(80 - 120)	1.2	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR123
		Dilution Factor: 1					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** SOLID
Date Sampled...: 06/11/99 14:20 **Date Received..:** 06/12/99

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Copper	88	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR10M
	86	(80 - 120)	1.6	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR10N
		Dilution Factor: 1					
Iron	NC,MSB	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR10Q
	NC,MSB	(80 - 120)		(0-20)	SW846 6010B	06/24-07/16/99	CWWDR10R
		Dilution Factor: 1					
Mercury	89	(70 - 130)			SW846 7471A	06/24-06/28/99	CWWDR12C
	87	(70 - 130)	2.1	(0-20)	SW846 7471A	06/24-06/28/99	CWWDR12D
		Dilution Factor: 1					
Selenium	90	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR125
	91	(80 - 120)	1.2	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR126
		Dilution Factor: 1					
Potassium	100	(80 - 120)			SW846 6010B	06/24-07/15/99	CWWDR10U
	98	(80 - 120)	1.7	(0-20)	SW846 6010B	06/24-07/15/99	CWWDR10V
		Dilution Factor: 1					
Thallium	97	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR128
	98	(80 - 120)	0.57	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR129
		Dilution Factor: 1					
Magnesium	101	(80 - 120)			SW846 6010B	06/24-07/15/99	CWWDR10X
	114	(80 - 120)	9.2	(0-20)	SW846 6010B	06/24-07/15/99	CWWDR110
		Dilution Factor: 1					
Manganese	NC,MSB	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR112
	NC,MSB	(80 - 120)		(0-20)	SW846 6010B	06/24-07/16/99	CWWDR113
		Dilution Factor: 1					
Sodium	94	(80 - 120)			SW846 6010B	06/24-07/15/99	CWWDR115
	96	(80 - 120)	2.1	(0-20)	SW846 6010B	06/24-07/15/99	CWWDR116
		Dilution Factor: 1					
Nickel	82	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR118
	80	(80 - 120)	0.92	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR119
		Dilution Factor: 1					
Vanadium	41 N	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR11C
	34 N	(80 - 120)	4.7	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR11D
		Dilution Factor: 1					

(Continued on next page)

MATRIX SPIKE SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: A9F140142 **Matrix.....:** SOLID
Date Sampled...: 06/11/99 14:20 **Date Received..:** 06/12/99

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Zinc	0.0 N	(80 - 120)			SW846 6010B	06/24-07/16/99	CWWDR11F
	0.0 N	(80 - 120)	0.0	(0-20)	SW846 6010B	06/24-07/16/99	CWWDR11G

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

NC The recovery and/or RPD were not calculated.

MSB The recovery and RPD were not calculated because the sample amount was greater than four times the spike amount.

Results and reporting limits have been adjusted for dry weight.

N Spiked analyte recovery is outside stated control limits.

* Relative percent difference (RPD) is outside stated control limits.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A9F140142 **Work Order #...:** CWTRH-SMP CWTRH-DUP **Matrix.....:** SOLID

Date Sampled...: 06/10/99 09:30 **Date Received..:** 06/11/99

% Moisture.....: 6.6

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #:	A9F140104-017	
	93.4	93.4	%	0.006	(0-20)	MCAWW 160.3 MOD	06/22-06/23/99	9173141

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A9F140142 **Work Order #...:** CWV8A-SMP **Matrix.....:** SOLID
CWV8A-DUP

Date Sampled...: 06/09/99 19:20 **Date Received..:** 06/11/99

% Moisture.....: 17

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #:	A9F140142-003	
	82.8	81.5	%	1.6	(0-20)	MCAWW 160.3 MOD	06/16-06/17/99	9167139

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A9F140142 **Work Order #...:** CWV8R-SMP CWV8R-DUP **Matrix.....:** SOLID

Date Sampled...: 06/11/99 **Date Received..:** 06/12/99

% Moisture.....: 9.8

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)						SD Lot-Sample #: A9F140142-014		
	7.7	7.7	No Units	0.13	(0-20)	SW846 9045C	06/12/99	9180236
		Dilution Factor: 1						
Total Organic Carbon						SD Lot-Sample #: A9F140142-014		
	16000	16000	mg/kg	0.54	(0-20)	SMCA WALKLEY-BLAC	07/05/99	9186124
		Dilution Factor: 1						

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A9F140142 **Work Order #...:** CWV8X-SMP CWV8X-DUP **Matrix.....:** SOLID

Date Sampled...: 06/11/99 **Date Received..:** 06/12/99

% Moisture.....: 18

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #:	A9F140142-018	
	81.9	80.5	%	1.8	(0-20)	MCAWW 160.3 MOD	06/16-06/17/99	9167139

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A9F140142 **Work Order #...:** CWV9F-SMP CWV9F-DUP **Matrix.....:** SOLID

Date Sampled...: 06/11/99 **Date Received..:** 06/12/99

% Moisture.....: 31

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #:	A9F140142-030	
	69.3	71.3	%	2.9	(0-20)	MCAWW 160.3 MOD	06/16-06/17/99	9167187

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A9F140142 **Work Order #...:** CWW4L-SMP CWW4L-DUP **Matrix.....:** SOLID

Date Sampled...: 06/10/99 11:00 **Date Received..:** 06/11/99

% Moisture.....: 6.8

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #:	A9F150151-008	
	93.3	97.5	%	4.5	(0-20)	MCAWW 160.3 MOD	06/16-06/17/99	9167187

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A9F140142 **Work Order #...:** CWX4N-SMP CWX4N-DUP **Matrix.....:** SOLID

Date Sampled...: 06/09/99 17:50 **Date Received..:** 06/11/99

% Moisture.....: 17

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Solids						SD Lot-Sample #:	A9F160102-015	
	83.3	82.9	%	0.39	(0-20)	MCAWW 160.3 MOD	06/22-06/23/99	9173141

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

SAMPLE DUPLICATE EVALUATION REPORT

General Chemistry

Client Lot #...: A9F140142 **Work Order #...:** CWX5E-SMP CWX5E-DUP **Matrix.....:** SOLID

Date Sampled...: 06/11/99 18:19 **Date Received..:** 06/14/99

% Moisture.....: 12

PARAM	RESULT	DUPLICATE RESULT	UNITS	RPD	RPD LIMIT	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Total Organic Carbon						SD Lot-Sample #: A9F160105-002		
	8100	7800	mg/kg	3.4	(0-20)	SMCA WALKLEY-BLAC	07/05/99	9186124

Dilution Factor: 1

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Results and reporting limits have been adjusted for dry weight.

Chain of Custody Record

Quanterra

QUA-4124

Client: USACE	Project Manager: ALBERT REYES	Date: 10 JUN 99	Chain Of Custody Number: 61528
Address: P O BOX 59	Telephone Number (Area Code)/Fax Number: 502 582 5105 / 5168 Fx	Lab Number:	Page 1 of 2
City: LOUISVILLE; State: KY; Zip Code: 40201	Site Contact:		
Project Name: WASTE WATER TREATMENT PLANTS	Carrier/Waybill Number: 04020541-1		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	Analysis: NITROAROMATICS	Analysis: SVOC	Analysis: RCRA METALS	Analysis: PH	Analysis: TOC
PBOW99SDW101	9 JUN 99	1900	SOIL	4 OZ	GLASS	1	NONE		X				
PBOW99SDW1 01		1900		4 OZ		1				X			
PBOW99SDW1 01		1900		2 OZ		1					X		
PBOW99SDW102		1910		4		1			X				
✓ ✓		1910		4		1				X			
✓ ✓		1910		2		1					X		
PBOW99SDW103		1920		4		1			X				
✓ ✓		✓		4		1				X			
✓ ✓		✓		2		1					X		
PBOW99SDW104		1930		4		1			X				
✓ ✓		✓		4		1				X			
✓ ✓		✓		2		1					X		
PBOW99SSW101	10 JUN 99	1000		4		1			X				
✓ ✓		✓		4		1				X			
✓ ✓		✓		4		1						X	
✓ ✓		✓		2		1					X	X	

Special Instructions

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Turn Around Time Required: ☒ Normal ☐ Rush

QC Level: ☐ I. ☐ II. ☐ III.

Project Specific (Specify)

	Date	Time		Date	Time
1. Relinquished By: ALBERT REYES	10 JUN 99	1600	1. Received By:	6/10/9	
2. Relinquished By:			2. Received By:		
3. Relinquished By:			3. Received By:	6-11-99	1000A

Comments

DISTRIBUTION: WHITE - Stays with Sample; CANARY - Returned to Client with Report; PINK - Field Copy

[redacted] [redacted]

Chain of Custody Record

Quanterra

QUA-4124

Client: USACE	Project Manager: ALBERT REYES	Date: 10 JUN 99	Chain Of Custody Number: 61627
Address: PO BOX 5	Telephone Number (Area Code)/Fax Number: 502 582 5105 / 5168 Fx	Lab Number:	Page 2 of 2
City: LOUISVILLE; State: KY; Zip Code: 40201	Site Contact:		
Project Name: WASTE WATER TREATMENT PLANTS	Carrier/Waybill Number: 0402054 1-1		
Contract/Purchase Order/Quote No.: [redacted]			

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	Analysis: NITROGEN NAT	SVOC	RCRA METALS	PH	TOC
PBOW99SDW105	9JUN99	1940	SOIL	402	GLASS	1	NONE		X				
↓	↓	↓	↓	4	↓	1	↓			X			
				2		1					X		
PBOW99SSW104	10JUN99	1230		4		1			X				
				2		1					X		
PBOW99SSW105		1130		4		1			X				
				2		1					X		
PBOW99SSW107		1145		4		1			X				
				2		1					X		
PBOW99SSW108		1200		4		1			X				
				2		1					X		
PBOW99SSW109		1215		4		1			X				
				2		1					X		

Special Instructions

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Turn Around Time Required: ☒ Normal ☐ Rush

QC Level: ☐ I. ☐ II. ☐ III.

Project Specific (Specify):

	Date	Time		Date	Time
1. Relinquished By: ALBERT REYES [signature]	10JUN99	16:00	1. Received By: [signature]	6 10 99	
2. Relinquished By:			2. Received By:		
3. Relinquished By:			3. Received By: [signature]	6-11-99	1000A

Comments

DISTRIBUTION: WHITE - Stays with Sample; CANARY - Returned to Client with Report; PINK - Field Copy

[redacted] [redacted]

Chain of Custody Record

Quanterra

QUA-4124

Client: USACE	Project Manager: ALBERT REYES	Date: 10 JUN 99	Chain Of Custody Number: 01630
Address: PO BOX 59	Telephone Number (Area Code)/Fax Number: 502 582 5705 / 5168 Fx	Lab Number:	Page ____ of ____
City: LOUISVILLE; State: KY; Zip Code: 40201	Site Contact:		
Project Name: WASTE WATER TREATMENT PLANTS	Carrier/Waybill Number: 0410 20541-1		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	Nitrate/Nitrite	SVOCs	VOC	PCBs	Rcra metals
PB OW 99 SW W1 01	10 JUN 99	1100	WATER	2 LT	AMBER	2	NONE		X				
✓ ✓	10 JUN 99		✓	2 LT	✓ ✓	2	NONE			X			
✓ ✓			✓	2 LT	✓ ✓	2	✓ ✓					X	
✓ ✓		↓	✓	1 LT	POLY	1	NHO3						X
PB OW 99 SW W1 02		1130		2 LT	AMBER	2	NONE		X				
✓ ✓				2 LT	↓	2				X			
✓ ✓				2 LT		2						X	
✓ ✓				1 LT	POLY	1	NHO3						X

Special Instructions

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For ____ Months

Turn Around Time Required: ☒ Normal ☐ Rush

QC Level: ☐ I. ☐ II. ☐ III.

Project Specific (Specify):

	Date	Time		Date	Time
1. Relinquished By: [signature]	10 JUN 99	16:00	1. Received By: [signature]	6 10 99	
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By: [signature]	6-11-99	1000A

Comments

DISTRIBUTION: WHITE - Stays with Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Chain of Custody Record

Quanterra

QUA-4124

Client	Project Manager	Date	Chain Of Custody Number
USACE	ALBERT REYES	11 JUN 99	61634
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	Page 1 of 3
PO BOX 59	502 582 5105 / 6168 Fax		

City	State	Zip Code	Site Contact
LOUISVILLE	KY	40201	

Project Name: WASTE WATER TREATMENT PLANTS

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	NITROGEN MT	VOCs	SVOCs	PCBs	TAL METALS	pH	SIEVE/PARTICL	ASBESTOS	TOC			
PB OW 99 SSW 201	11 JUN 99		SOIL	GLASS	4oz	1	NONE		X											
✓ ✓					4oz	1									X					
✓ ✓					4oz	1											X			
✓ ✓					2oz	1							X	X						
PB OW 99 SSW 202					4oz	1			X											
✓ ✓					4oz	1				X										
✓ ✓					4oz	1					X	X								
✓ ✓					2oz	1							X							
PB OW 99 SSW 203					4oz	1			X											
✓ ✓					4oz	1				X										
✓ ✓					4oz	1					X	X								
✓ ✓					2oz	1							X							
PB OW 99 SSW 204					4oz	1			X											
✓ ✓					2oz	1							X							
PB OW 99 SSW 205					4oz	1			X											
✓ ✓					2oz	1							X							

Special Instructions:

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Turn Around Time Required: ☒ Normal ☐ Rush

QC Level: ☐ I. ☐ II. ☐ III.

Project Specific (Specify):

	Date	Time		Date	Time
1. Relinquished By: Albert Reyes	11 JUN 99	16:00	1. Received By: [illegible]	6/1/99	
2. Relinquished By:			2. Received By: Paulette Otto	6-12-99	10 AM
3. Relinquished By:			3. Received By:		

Comments:

DISTRIBUTION: WHITE - Stays with Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Chain of Custody Record

Quanterra

QUA 4124

Client: USACE	Project Manager: ALBERT REYES	Date: 11 JUN 99	Chain Of Custody Number: 61635
Address: PO BOX 59	Telephone Number (Area Code)/Fax Number: 502 582 5705 / 5268 Fax	Lab Number:	Page 2 of 3
City: LOUISVILLE; State: KY; Zip Code: 40201	Site Contact:		
Project Name: WASTE WATER TREATMENT PLANTS	Carrier/Waybill Number:		
Contract/Purchase Order/Quote No.:			

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	NITROGEN	VOCs	SVOCs	PCBs	TAL METALS	PH	SULFIDE/AMMONIA	ASBESTOS	TPC			
PB0W99SSW206	11 JUN 99		SOIL	4 oz	GLASS	1	NONE		X											
✓ ✓	↓		↓	4 oz	↓	1	↓			X										
✓ ✓				4 oz		1					X	X								
				2 oz		1							X							
PB0W99SSW207				4 oz		1			X											
✓ ✓				2 oz		1							X							
PB0W99SSW208				4 oz		1			X											
✓ ✓				2 oz		1							X							
PB0W99SSW209				4 oz		1			X											
✓ ✓				2 oz		1							X							
PB0W99SSW210				4 oz		1			X											
✓ ✓				2 oz		1							X							
PB0W99SSW211				4 oz		1										X				
PB0W99SSW212				4 oz		1										X				
PB0W99SSW213				4 oz		1										X				
PB0W99SSW214	↓		↓	4 oz	↓	1	↓									X				

Special Instructions

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Turn Around Time Required: ☒ Normal ☐ Rush

QC Level: ☐ I. ☐ II. ☐ III.

Project Specific (Specify):

	Date	Time		Date	Time
1. Relinquished By: Albert Reyes	11 JUN 99	16:00	1. Received By: [illegible]	6-11-99	
2. Relinquished By:			2. Received By: Paulette [illegible]	6-12-99	10AM
3. Relinquished By:			3. Received By:		

Comments

DISTRIBUTION: WHITE - Stays with Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Chain of Custody Record

Quanterra

QUA-4124

Client	Project Manager	Date	Chain Of Custody Number
USACE	ALBERT REYES	11 JUN 99	61636
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 3 of 3
City / State / Zip Code	Site Contact		
Project Name: WASTEWATER TREATMENT PLANTS	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	Asbestos	Nitrogen	SVOCs	TPH Metals
PBOW99SSW215	11JUN99		SOIL	402	GLASS	1	NONE		X			
PBOW99SSW216	11JUN99		SOIL	402	GLASS	1	✓		X			
PBOW99SDW201	↓		↓	4	↓	1	↓			X		
✓ ✓				4		1					X	
✓ ✓				2		1						X
PBOW99SDW202				4		1				X		
✓ ✓				4		1					X	
✓ ✓				2		1						X
PBOW99SDW203				4		1				X		
✓ ✓				4		1					X	
✓ ✓				2		1						X

Special Instructions

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Turn Around Time Required: ☒ Normal ☐ Rush

QC Level: ☐ I. ☐ II. ☐ III.

Project Specific (Specify)

	Date	Time		Date	Time
1. Relinquished By: [signature]	11JUN99	1600	1. Received By: [signature]	6-11-99	
2. Relinquished By: [signature]			2. Received By: [signature]	6-12-99	10AM
3. Relinquished By:			3. Received By:		

Comments

DISTRIBUTION: WHITE - Stays with Sample; CANARY - Returned to Client with Report; PINK - Field Copy

[redacted] [redacted]

Chain of Custody Record

Quanterra

QUA 4124

Client	Project Manager	Date	Chain Of Custody Number
USACE	ALBERT REYES	10 JUN 99	51637
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	Page 1 of 2
PO BOX 59	502 582 5705 / 5768		

City	State	Zip Code	Site Contact
LOUISVILLE	KY	40201	

Project Name: WASTEWATER TREATMENT PLANTS

Carrier/Waybill Number:

Contract/Purchase Order/Quote No.:

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	NITROAROMAT	VOCs	SVOCs	PCBs	TAL METALS	ASBESTOS
PBOW9955W102	10 JUN 99		SOIL	4 OZ	GLASS	1	NONE		X					
✓ ✓				4		1				X				
✓ ✓				4		1					X	X		
✓ ✓				2		1							X	
PBOW9955W103				4		1			X					
✓ ✓				4		1				X				
✓ ✓				4		1					X	X		
✓ ✓				2		1							X	
PBOW9955W106				4		1			X					
✓ ✓				4		1				X				
✓ ✓				4		1					X	X		
✓ ✓				2		1							X	
PBOW9955W110				4		1			X					
✓ ✓				2		1							X	
PBOW9955W111				4		1								X
PBOW9955W112				4		1								X

Special Instructions:

Possible Hazard Identification: ☐ Non-Hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☒ Unknown

Sample Disposal: ☐ Return To Client ☒ Disposal By Lab ☐ Archive For _____ Months

Turn Around Time Required: ☒ Normal ☐ Rush

QC Level: ☐ I. ☐ II. ☐ III.

Project Specific (Specify):

	Date	Time		Date	Time
1. Relinquished By: Albert Reyes	11 JUN 99	1600	1. Received By: R Usselmen	6-11-99	
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By: [illegible]	6-12-99	1000

Comments: N

DISTRIBUTION: WHITE - Stays with Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Chain of Custody Record

Quanterra

QUA-4124

Client	Project Manager	Date	Chain Of Custody Number
USACE	ALBERT REYES	10 JUN 99	61639
Address	Telephone Number (Area Code)/Fax Number	Lab Number	Page 2 of 2
City / State / Zip Code	Site Contact		
Project Name: WASTEWATER TREATMENT PLANTS	Carrier/Waybill Number		
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	Analysis: ASBESTOS
PBOW9955W113	10JUN99		SOIL	4 oz	GLASS	1			X
PBOW9955W114	↓		↓	4 oz	↓	1			X
PBOW9955W115	↓		↓	4 oz	↓	1			X
PBOW9955W116	↓		↓	4 oz	↓	1			X

Special Instructions

Possible Hazard Identification
[ ] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [X] Unknown

Sample Disposal
[ ] Return To Client [X] Disposal By Lab [ ] Archive For ____ Months

Turn Around Time Required
[X] Normal [ ] Rush

QC Level
[ ] I. [ ] II. [ ] III.

Project Specific (Specify)

	Date	Time		Date	Time
1. Relinquished By: Albert Reyes	11 JUN 99	16:00	1. Received By: [signature]	6-11-99	
2. Relinquished By			2. Received By		
3. Relinquished By			3. Received By: [signature]	6-12-99	1000

Comments

DISTRIBUTION: [illegible]

Chain of Custody Record

Quanterra

QUA-4124

Client	Project Manager	Date	Chain Of Custody Number
USACE	ALBERT REYES	11 JUN 99	C1638
Address	**Telephone Number (Area Code)/Fax Number**	**Lab Number**	**Page 1 of 1**
POBOX 59	502 582 5405 / 5468		
City / State / Zip Code	**Site Contact**		
LOUISVILLE / KY / 40201			
Project Name	**Carrier/Waybill Number**		
WASTEWATER TREATMENT PLANTS			
Contract/Purchase Order/Quote No.			

Sample I.D. No. and Description	Date	Time	Sample Type	Total Volume	Containers Type	Containers No.	Preservative	Condition on Receipt	Analysis: NITRO AROMAT	Analysis: SVOCs	Analysis: PCBs	Analysis: TAL METALS	Analysis: ###
PBOW99SWW201	11 JUN 99		WATER	2 LT	AMBER	2			X				
✓ ✓	↓		↓			2				X			
✓ ✓						2					X		
✓ ✓				1 LT	POLY	1	NHO_3					X	
PBOW99SWW202				2 LT		2			X				
✓ ✓						2				X			
✓ ✓						2					X		
✓ ✓				1 LT		1	NHO_3					X	

Special Instructions

Possible Hazard Identification: [X] Non-Hazard [ ] Flammable [ ] Skin Irritant [ ] Poison B [ ] Unknown

Sample Disposal: [ ] Return To Client [X] Disposal By Lab [ ] Archive For _____ Months

Turn Around Time Required: [X] Normal [ ] Rush

QC Level: [ ] I. [ ] II. [ ] III.

Project Specific (Specify)

	Date	Time		Date	Time
1. Relinquished By	11 JUN 99	1600	1. Received By	6-11-99	
2. Relinquished By			2. Received By	6-12-99	1000
3. Relinquished By			3. Received By		

Comments

DISTRIBUTION: WHITE - Stays with Sample; CANARY - Returned to Client with Report; PINK - Field Copy

Quanterra

Quanterra Incorporated
5815 Middlebrook Pike
Knoxville, Tennessee 37921

423 588-6401 Telephone
423 584-4315 Fax

ANALYTICAL REPORT

WWTP#3 at PBOW

Lot #: H9I040105

Albert Reyes

U.S. Army Corps of Engineers

600 Martin Luther King Place
Louisville
KY 40202

QUANTERRA INCORPORATED

Jamie A. McKinney

Jamie A. McKinney
Project Manager

September 17, 1999

SAMPLE SUMMARY

H9I040105

WO #	SAMPLE#	CLIENT SAMPLE ID	DATE	TIME
D250E	001	PBOW99SSW301	09/02/99	
D250F	002	PBOW99SSW302	09/02/99	
D250G	003	PBOW99SSW303	09/02/99	
D250H	004	PBOW99SSW304	09/02/99	
D250K	005	PBOW99SSW305	09/02/99	
D250L	006	PBOW99SSW306	09/02/99	
D250N	007	PBOW99SSW307	09/02/99	
D250P	008	PBOW99SSW308	09/02/99	
D250R	009	PBOW99SSW309	09/02/99	
D250T	010	PBOW99SSW310	09/02/99	
D250W	011	PBOW99SDW301	09/02/99	
D250X	012	PBOW99SDW302	09/02/99	

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

ANALYTICAL METHODS SUMMARY

H9I040105

PARAMETER	ANALYTICAL METHOD
pH Non-Aqueous	SW846 9045A
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Mercury in Solid Waste (Manual Cold-Vapor)	SW846 7471A
Nitroaromatics and Nitramines by HPLC	SW846 8330
Percent Moisture	MCAWW 160.3 MOD
PCBs by SW-846 8082	SW846 8082
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Trace Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Volatile Organics by GC/MS	SW846 8260B

References:

MCAWW "Methods for Chemical Analysis of Water and Wastes", EPA-600/4-79-020, March 1983 and subsequent revisions.

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

PROJECT NARRATIVE
H9I040105

The results reported herein are applicable to the samples submitted for analysis only.

The original chain of custody's are included with this report.

Sample Receipt

There were no problems with the condition of the samples received.

Subcontract

The following analysis was performed by AT Labs, 250 DeBartolo PI, #2525, Youngstown, OH 44512: Asbestos (PLM per EPA 600/M4-82-020).

Quality Control

All holding times and QC criteria were met except for the following exceptions:

Volatiles

Internal standard recoveries for sample PBOW99SSW303 were outside QC limits. However, reanalysis of the sample resulted in similar results, indicating that a sample matrix effect is responsible for the internal standard criteria not being met. Both sets of data are reported.

Comments

Semivolatiles

The concentrations of several compounds in sample PB0W99SSW303 exceeded the calibration level of the instrument. The sample was analyzed at an appropriate dilution to bring the concentrations of the compounds into the instrument calibration range. The results for both analyses are reported in order to provide the lowest possible reporting limits.

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PROJECT NARRATIVE
H9I040105

PCBs

Samples P PB0W99SSW302 and PB0W99SSW303 were reported with elevated reporting limits for Aroclor 1260 due to matrix interference.

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Sample Data Summary

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW302

GC/MS Volatiles

Lot-Sample #...: H9I040105-002 **Work Order #...:** D250F10V **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/07/99 **Analysis Date..:** 09/07/99
Prep Batch #...: 9250182
Dilution Factor: 1
% Moisture.....: 8.4 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	5.5	ug/kg
Bromobenzene	ND	5.5	ug/kg
Bromochloromethane	ND	5.5	ug/kg
Bromodichloromethane	ND	5.5	ug/kg
Bromoform	ND	5.5	ug/kg
Bromomethane	ND	11	ug/kg
n-Butylbenzene	ND	5.5	ug/kg
sec-Butylbenzene	ND	5.5	ug/kg
tert-Butylbenzene	ND	5.5	ug/kg
Carbon tetrachloride	ND	5.5	ug/kg
Chlorobenzene	ND	5.5	ug/kg
Chlorodibromomethane	ND	5.5	ug/kg
Chloroethane	ND	11	ug/kg
hloroform	ND	5.5	ug/kg
Chloromethane	ND	11	ug/kg
2-Chlorotoluene	ND	5.5	ug/kg
4-Chlorotoluene	ND	5.5	ug/kg
1,2-Dibromo-3-chloro-propane	ND	11	ug/kg
1,2-Dibromoethane	ND	5.5	ug/kg
Dibromomethane	ND	5.5	ug/kg
1,2-Dichlorobenzene	ND	5.5	ug/kg
1,3-Dichlorobenzene	ND	5.5	ug/kg
1,4-Dichlorobenzene	ND	5.5	ug/kg
Dichlorodifluoromethane	ND	11	ug/kg
1,1-Dichloroethane	ND	5.5	ug/kg
1,2-Dichloroethane	ND	5.5	ug/kg
1,1-Dichloroethene	ND	5.5	ug/kg
cis-1,2-Dichloroethene	ND	5.5	ug/kg
trans-1,2-Dichloroethene	ND	5.5	ug/kg
1,2-Dichloropropane	ND	5.5	ug/kg
1,3-Dichloropropane	ND	5.5	ug/kg
2,2-Dichloropropane	ND	5.5	ug/kg
1,1-Dichloropropene	ND	5.5	ug/kg
Ethylbenzene	ND	5.5	ug/kg
Hexachlorobutadiene	ND	5.5	ug/kg
Isopropylbenzene	ND	5.5	ug/kg
p-Isopropyltoluene	ND	5.5	ug/kg

(Continued on next page)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW302

GC/MS Volatiles

Lot-Sample #...: H9I040105-002 **Work Order #...:** D250F10V **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methylene chloride	**12**	**5.5**	**ug/kg**
Naphthalene	ND	5.5	ug/kg
n-Propylbenzene	ND	5.5	ug/kg
Styrene	ND	5.5	ug/kg
1,1,1,2-Tetrachloroethane	ND	5.5	ug/kg
1,1,2,2-Tetrachloroethane	ND	5.5	ug/kg
Tetrachloroethene	ND	5.5	ug/kg
Toluene	ND	5.5	ug/kg
1,2,3-Trichlorobenzene	ND	5.5	ug/kg
1,2,4-Trichlorobenzene	ND	5.5	ug/kg
1,1,1-Trichloroethane	ND	5.5	ug/kg
1,1,2-Trichloroethane	ND	5.5	ug/kg
Trichloroethene	ND	5.5	ug/kg
Trichlorofluoromethane	ND	11	ug/kg
1,2,3-Trichloropropane	ND	5.5	ug/kg
1,2,4-Trimethylbenzene	ND	5.5	ug/kg
1,3,5-Trimethylbenzene	ND	5.5	ug/kg
Vinyl chloride	ND	11	ug/kg
-Xylene	ND	5.5	ug/kg
m-Xylene & p-Xylene	ND	5.5	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(83 - 132)
1,2-Dichloroethane-d4	103	(68 - 138)
Toluene-d8	108	(80 - 146)
Bromofluorobenzene	114	(78 - 167)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW303

GC/MS Volatiles

Lot-Sample #...: H9I040105-003 **Work Order #...:** D250G10V **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/07/99 **Analysis Date..:** 09/07/99
Prep Batch #...: 9250182
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	6.0	ug/kg
Bromobenzene	ND	6.0	ug/kg
Bromochloromethane	ND	6.0	ug/kg
Bromodichloromethane	ND	6.0	ug/kg
Bromoform	ND	6.0	ug/kg
Bromomethane	ND	12	ug/kg
n-Butylbenzene	ND	6.0	ug/kg
sec-Butylbenzene	ND	6.0	ug/kg
tert-Butylbenzene	ND	6.0	ug/kg
Carbon tetrachloride	ND	6.0	ug/kg
Chlorobenzene	ND	6.0	ug/kg
Chlorodibromomethane	ND	6.0	ug/kg
Chloroethane	ND	12	ug/kg
hloroform	ND	6.0	ug/kg
Chloromethane	ND	12	ug/kg
2-Chlorotoluene	ND	6.0	ug/kg
4-Chlorotoluene	ND	6.0	ug/kg
1,2-Dibromo-3-chloro-propane	ND	12	ug/kg
1,2-Dibromoethane	ND	6.0	ug/kg
Dibromomethane	ND	6.0	ug/kg
1,2-Dichlorobenzene	ND	6.0	ug/kg
1,3-Dichlorobenzene	ND	6.0	ug/kg
1,4-Dichlorobenzene	ND	6.0	ug/kg
Dichlorodifluoromethane	ND	12	ug/kg
1,1-Dichloroethane	ND	6.0	ug/kg
1,2-Dichloroethane	ND	6.0	ug/kg
1,1-Dichloroethene	ND	6.0	ug/kg
cis-1,2-Dichloroethene	ND	6.0	ug/kg
trans-1,2-Dichloroethene	ND	6.0	ug/kg
1,2-Dichloropropane	ND	6.0	ug/kg
1,3-Dichloropropane	ND	6.0	ug/kg
2,2-Dichloropropane	ND	6.0	ug/kg
1,1-Dichloropropene	ND	6.0	ug/kg
Ethylbenzene	ND	6.0	ug/kg
Hexachlorobutadiene	ND	6.0	ug/kg
Isopropylbenzene	ND	6.0	ug/kg
p-Isopropyltoluene	ND	6.0	ug/kg

(Continued on next page)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW303

GC/MS Volatiles

Lot-Sample #...: H9I040105-003 **Work Order #...:** D250G10V **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methylene chloride	**13**	**6.0**	**ug/kg**
Naphthalene	ND	6.0	ug/kg
n-Propylbenzene	ND	6.0	ug/kg
Styrene	ND	6.0	ug/kg
1,1,1,2-Tetrachloroethane	ND	6.0	ug/kg
1,1,2,2-Tetrachloroethane	ND	6.0	ug/kg
Tetrachloroethene	ND	6.0	ug/kg
Toluene	ND	6.0	ug/kg
1,2,3-Trichlorobenzene	ND	6.0	ug/kg
1,2,4-Trichlorobenzene	ND	6.0	ug/kg
1,1,1-Trichloroethane	ND	6.0	ug/kg
1,1,2-Trichloroethane	ND	6.0	ug/kg
Trichloroethene	ND	6.0	ug/kg
Trichlorofluoromethane	ND	12	ug/kg
1,2,3-Trichloropropane	ND	6.0	ug/kg
1,2,4-Trimethylbenzene	ND	6.0	ug/kg
1,3,5-Trimethylbenzene	ND	6.0	ug/kg
Vinyl chloride	ND	12	ug/kg
o-Xylene	ND	6.0	ug/kg
m-Xylene & p-Xylene	ND	6.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	111	(83 - 132)
1,2-Dichloroethane-d4	113	(68 - 138)
Toluene-d8	113	(80 - 146)
Bromofluorobenzene	116	(78 - 167)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW303

GC/MS Volatiles

Lot-Sample #...: H9I040105-003 **Work Order #...:** D250G20V **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/07/99 **Analysis Date..:** 09/07/99
Prep Batch #...: 9250182
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8260B

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	6.0	ug/kg
Bromobenzene	ND	6.0	ug/kg
Bromochloromethane	ND	6.0	ug/kg
Bromodichloromethane	ND	6.0	ug/kg
Bromoform	ND	6.0	ug/kg
Bromomethane	ND	12	ug/kg
n-Butylbenzene	ND	6.0	ug/kg
sec-Butylbenzene	ND	6.0	ug/kg
tert-Butylbenzene	ND	6.0	ug/kg
Carbon tetrachloride	ND	6.0	ug/kg
Chlorobenzene	ND	6.0	ug/kg
Chlorodibromomethane	ND	6.0	ug/kg
Chloroethane	ND	12	ug/kg
Chloroform	ND	6.0	ug/kg
Chloromethane	ND	12	ug/kg
2-Chlorotoluene	ND	6.0	ug/kg
4-Chlorotoluene	ND	6.0	ug/kg
1,2-Dibromo-3-chloro-propane	ND	12	ug/kg
1,2-Dibromoethane	ND	6.0	ug/kg
Dibromomethane	ND	6.0	ug/kg
1,2-Dichlorobenzene	ND	6.0	ug/kg
1,3-Dichlorobenzene	ND	6.0	ug/kg
1,4-Dichlorobenzene	ND	6.0	ug/kg
Dichlorodifluoromethane	ND	12	ug/kg
1,1-Dichloroethane	ND	6.0	ug/kg
1,2-Dichloroethane	ND	6.0	ug/kg
1,1-Dichloroethene	ND	6.0	ug/kg
cis-1,2-Dichloroethene	ND	6.0	ug/kg
trans-1,2-Dichloroethene	ND	6.0	ug/kg
1,2-Dichloropropane	ND	6.0	ug/kg
1,3-Dichloropropane	ND	6.0	ug/kg
2,2-Dichloropropane	ND	6.0	ug/kg
1,1-Dichloropropene	ND	6.0	ug/kg
Ethylbenzene	ND	6.0	ug/kg
Hexachlorobutadiene	ND	6.0	ug/kg
Isopropylbenzene	ND	6.0	ug/kg
p-Isopropyltoluene	ND	6.0	ug/kg

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW303

GC/MS Volatiles

Lot-Sample #...: H9I040105-003 **Work Order #...:** D250G20V **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Methylene chloride	**13**	**6.0**	**ug/kg**
Naphthalene	ND	6.0	ug/kg
n-Propylbenzene	ND	6.0	ug/kg
Styrene	ND	6.0	ug/kg
1,1,1,2-Tetrachloroethane	ND	6.0	ug/kg
1,1,2,2-Tetrachloroethane	ND	6.0	ug/kg
Tetrachloroethene	ND	6.0	ug/kg
Toluene	ND	6.0	ug/kg
1,2,3-Trichlorobenzene	ND	6.0	ug/kg
1,2,4-Trichlorobenzene	ND	6.0	ug/kg
1,1,1-Trichloroethane	ND	6.0	ug/kg
1,1,2-Trichloroethane	ND	6.0	ug/kg
Trichloroethene	ND	6.0	ug/kg
Trichlorofluoromethane	ND	12	ug/kg
1,2,3-Trichloropropane	ND	6.0	ug/kg
1,2,4-Trimethylbenzene	ND	6.0	ug/kg
1,3,5-Trimethylbenzene	ND	6.0	ug/kg
Vinyl chloride	ND	12	ug/kg
o-Xylene	ND	6.0	ug/kg
m-Xylene & p-Xylene	ND	6.0	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	110	(83 - 132)
1,2-Dichloroethane-d4	107	(68 - 138)
Toluene-d8	114	(80 - 146)
Bromofluorobenzene	121	(78 - 167)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: H9I040105 **Work Order #...:** D25T2101 **Matrix.....:** SOLID
MB Lot-Sample #: H9I070000-182

Prep Date.....: 09/07/99
Analysis Date..: 09/07/99 **Prep Batch #...:** 9250182
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	5.0	ug/kg	SW846 8260B
Bromobenzene	ND	5.0	ug/kg	SW846 8260B
Bromochloromethane	ND	5.0	ug/kg	SW846 8260B
Bromodichloromethane	ND	5.0	ug/kg	SW846 8260B
Bromoform	ND	5.0	ug/kg	SW846 8260B
Bromomethane	ND	10	ug/kg	SW846 8260B
n-Butylbenzene	ND	5.0	ug/kg	SW846 8260B
sec-Butylbenzene	ND	5.0	ug/kg	SW846 8260B
tert-Butylbenzene	ND	5.0	ug/kg	SW846 8260B
Carbon tetrachloride	ND	5.0	ug/kg	SW846 8260B
Chlorobenzene	ND	5.0	ug/kg	SW846 8260B
Chlorodibromomethane	ND	5.0	ug/kg	SW846 8260B
Chloroethane	ND	10	ug/kg	SW846 8260B
Chloroform	ND	5.0	ug/kg	SW846 8260B
loromethane	ND	10	ug/kg	SW846 8260B
2-Chlorotoluene	ND	5.0	ug/kg	SW846 8260B
4-Chlorotoluene	ND	5.0	ug/kg	SW846 8260B
1,2-Dibromo-3-chloro-propane	ND	10	ug/kg	SW846 8260B
1,2-Dibromoethane	ND	5.0	ug/kg	SW846 8260B
Dibromomethane	ND	5.0	ug/kg	SW846 8260B
1,2-Dichlorobenzene	ND	5.0	ug/kg	SW846 8260B
1,3-Dichlorobenzene	ND	5.0	ug/kg	SW846 8260B
1,4-Dichlorobenzene	ND	5.0	ug/kg	SW846 8260B
Dichlorodifluoromethane	ND	10	ug/kg	SW846 8260B
1,1-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
1,2-Dichloroethane	ND	5.0	ug/kg	SW846 8260B
1,1-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
cis-1,2-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
trans-1,2-Dichloroethene	ND	5.0	ug/kg	SW846 8260B
1,2-Dichloropropane	ND	5.0	ug/kg	SW846 8260B
1,3-Dichloropropane	ND	5.0	ug/kg	SW846 8260B
2,2-Dichloropropane	ND	5.0	ug/kg	SW846 8260B
1,1-Dichloropropene	ND	5.0	ug/kg	SW846 8260B
Ethylbenzene	ND	5.0	ug/kg	SW846 8260B
Hexachlorobutadiene	ND	5.0	ug/kg	SW846 8260B
Isopropylbenzene	ND	5.0	ug/kg	SW846 8260B
p-Isopropyltoluene	ND	5.0	ug/kg	SW846 8260B
Methylene chloride	ND	5.0	ug/kg	SW846 8260B
ohthalene	ND	5.0	ug/kg	SW846 8260B
Propylbenzene	ND	5.0	ug/kg	SW846 8260B

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METHOD BLANK REPORT

GC/MS Volatiles

Client Lot #...: H9I040105 **Work Order #...:** D25T2101 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Styrene	ND	5.0	ug/kg	SW846 8260B
1,1,1,2-Tetrachloroethane	ND	5.0	ug/kg	SW846 8260B
1,1,2,2-Tetrachloroethane	ND	5.0	ug/kg	SW846 8260B
Tetrachloroethene	ND	5.0	ug/kg	SW846 8260B
Toluene	ND	5.0	ug/kg	SW846 8260B
1,2,3-Trichlorobenzene	ND	5.0	ug/kg	SW846 8260B
1,2,4-Trichlorobenzene	ND	5.0	ug/kg	SW846 8260B
1,1,1-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
1,1,2-Trichloroethane	ND	5.0	ug/kg	SW846 8260B
Trichloroethene	ND	5.0	ug/kg	SW846 8260B
Trichlorofluoromethane	ND	10	ug/kg	SW846 8260B
1,2,3-Trichloropropane	ND	5.0	ug/kg	SW846 8260B
1,2,4-Trimethylbenzene	ND	5.0	ug/kg	SW846 8260B
1,3,5-Trimethylbenzene	ND	5.0	ug/kg	SW846 8260B
Vinyl chloride	ND	10	ug/kg	SW846 8260B
o-Xylene	ND	5.0	ug/kg	SW846 8260B
m-Xylene & p-Xylene	ND	5.0	ug/kg	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	103	(83 - 132)
1,2-Dichloroethane-d4	101	(68 - 138)
Toluene-d8	102	(80 - 146)
Bromofluorobenzene	100	(78 - 167)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: H9I040105 **Work Order #...:** D25T2102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I070000-182
Prep Date.....: 09/07/99 **Analysis Date..:** 09/07/99
Prep Batch #...: 9250182
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Dichlorodifluoromethane	50.0	51.3	ug/kg	103	SW846 8260B
Chloromethane	50.0	49.0	ug/kg	98	SW846 8260B
Vinyl chloride	50.0	50.7	ug/kg	101	SW846 8260B
Bromomethane	50.0	78.6	ug/kg	157	SW846 8260B
Chloroethane	50.0	58.6	ug/kg	117	SW846 8260B
Trichlorofluoromethane	50.0	52.3	ug/kg	105	SW846 8260B
1,1-Dichloroethene	**50.0**	**52.2**	**ug/kg**	**104**	**SW846 8260B**
Methylene chloride	50.0	47.9	ug/kg	96	SW846 8260B
trans-1,2-Dichloroethene	50.0	51.2	ug/kg	102	SW846 8260B
1,1-Dichloroethane	50.0	51.3	ug/kg	103	SW846 8260B
2,2-Dichloropropane	50.0	49.7	ug/kg	99	SW846 8260B
cis-1,2-Dichloroethene	50.0	51.2	ug/kg	102	SW846 8260B
Bromochloromethane	50.0	50.5	ug/kg	101	SW846 8260B
Chloroform	50.0	50.2	ug/kg	100	SW846 8260B
,1,1-Trichloroethane	50.0	49.8	ug/kg	100	SW846 8260B
arbon tetrachloride	50.0	49.3	ug/kg	99	SW846 8260B
1,1-Dichloropropene	50.0	50.2	ug/kg	100	SW846 8260B
Benzene	**50.0**	**50.7**	**ug/kg**	**101**	**SW846 8260B**
1,2-Dichloroethane	50.0	50.3	ug/kg	101	SW846 8260B
Trichloroethene	**50.0**	**49.6**	**ug/kg**	**99**	**SW846 8260B**
1,2-Dichloropropane	50.0	50.1	ug/kg	100	SW846 8260B
Dibromomethane	50.0	49.9	ug/kg	100	SW846 8260B
Bromodichloromethane	50.0	49.6	ug/kg	99	SW846 8260B
Toluene	**50.0**	**52.9**	**ug/kg**	**106**	**SW846 8260B**
1,1,2-Trichloroethane	50.0	54.2	ug/kg	108	SW846 8260B
Tetrachloroethene	50.0	51.6	ug/kg	103	SW846 8260B
1,3-Dichloropropane	50.0	55.6	ug/kg	111	SW846 8260B
Chlorodibromomethane	50.0	53.2	ug/kg	106	SW846 8260B
1,2-Dibromoethane	50.0	54.9	ug/kg	110	SW846 8260B
Chlorobenzene	**50.0**	**50.2**	**ug/kg**	**100**	**SW846 8260B**
Ethylbenzene	50.0	49.7	ug/kg	99	SW846 8260B
1,1,1,2-Tetrachloroethane	50.0	50.7	ug/kg	101	SW846 8260B
m-Xylene & p-Xylene	100	99.7	ug/kg	100	SW846 8260B
o-Xylene	50.0	50.3	ug/kg	101	SW846 8260B
Styrene	50.0	50.2	ug/kg	100	SW846 8260B

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: H9I040105 **Work Order #...:** D25T2102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I070000-182

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Bromoform	50.0	53.7	ug/kg	107	SW846 8260B
Isopropylbenzene	50.0	48.2	ug/kg	96	SW846 8260B
Bromobenzene	50.0	51.3	ug/kg	103	SW846 8260B
1,1,2,2-Tetrachloroethane	50.0	58.1	ug/kg	116	SW846 8260B
n-Propylbenzene	50.0	47.7	ug/kg	95	SW846 8260B
1,2,3-Trichlorobenzene	50.0	48.8	ug/kg	98	SW846 8260B
2-Chlorotoluene	50.0	48.5	ug/kg	97	SW846 8260B
1,3,5-Trimethylbenzene	50.0	49.3	ug/kg	99	SW846 8260B
4-Chlorotoluene	50.0	48.4	ug/kg	97	SW846 8260B
tert-Butylbenzene	50.0	47.7	ug/kg	95	SW846 8260B
1,2,4-Trimethylbenzene	50.0	47.7	ug/kg	95	SW846 8260B
sec-Butylbenzene	50.0	46.3	ug/kg	93	SW846 8260B
1,3-Dichlorobenzene	50.0	48.0	ug/kg	96	SW846 8260B
p-Isopropyltoluene	50.0	45.7	ug/kg	91	SW846 8260B
1,4-Dichlorobenzene	50.0	47.5	ug/kg	95	SW846 8260B
n-Butylbenzene	50.0	44.2	ug/kg	88	SW846 8260B
.2-Dichlorobenzene	50.0	50.9	ug/kg	102	SW846 8260B
,2-Dibromo-3-chloro-propane	50.0	56.4	ug/kg	113	SW846 8260B
1,2,4-Trichlorobenzene	50.0	47.3	ug/kg	95	SW846 8260B
Hexachlorobutadiene	50.0	40.1	ug/kg	80	SW846 8260B
Naphthalene	50.0	55.2	ug/kg	110	SW846 8260B
1,2,3-Trichloropropane	50.0	57.4	ug/kg	115	SW846 8260B
Carbon disulfide	50.0	51.2	ug/kg	102	SW846 8260B
Acetone	100	100	ug/kg	100	SW846 8260B
1,2-Dichloroethene (total)	100	102	ug/kg	102	SW846 8260B
2-Butanone	100	101	ug/kg	101	SW846 8260B
cis-1,3-Dichloropropene	50.0	49.2	ug/kg	98	SW846 8260B
4-Methyl-2-pentanone	100	112	ug/kg	112	SW846 8260B
trans-1,3-Dichloropropene	50.0	53.4	ug/kg	107	SW846 8260B
2-Hexanone	100	111	ug/kg	111	SW846 8260B
Xylenes (total)	150	150	ug/kg	100	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(83 - 132)
1,2-Dichloroethane-d4	102	(68 - 138)

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: H9I040105 **Work Order #...:** D25T2102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I070000-182

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(80 - 146)
Bromofluorobenzene	103	(78 - 167)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: H9I040105 **Work Order #...:** D25T2102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I070000-182
Prep Date.....: 09/07/99 **Analysis Date..:** 09/07/99
Prep Batch #...: 9250182
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Dichlorodifluoromethane	103	(30 - 148)	SW846 8260B
Chloromethane	98	(45 - 130)	SW846 8260B
Vinyl chloride	101	(60 - 129)	SW846 8260B
Bromomethane	157	(45 - 170)	SW846 8260B
Chloroethane	117	(69 - 148)	SW846 8260B
Trichlorofluoromethane	105	(64 - 141)	SW846 8260B
1,1-Dichloroethene	**104**	**(67 - 139)**	**SW846 8260B**
Methylene chloride	96	(60 - 120)	SW846 8260B
trans-1,2-Dichloroethene	102	(77 - 135)	SW846 8260B
1,1-Dichloroethane	103	(78 - 124)	SW846 8260B
2,2-Dichloropropane	99	(71 - 130)	SW846 8260B
cis-1,2-Dichloroethene	102	(76 - 127)	SW846 8260B
Bromochloromethane	101	(77 - 130)	SW846 8260B
Chloroform	100	(77 - 128)	SW846 8260B
,1,1-Trichloroethane	100	(73 - 132)	SW846 8260B
arbon tetrachloride	99	(72 - 134)	SW846 8260B
1,1-Dichloropropene	100	(80 - 132)	SW846 8260B
Benzene	**101**	**(79 - 130)**	**SW846 8260B**
1,2-Dichloroethane	101	(71 - 134)	SW846 8260B
Trichloroethene	**99**	**(79 - 131)**	**SW846 8260B**
1,2-Dichloropropane	100	(78 - 121)	SW846 8260B
Dibromomethane	100	(76 - 129)	SW846 8260B
Bromodichloromethane	99	(74 - 130)	SW846 8260B
Toluene	**106**	**(80 - 127)**	**SW846 8260B**
1,1,2-Trichloroethane	108	(77 - 128)	SW846 8260B
Tetrachloroethene	103	(80 - 129)	SW846 8260B
1,3-Dichloropropane	111	(78 - 126)	SW846 8260B
Chlorodibromomethane	106	(75 - 130)	SW846 8260B
1,2-Dibromoethane	110	(75 - 127)	SW846 8260B
Chlorobenzene	**100**	**(79 - 127)**	**SW846 8260B**
Ethylbenzene	99	(80 - 127)	SW846 8260B
1,1,1,2-Tetrachloroethane	101	(75 - 129)	SW846 8260B
m-Xylene & p-Xylene	100	(80 - 129)	SW846 8260B
o-Xylene	101	(80 - 127)	SW846 8260B
Styrene	100	(77 - 129)	SW846 8260B

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: H9I040105 **Work Order #...:** D25T2102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I070000-182

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Bromoform	107	(67 - 137)	SW846 8260B
Isopropylbenzene	96	(78 - 131)	SW846 8260B
Bromobenzene	103	(77 - 120)	SW846 8260B
1,1,2,2-Tetrachloroethane	116	(74 - 129)	SW846 8260B
n-Propylbenzene	95	(75 - 128)	SW846 8260B
1,2,3-Trichlorobenzene	98	(54 - 144)	SW846 8260B
2-Chlorotoluene	97	(77 - 120)	SW846 8260B
1,3,5-Trimethylbenzene	99	(78 - 121)	SW846 8260B
4-Chlorotoluene	97	(79 - 121)	SW846 8260B
tert-Butylbenzene	95	(78 - 120)	SW846 8260B
1,2,4-Trimethylbenzene	95	(78 - 121)	SW846 8260B
sec-Butylbenzene	93	(73 - 122)	SW846 8260B
1,3-Dichlorobenzene	96	(80 - 120)	SW846 8260B
p-Isopropyltoluene	91	(74 - 120)	SW846 8260B
1,4-Dichlorobenzene	95	(77 - 120)	SW846 8260B
n-Butylbenzene	88	(68 - 129)	SW846 8260B
1,2-Dichlorobenzene	102	(80 - 120)	SW846 8260B
1,2-Dibromo-3-chloro-propane	113	(58 - 131)	SW846 8260B
1,2,4-Trichlorobenzene	95	(58 - 140)	SW846 8260B
Hexachlorobutadiene	80	(63 - 126)	SW846 8260B
Naphthalene	110	(40 - 141)	SW846 8260B
1,2,3-Trichloropropane	115	(69 - 129)	SW846 8260B
Carbon disulfide	102	(41 - 167)	SW846 8260B
Acetone	100	(47 - 134)	SW846 8260B
1,2-Dichloroethene (total)	102	(77 - 130)	SW846 8260B
2-Butanone	101	(61 - 138)	SW846 8260B
cis-1,3-Dichloropropene	98	(77 - 124)	SW846 8260B
4-Methyl-2-pentanone	112	(61 - 134)	SW846 8260B
trans-1,3-Dichloropropene	107	(70 - 124)	SW846 8260B
2-Hexanone	111	(50 - 128)	SW846 8260B
Xylenes (total)	100	(80 - 128)	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	105	(83 - 132)
1,2-Dichloroethane-d4	102	(68 - 138)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: H9I040105 **Work Order #...:** D25T2102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I070000-182

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Toluene-d8	108	(80 - 146)
Bromofluorobenzene	103	(78 - 167)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Sample Data Summary

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW302

GC/MS Semivolatiles

Lot-Sample #...: H9I040105-002 **Work Order #...:** D250F10U **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/05/99 **Analysis Date..:** 09/07/99
Prep Batch #...: 9248102
Dilution Factor: 1
% Moisture.....: 8.4 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	360	ug/kg
Acenaphthylene	ND	360	ug/kg
Anthracene	ND	360	ug/kg
Benz(a)anthracene	**1200**	**360**	**ug/kg**
Benzo(b)fluoranthene	**1200**	**360**	**ug/kg**
Benzo(k)fluoranthene	**1100**	**360**	**ug/kg**
Benzo(ghi)perylene	**690**	**360**	**ug/kg**
Benzo(a)pyrene	**1300**	**360**	**ug/kg**
bis(2-Chloroethoxy) methane	ND	360	ug/kg
bis(2-Chloroethyl)-ether	ND	360	ug/kg
bis(2-Chloroisopropyl) ether	ND	360	ug/kg
bis(2-Ethylhexyl) phthalate	ND	360	ug/kg
4-Bromophenyl phenyl ether	ND	360	ug/kg
Butyl benzyl phthalate	ND	360	ug/kg
4-Chloroaniline	ND	360	ug/kg
4-Chloro-3-methylphenol	ND	360	ug/kg
2-Chloronaphthalene	ND	360	ug/kg
2-Chlorophenol	ND	360	ug/kg
4-Chlorophenyl phenyl ether	ND	360	ug/kg
Chrysene	**1200**	**360**	**ug/kg**
Dibenz(a,h)anthracene	ND	360	ug/kg
Dibenzofuran	ND	360	ug/kg
Di-n-butyl phthalate	ND	360	ug/kg
1,2-Dichlorobenzene	ND	360	ug/kg
1,3-Dichlorobenzene	ND	360	ug/kg
1,4-Dichlorobenzene	ND	360	ug/kg
3,3'-Dichlorobenzidine	ND	1700	ug/kg
2,4-Dichlorophenol	ND	360	ug/kg
Diethyl phthalate	ND	360	ug/kg
2,4-Dimethylphenol	ND	360	ug/kg
Dimethyl phthalate	ND	360	ug/kg
4,6-Dinitro-2-methylphenol	ND	1700	ug/kg

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW302

GC/MS Semivolatiles

Lot-Sample #...: H9I040105-002 **Work Order #...:** D250F10U **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	1700	ug/kg
2,4-Dinitrotoluene	ND	360	ug/kg
2,6-Dinitrotoluene	ND	360	ug/kg
Di-n-octyl phthalate	ND	360	ug/kg
Fluoranthene	**2100**	**360**	**ug/kg**
Fluorene	ND	360	ug/kg
Hexachlorobenzene	ND	360	ug/kg
Hexachlorobutadiene	ND	360	ug/kg
Hexachlorocyclopenta-diene	ND	1700	ug/kg
Hexachloroethane	ND	360	ug/kg
Indeno(1,2,3-cd)pyrene	**870**	**360**	**ug/kg**
Isophorone	ND	360	ug/kg
2-Methylnaphthalene	ND	360	ug/kg
2-Methylphenol	ND	360	ug/kg
4-Methylphenol	ND	360	ug/kg
Naphthalene	ND	360	ug/kg
2-Nitroaniline	ND	1700	ug/kg
3-Nitroaniline	ND	1700	ug/kg
4-Nitroaniline	ND	1700	ug/kg
Nitrobenzene	ND	360	ug/kg
2-Nitrophenol	ND	360	ug/kg
4-Nitrophenol	ND	1700	ug/kg
N-Nitrosodiphenylamine	ND	360	ug/kg
N-Nitrosodi-n-propyl-amine	ND	360	ug/kg
Pentachlorophenol	ND	1700	ug/kg
Phenanthrene	**580**	**360**	**ug/kg**
Phenol	ND	360	ug/kg
Pyrene	**1900**	**360**	**ug/kg**
1,2,4-Trichlorobenzene	ND	360	ug/kg
2,4,5-Trichlorophenol	ND	360	ug/kg
2,4,6-Trichlorophenol	ND	360	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	61	(25 - 121)
Phenol-d5	58	(24 - 113)
Nitrobenzene-d5	58	(23 - 120)
2-Fluorobiphenyl	57	(30 - 115)
2,4,6-Tribromophenol	33	(19 - 122)
Terphenyl-d14	67	(20 - 138)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW303

GC/MS Semivolatiles

Lot-Sample #...: H9I040105-003 **Work Order #...:** D250G10U **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/05/99 **Analysis Date..:** 09/07/99
Prep Batch #...: 9248102
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	400	ug/kg
Acenaphthylene	**1100**	**400**	**ug/kg**
Anthracene	**1700**	**400**	**ug/kg**
Benz(a)anthracene	**4500**	**400**	**ug/kg**
Benzo(b)fluoranthene	**4300**	**400**	**ug/kg**
Benzo(k)fluoranthene	**3000**	**400**	**ug/kg**
Benzo(ghi)perylene	**2400**	**400**	**ug/kg**
Benzo(a)pyrene	**4200**	**400**	**ug/kg**
bis(2-Chloroethoxy) methane	ND	400	ug/kg
bis(2-Chloroethyl)-ether	ND	400	ug/kg
bis(2-Chloroisopropyl) ether	ND	400	ug/kg
bis(2-Ethylhexyl) phthalate	ND	400	ug/kg
4-Bromophenyl phenyl ether	ND	400	ug/kg
Butyl benzyl phthalate	ND	400	ug/kg
4-Chloroaniline	ND	400	ug/kg
4-Chloro-3-methylphenol	ND	400	ug/kg
2-Chloronaphthalene	ND	400	ug/kg
2-Chlorophenol	ND	400	ug/kg
4-Chlorophenyl phenyl ether	ND	400	ug/kg
Chrysene	**4000**	**400**	**ug/kg**
Dibenz(a,h)anthracene	**720**	**400**	**ug/kg**
Dibenzofuran	ND	400	ug/kg
Di-n-butyl phthalate	ND	400	ug/kg
1,2-Dichlorobenzene	ND	400	ug/kg
1,3-Dichlorobenzene	ND	400	ug/kg
1,4-Dichlorobenzene	ND	400	ug/kg
3,3'-Dichlorobenzidine	ND	1900	ug/kg
2,4-Dichlorophenol	ND	400	ug/kg
Diethyl phthalate	ND	400	ug/kg
2,4-Dimethylphenol	ND	400	ug/kg
Dimethyl phthalate	ND	400	ug/kg
4,6-Dinitro-2-methylphenol	ND	1900	ug/kg

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW303

GC/MS Semivolatiles

Lot-Sample #...: H9I040105-003 **Work Order #...:** D250G10U **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	1900	ug/kg
2,4-Dinitrotoluene	ND	400	ug/kg
2,6-Dinitrotoluene	ND	400	ug/kg
Di-n-octyl phthalate	ND	400	ug/kg
Fluoranthene	**7700 E**	**400**	**ug/kg**
Fluorene	**610**	**400**	**ug/kg**
Hexachlorobenzene	ND	400	ug/kg
Hexachlorobutadiene	ND	400	ug/kg
Hexachlorocyclopenta-diene	ND	1900	ug/kg
Hexachloroethane	ND	400	ug/kg
Indeno(1,2,3-cd)pyrene	**2900**	**400**	**ug/kg**
Isophorone	ND	400	ug/kg
2-Methylnaphthalene	ND	400	ug/kg
2-Methylphenol	ND	400	ug/kg
4-Methylphenol	ND	400	ug/kg
Naphthalene	ND	400	ug/kg
2-Nitroaniline	ND	1900	ug/kg
3-Nitroaniline	ND	1900	ug/kg
4-Nitroaniline	ND	1900	ug/kg
Nitrobenzene	ND	400	ug/kg
2-Nitrophenol	ND	400	ug/kg
4-Nitrophenol	ND	1900	ug/kg
N-Nitrosodiphenylamine	ND	400	ug/kg
N-Nitrosodi-n-propyl-amine	ND	400	ug/kg
Pentachlorophenol	ND	1900	ug/kg
Phenanthrene	**4400**	**400**	**ug/kg**
Phenol	ND	400	ug/kg
Pyrene	**7700 E**	**400**	**ug/kg**
1,2,4-Trichlorobenzene	ND	400	ug/kg
2,4,5-Trichlorophenol	ND	400	ug/kg
2,4,6-Trichlorophenol	ND	400	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	63	(25 - 121)
Phenol-d5	62	(24 - 113)
Nitrobenzene-d5	60	(23 - 120)
2-Fluorobiphenyl	59	(30 - 115)
2,4,6-Tribromophenol	50	(19 - 122)
Terphenyl-d14	71	(20 - 138)

OTE(S):

sults and reporting limits have been adjusted for dry weight.

E Estimated result. Result concentration exceeds the calibration range.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW303

GC/MS Semivolatiles

Lot-Sample #...:	H9I040105-003	**Work Order #...:**	D250G20U	**Matrix.....:**	SOLID
Date Sampled...:	09/02/99	**Date Received..:**	09/04/99		
Prep Date.....:	09/05/99	**Analysis Date..:**	09/07/99		
Prep Batch #...:	9248102				
Dilution Factor:	2				
% Moisture.....:	17	**Method.....:**	SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Fluoranthene	**8900 D**	**790**	**ug/kg**
Pyrene	**8200 D**	**790**	**ug/kg**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	60 DIL	(25 - 121)
Phenol-d5	54 DIL	(24 - 113)
Nitrobenzene-d5	58 DIL	(23 - 120)
2-Fluorobiphenyl	54 DIL	(30 - 115)
2,4,6-Tribromophenol	27 DIL	(19 - 122)
Terphenyl-d14	67 DIL	(20 - 138)

NOTE(S):

L The concentration is estimated or not reported due to dilution or the presence of interfering analytes.

Results and reporting limits have been adjusted for dry weight.

D Result was obtained from the analysis of a dilution.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW301

GC/MS Semivolatiles

Lot-Sample #...: H9I040105-011 **Work Order #...:** D250W10T **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/05/99 **Analysis Date..:** 09/07/99
Prep Batch #...: 9248102
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	400	ug/kg
Acenaphthylene	ND	400	ug/kg
Anthracene	ND	400	ug/kg
Benz(a)anthracene	ND	400	ug/kg
Benzo(b)fluoranthene	ND	400	ug/kg
Benzo(k)fluoranthene	ND	400	ug/kg
Benzo(ghi)perylene	ND	400	ug/kg
Benzo(a)pyrene	ND	400	ug/kg
bis(2-Chloroethoxy) methane	ND	400	ug/kg
bis(2-Chloroethyl)-ether	ND	400	ug/kg
bis(2-Chloroisopropyl) ether	ND	400	ug/kg
bis(2-Ethylhexyl) phthalate	ND	400	ug/kg
4-Bromophenyl phenyl ether	ND	400	ug/kg
Butyl benzyl phthalate	ND	400	ug/kg
4-Chloroaniline	ND	400	ug/kg
4-Chloro-3-methylphenol	ND	400	ug/kg
2-Chloronaphthalene	ND	400	ug/kg
2-Chlorophenol	ND	400	ug/kg
4-Chlorophenyl phenyl ether	ND	400	ug/kg
Chrysene	ND	400	ug/kg
Dibenz(a,h)anthracene	ND	400	ug/kg
Dibenzofuran	ND	400	ug/kg
Di-n-butyl phthalate	ND	400	ug/kg
1,2-Dichlorobenzene	ND	400	ug/kg
1,3-Dichlorobenzene	ND	400	ug/kg
1,4-Dichlorobenzene	ND	400	ug/kg
3,3'-Dichlorobenzidine	ND	1900	ug/kg
2,4-Dichlorophenol	ND	400	ug/kg
Diethyl phthalate	ND	400	ug/kg
2,4-Dimethylphenol	ND	400	ug/kg
Dimethyl phthalate	ND	400	ug/kg
4,6-Dinitro-2-methylphenol	ND	1900	ug/kg

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW301

GC/MS Semivolatiles

Lot-Sample #...: H9I040105-011 **Work Order #...:** D250W10T **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	1900	ug/kg
2,4-Dinitrotoluene	ND	400	ug/kg
2,6-Dinitrotoluene	ND	400	ug/kg
Di-n-octyl phthalate	ND	400	ug/kg
Fluoranthene	ND	400	ug/kg
Fluorene	ND	400	ug/kg
Hexachlorobenzene	ND	400	ug/kg
Hexachlorobutadiene	ND	400	ug/kg
Hexachlorocyclopenta-diene	ND	1900	ug/kg
Hexachloroethane	ND	400	ug/kg
Indeno(1,2,3-cd)pyrene	ND	400	ug/kg
Isophorone	ND	400	ug/kg
2-Methylnaphthalene	ND	400	ug/kg
2-Methylphenol	ND	400	ug/kg
4-Methylphenol	ND	400	ug/kg
Naphthalene	ND	400	ug/kg
2-Nitroaniline	ND	1900	ug/kg
3-Nitroaniline	ND	1900	ug/kg
4-Nitroaniline	ND	1900	ug/kg
Nitrobenzene	ND	400	ug/kg
2-Nitrophenol	ND	400	ug/kg
4-Nitrophenol	ND	1900	ug/kg
N-Nitrosodiphenylamine	ND	400	ug/kg
N-Nitrosodi-n-propyl-amine	ND	400	ug/kg
Pentachlorophenol	ND	1900	ug/kg
Phenanthrene	ND	400	ug/kg
Phenol	ND	400	ug/kg
Pyrene	ND	400	ug/kg
1,2,4-Trichlorobenzene	ND	400	ug/kg
2,4,5-Trichlorophenol	ND	400	ug/kg
2,4,6-Trichlorophenol	ND	400	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	76	(25 - 121)
Phenol-d5	73	(24 - 113)
Nitrobenzene-d5	76	(23 - 120)
2-Fluorobiphenyl	75	(30 - 115)
2,4,6-Tribromophenol	27	(19 - 122)
Terphenyl-d14	86	(20 - 138)

NOTE(S):

lts and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW302

GC/MS Semivolatiles

Lot-Sample #...: H9I040105-012 **Work Order #...:** D250X10T **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/05/99 **Analysis Date..:** 09/07/99
Prep Batch #...: 9248102
Dilution Factor: 1
% Moisture.....: 21 **Method.....:** SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Acenaphthene	ND	420	ug/kg
Acenaphthylene	ND	420	ug/kg
Anthracene	ND	420	ug/kg
Benz(a)anthracene	ND	420	ug/kg
Benzo(b)fluoranthene	ND	420	ug/kg
Benzo(k)fluoranthene	ND	420	ug/kg
Benzo(ghi)perylene	ND	420	ug/kg
Benzo(a)pyrene	ND	420	ug/kg
bis(2-Chloroethoxy) methane	ND	420	ug/kg
bis(2-Chloroethyl)-ether	ND	420	ug/kg
bis(2-Chloroisopropyl) ether	ND	420	ug/kg
bis(2-Ethylhexyl) phthalate	ND	420	ug/kg
4-Bromophenyl phenyl ether	ND	420	ug/kg
Butyl benzyl phthalate	ND	420	ug/kg
4-Chloroaniline	ND	420	ug/kg
4-Chloro-3-methylphenol	ND	420	ug/kg
2-Chloronaphthalene	ND	420	ug/kg
2-Chlorophenol	ND	420	ug/kg
4-Chlorophenyl phenyl ether	ND	420	ug/kg
Chrysene	ND	420	ug/kg
Dibenz(a,h)anthracene	ND	420	ug/kg
Dibenzofuran	ND	420	ug/kg
Di-n-butyl phthalate	ND	420	ug/kg
1,2-Dichlorobenzene	ND	420	ug/kg
1,3-Dichlorobenzene	ND	420	ug/kg
1,4-Dichlorobenzene	ND	420	ug/kg
3,3'-Dichlorobenzidine	ND	2000	ug/kg
2,4-Dichlorophenol	ND	420	ug/kg
Diethyl phthalate	ND	420	ug/kg
2,4-Dimethylphenol	ND	420	ug/kg
Dimethyl phthalate	ND	420	ug/kg
4,6-Dinitro-2-methylphenol	ND	2000	ug/kg

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW302

GC/MS Semivolatiles

Lot-Sample #...: H9I040105-012 **Work Order #...:** D250X10T **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS
2,4-Dinitrophenol	ND	2000	ug/kg
2,4-Dinitrotoluene	ND	420	ug/kg
2,6-Dinitrotoluene	ND	420	ug/kg
Di-n-octyl phthalate	ND	420	ug/kg
Fluoranthene	ND	420	ug/kg
Fluorene	ND	420	ug/kg
Hexachlorobenzene	ND	420	ug/kg
Hexachlorobutadiene	ND	420	ug/kg
Hexachlorocyclopenta-diene	ND	2000	ug/kg
Hexachloroethane	ND	420	ug/kg
Indeno(1,2,3-cd)pyrene	ND	420	ug/kg
Isophorone	ND	420	ug/kg
2-Methylnaphthalene	ND	420	ug/kg
2-Methylphenol	ND	420	ug/kg
4-Methylphenol	ND	420	ug/kg
Naphthalene	ND	420	ug/kg
2-Nitroaniline	ND	2000	ug/kg
-Nitroaniline	ND	2000	ug/kg
4-Nitroaniline	ND	2000	ug/kg
Nitrobenzene	ND	420	ug/kg
2-Nitrophenol	ND	420	ug/kg
4-Nitrophenol	ND	2000	ug/kg
N-Nitrosodiphenylamine	ND	420	ug/kg
N-Nitrosodi-n-propyl-amine	ND	420	ug/kg
Pentachlorophenol	ND	2000	ug/kg
Phenanthrene	ND	420	ug/kg
Phenol	ND	420	ug/kg
Pyrene	ND	420	ug/kg
1,2,4-Trichlorobenzene	ND	420	ug/kg
2,4,5-Trichlorophenol	ND	420	ug/kg
2,4,6-Trichlorophenol	ND	420	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	59	(25 - 121)
Phenol-d5	58	(24 - 113)
Nitrobenzene-d5	59	(23 - 120)
2-Fluorobiphenyl	57	(30 - 115)
2,4,6-Tribromophenol	25	(19 - 122)
Terphenyl-d14	68	(20 - 138)

NOTE(S):

ults and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: H9I040105 **Work Order #...:** D25J2101 **Matrix.....:** SOLID
MB Lot-Sample #: H9I050000-102

Prep Date.....: 09/05/99
Analysis Date..: 09/07/99 **Prep Batch #...:** 9248102
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Acenaphthene	ND	330	ug/kg	SW846 8270C
Acenaphthylene	ND	330	ug/kg	SW846 8270C
Anthracene	ND	330	ug/kg	SW846 8270C
Benz(a)anthracene	ND	330	ug/kg	SW846 8270C
Benzo(b)fluoranthene	ND	330	ug/kg	SW846 8270C
Benzo(k)fluoranthene	ND	330	ug/kg	SW846 8270C
Benzo(ghi)perylene	ND	330	ug/kg	SW846 8270C
Benzo(a)pyrene	ND	330	ug/kg	SW846 8270C
bis(2-Chloroethoxy) methane	ND	330	ug/kg	SW846 8270C
bis(2-Chloroethyl)- ether	ND	330	ug/kg	SW846 8270C
bis(2-Chloroisopropyl) ether	ND	330	ug/kg	SW846 8270C
s(2-Ethylhexyl) phthalate	ND	330	ug/kg	SW846 8270C
4-Bromophenyl phenyl ether	ND	330	ug/kg	SW846 8270C
Butyl benzyl phthalate	ND	330	ug/kg	SW846 8270C
4-Chloroaniline	ND	330	ug/kg	SW846 8270C
4-Chloro-3-methylphenol	ND	330	ug/kg	SW846 8270C
2-Chloronaphthalene	ND	330	ug/kg	SW846 8270C
2-Chlorophenol	ND	330	ug/kg	SW846 8270C
4-Chlorophenyl phenyl ether	ND	330	ug/kg	SW846 8270C
Chrysene	ND	330	ug/kg	SW846 8270C
Dibenz(a,h)anthracene	ND	330	ug/kg	SW846 8270C
Dibenzofuran	ND	330	ug/kg	SW846 8270C
Di-n-butyl phthalate	ND	330	ug/kg	SW846 8270C
1,2-Dichlorobenzene	ND	330	ug/kg	SW846 8270C
1,3-Dichlorobenzene	ND	330	ug/kg	SW846 8270C
1,4-Dichlorobenzene	ND	330	ug/kg	SW846 8270C
3,3'-Dichlorobenzidine	ND	1600	ug/kg	SW846 8270C
2,4-Dichlorophenol	ND	330	ug/kg	SW846 8270C
Diethyl phthalate	ND	330	ug/kg	SW846 8270C
2,4-Dimethylphenol	ND	330	ug/kg	SW846 8270C
Dimethyl phthalate	ND	330	ug/kg	SW846 8270C
4,6-Dinitro- 2-methylphenol	ND	1600	ug/kg	SW846 8270C
2 4-Dinitrophenol	ND	1600	ug/kg	SW846 8270C
-Dinitrotoluene	ND	330	ug/kg	SW846 8270C

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METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: H9I040105 **Work Order #...:** D25J2101 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
2,6-Dinitrotoluene	ND	330	ug/kg	SW846 8270C
Di-n-octyl phthalate	ND	330	ug/kg	SW846 8270C
Fluoranthene	ND	330	ug/kg	SW846 8270C
Fluorene	ND	330	ug/kg	SW846 8270C
Hexachlorobenzene	ND	330	ug/kg	SW846 8270C
Hexachlorobutadiene	ND	330	ug/kg	SW846 8270C
Hexachlorocyclopenta-diene	ND	1600	ug/kg	SW846 8270C
Hexachloroethane	ND	330	ug/kg	SW846 8270C
Indeno(1,2,3-cd)pyrene	ND	330	ug/kg	SW846 8270C
Isophorone	ND	330	ug/kg	SW846 8270C
2-Methylnaphthalene	ND	330	ug/kg	SW846 8270C
2-Methylphenol	ND	330	ug/kg	SW846 8270C
4-Methylphenol	ND	330	ug/kg	SW846 8270C
Naphthalene	ND	330	ug/kg	SW846 8270C
2-Nitroaniline	ND	1600	ug/kg	SW846 8270C
3-Nitroaniline	ND	1600	ug/kg	SW846 8270C
4-Nitroaniline	ND	1600	ug/kg	SW846 8270C
trobenzene	ND	330	ug/kg	SW846 8270C
Nitrophenol	ND	330	ug/kg	SW846 8270C
4-Nitrophenol	ND	1600	ug/kg	SW846 8270C
N-Nitrosodiphenylamine	ND	330	ug/kg	SW846 8270C
N-Nitrosodi-n-propyl-amine	ND	330	ug/kg	SW846 8270C
Pentachlorophenol	ND	1600	ug/kg	SW846 8270C
Phenanthrene	ND	330	ug/kg	SW846 8270C
Phenol	ND	330	ug/kg	SW846 8270C
Pyrene	ND	330	ug/kg	SW846 8270C
1,2,4-Trichlorobenzene	ND	330	ug/kg	SW846 8270C
2,4,5-Trichlorophenol	ND	330	ug/kg	SW846 8270C
2,4,6-Trichlorophenol	ND	330	ug/kg	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	94	(25 - 121)
Phenol-d5	90	(24 - 113)
Nitrobenzene-d5	96	(23 - 120)
2-Fluorobiphenyl	95	(30 - 115)
2,4,6-Tribromophenol	65	(19 - 122)
Terphenyl-d14	102	(20 - 138)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: H9I040105 **Work Order #...:** D25J2102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I050000-102
Prep Date.....: 09/05/99 **Analysis Date..:** 09/07/99
Prep Batch #...: 9248102
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Phenol	**3330**	**2720**	**ug/kg**	**82**	**SW846 8270C**
bis(2-Chloroethyl)-ether	3330	2840	ug/kg	85	SW846 8270C
2-Chlorophenol	**3330**	**2900**	**ug/kg**	**87**	**SW846 8270C**
1,3-Dichlorobenzene	3330	2650	ug/kg	80	SW846 8270C
1,4-Dichlorobenzene	**3330**	**2640**	**ug/kg**	**79**	**SW846 8270C**
1,2-Dichlorobenzene	3330	2670	ug/kg	80	SW846 8270C
2-Methylphenol	3330	2790	ug/kg	84	SW846 8270C
bis(2-Chloroisopropyl) ether	3330	1370	ug/kg	41	SW846 8270C
4-Methylphenol	6660	5780	ug/kg	87	SW846 8270C
N-Nitrosodi-n-propyl-amine	**3330**	**2730**	**ug/kg**	**82**	**SW846 8270C**
Hexachloroethane	3330	2630	ug/kg	79	SW846 8270C
itrobenzene	3330	2960	ug/kg	89	SW846 8270C
sophorone	3330	2720	ug/kg	82	SW846 8270C
2-Nitrophenol	3330	3000	ug/kg	90	SW846 8270C
2,4-Dimethylphenol	3330	2100	ug/kg	63	SW846 8270C
bis(2-Chloroethoxy) methane	3330	2810	ug/kg	84	SW846 8270C
2,4-Dichlorophenol	3330	2890	ug/kg	87	SW846 8270C
1,2,4-Trichlorobenzene	**3330**	**2900**	**ug/kg**	**87**	**SW846 8270C**
Naphthalene	3330	2850	ug/kg	86	SW846 8270C
4-Chloroaniline	3330	1140	ug/kg	34	SW846 8270C
Hexachlorobutadiene	3330	2930	ug/kg	88	SW846 8270C
4-Chloro-3-methylphenol	**3330**	**2920**	**ug/kg**	**88**	**SW846 8270C**
2-Methylnaphthalene	3330	3240	ug/kg	97	SW846 8270C
Hexachlorocyclopenta-diene	3330	2720	ug/kg	82	SW846 8270C
2,4,6-Trichlorophenol	3330	2800	ug/kg	84	SW846 8270C
2,4,5-Trichlorophenol	3330	2920	ug/kg	88	SW846 8270C
2-Chloronaphthalene	3330	2880	ug/kg	86	SW846 8270C
2-Nitroaniline	3330	2860	ug/kg	86	SW846 8270C
Dimethyl phthalate	3330	2850	ug/kg	86	SW846 8270C
Acenaphthylene	3330	2830	ug/kg	85	SW846 8270C

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: H9I040105 **Work Order #...:** D25J2102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I050000-102

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
2,6-Dinitrotoluene	3330	3080	ug/kg	92	SW846 8270C
3-Nitroaniline	3330	2040	ug/kg	61	SW846 8270C
Acenaphthene	**3330**	**2860**	**ug/kg**	**86**	**SW846 8270C**
2,4-Dinitrophenol	3330	2540	ug/kg	76	SW846 8270C
4-Nitrophenol	**3330**	**1610**	**ug/kg**	**48**	**SW846 8270C**
Dibenzofuran	3330	2810	ug/kg	84	SW846 8270C
2,4-Dinitrotoluene	**3330**	**2910**	**ug/kg**	**87**	**SW846 8270C**
Diethyl phthalate	3330	2880	ug/kg	86	SW846 8270C
4-Chlorophenyl phenyl ether	3330	2890	ug/kg	87	SW846 8270C
Fluorene	3330	2880	ug/kg	86	SW846 8270C
4-Nitroaniline	3330	2370	ug/kg	71	SW846 8270C
4,6-Dinitro-2-methylphenol	3330	2780	ug/kg	83	SW846 8270C
N-Nitrosodiphenylamine	3330	2840	ug/kg	85	SW846 8270C
Pentachlorophenol	**3330**	**2160**	**ug/kg**	**65**	**SW846 8270C**
Phenanthrene	3330	2890	ug/kg	87	SW846 8270C
Anthracene	3330	2950	ug/kg	89	SW846 8270C
4-Bromophenyl phenyl ether	3330	3370	ug/kg	101	SW846 8270C
Hexachlorobenzene	3330	2910	ug/kg	87	SW846 8270C
Di-n-butyl phthalate	3330	2900	ug/kg	87	SW846 8270C
Fluoranthene	3330	2800	ug/kg	84	SW846 8270C
Pyrene	**3330**	**2970**	**ug/kg**	**89**	**SW846 8270C**
Butyl benzyl phthalate	3330	2920	ug/kg	88	SW846 8270C
3,3'-Dichlorobenzidine	3330		ug/kg	46	SW846 8270C
Benz(a)anthracene	3330	2850	ug/kg	86	SW846 8270C
Chrysene	3330	2810	ug/kg	84	SW846 8270C
bis(2-Ethylhexyl) phthalate	3330	3000	ug/kg	90	SW846 8270C
Di-n-octyl phthalate	3330	3080	ug/kg	92	SW846 8270C
Benzo(b)fluoranthene	3330	2600	ug/kg	78	SW846 8270C
Benzo(k)fluoranthene	3330	2840	ug/kg	85	SW846 8270C
Benzo(a)pyrene	3330	2680	ug/kg	80	SW846 8270C
Indeno(1,2,3-cd)pyrene	3330	2470	ug/kg	74	SW846 8270C
Dibenz(a,h)anthracene	3330	2500	ug/kg	75	SW846 8270C
Benzo(ghi)perylene	3330	2420	ug/kg	73	SW846 8270C
N-Nitrosodimethylamine	3330	2390	ug/kg	72	SW846 8270C

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LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: H9I040105 **Work Order #...:** D25J2102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I050000-102

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Pyridine	3330	1740	ug/kg	52	SW846 8270C
Aniline	3330	1880	ug/kg	56	SW846 8270C
Benzyl alcohol	3330		ug/kg	1.8	SW846 8270C
Benzoic acid	3330	2770	ug/kg	83	SW846 8270C
1,2-Diphenylhydrazine	3330	3000	ug/kg	90	SW846 8270C
Carbazole	3330	2750	ug/kg	83	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	91	(25 - 106)
Phenol-d5	89	(28 - 111)
Nitrobenzene-d5	92	(25 - 114)
2-Fluorobiphenyl	88	(33 - 106)
2,4,6-Tribromophenol	84	(23 - 124)
Terphenyl-d14	90	(31 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: H9I040105 **Work Order #...:** D25J2102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I050000-102
Prep Date.....: 09/05/99 **Analysis Date..:** 09/07/99
Prep Batch #...: 9248102
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Phenol	**82**	**(50 - 103)**	**SW846 8270C**
bis(2-Chloroethyl)-ether	85	(47 - 102)	SW846 8270C
2-Chlorophenol	**87**	**(54 - 101)**	**SW846 8270C**
1,3-Dichlorobenzene	80	(49 - 93)	SW846 8270C
1,4-Dichlorobenzene	**79**	**(48 - 95)**	**SW846 8270C**
1,2-Dichlorobenzene	80	(49 - 95)	SW846 8270C
2-Methylphenol	84	(50 - 100)	SW846 8270C
bis(2-Chloroisopropyl) ether	41	(15 - 106)	SW846 8270C
4-Methylphenol	87	(48 - 109)	SW846 8270C
N-Nitrosodi-n-propyl-amine	**82**	**(40 - 103)**	**SW846 8270C**
Hexachloroethane	79	(38 - 99)	SW846 8270C
itrobenzene	89	(44 - 98)	SW846 8270C
sophorone	82	(46 - 98)	SW846 8270C
2-Nitrophenol	90	(55 - 98)	SW846 8270C
2,4-Dimethylphenol	63	(25 - 92)	SW846 8270C
bis(2-Chloroethoxy) methane	84	(45 - 96)	SW846 8270C
2,4-Dichlorophenol	87	(56 - 100)	SW846 8270C
1,2,4-Trichlorobenzene	**87**	**(54 - 104)**	**SW846 8270C**
Naphthalene	86	(54 - 96)	SW846 8270C
4-Chloroaniline	34	(15 - 66)	SW846 8270C
Hexachlorobutadiene	88	(50 - 98)	SW846 8270C
4-Chloro-3-methylphenol	**88**	**(51 - 106)**	**SW846 8270C**
2-Methylnaphthalene	97	(48 - 108)	SW846 8270C
Hexachlorocyclopenta-diene	82	(15 - 150)	SW846 8270C
2,4,6-Trichlorophenol	84	(55 - 102)	SW846 8270C
2,4,5-Trichlorophenol	88	(58 - 102)	SW846 8270C
2-Chloronaphthalene	86	(54 - 100)	SW846 8270C
2-Nitroaniline	86	(43 - 108)	SW846 8270C
Dimethyl phthalate	86	(55 - 103)	SW846 8270C
Acenaphthylene	85	(51 - 100)	SW846 8270C

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: H9I040105 **Work Order #...:** D25J2102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I050000-102

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
2,6-Dinitrotoluene	92	(55 - 105)	SW846 8270C
3-Nitroaniline	61	(30 - 93)	SW846 8270C
Acenaphthene	**86**	**(54 - 104)**	**SW846 8270C**
2,4-Dinitrophenol	76	(19 - 138)	SW846 8270C
4-Nitrophenol	**48**	**(31 - 124)**	**SW846 8270C**
Dibenzofuran	84	(55 - 102)	SW846 8270C
2,4-Dinitrotoluene	**87**	**(52 - 115)**	**SW846 8270C**
Diethyl phthalate	86	(51 - 106)	SW846 8270C
4-Chlorophenyl phenyl ether	87	(55 - 105)	SW846 8270C
Fluorene	86	(53 - 107)	SW846 8270C
4-Nitroaniline	71	(29 - 129)	SW846 8270C
4,6-Dinitro-2-methylphenol	83	(31 - 114)	SW846 8270C
N-Nitrosodiphenylamine	85	(49 - 109)	SW846 8270C
Pentachlorophenol	**65**	**(45 - 110)**	**SW846 8270C**
Phenanthrene	87	(52 - 109)	SW846 8270C
Anthracene	89	(52 - 106)	SW846 8270C
4-Bromophenyl phenyl ether	101	(59 - 120)	SW846 8270C
Hexachlorobenzene	87	(50 - 113)	SW846 8270C
Di-n-butyl phthalate	87	(49 - 105)	SW846 8270C
Fluoranthene	84	(54 - 106)	SW846 8270C
Pyrene	**89**	**(48 - 111)**	**SW846 8270C**
Butyl benzyl phthalate	88	(38 - 108)	SW846 8270C
3,3'-Dichlorobenzidine	46	(15 - 100)	SW846 8270C
Benz(a)anthracene	86	(45 - 116)	SW846 8270C
Chrysene	84	(51 - 105)	SW846 8270C
bis(2-Ethylhexyl) phthalate	90	(41 - 113)	SW846 8270C
Di-n-octyl phthalate	92	(35 - 120)	SW846 8270C
Benzo(b)fluoranthene	78	(38 - 136)	SW846 8270C
Benzo(k)fluoranthene	85	(32 - 125)	SW846 8270C
Benzo(a)pyrene	80	(45 - 113)	SW846 8270C
Indeno(1,2,3-cd)pyrene	74	(31 - 123)	SW846 8270C
Dibenz(a,h)anthracene	75	(34 - 122)	SW846 8270C
Benzo(ghi)perylene	73	(28 - 123)	SW846 8270C
N-Nitrosodimethylamine	72	(37 - 88)	SW846 8270C

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: H9I040105 **Work Order #...:** D25J2102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I050000-102

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Pyridine	52	(15 - 76)	SW846 8270C
Aniline	56	(15 - 109)	SW846 8270C
Benzyl alcohol	1.8	(42 - 104)	SW846 8270C
Benzoic acid	83	(27 - 127)	SW846 8270C
1,2-Diphenylhydrazine	90	(42 - 116)	SW846 8270C
Carbazole	83	(23 - 150)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	91	(25 - 106)
Phenol-d5	89	(28 - 111)
Nitrobenzene-d5	92	(25 - 114)
2-Fluorobiphenyl	88	(33 - 106)
2,4,6-Tribromophenol	84	(23 - 124)
Terphenyl-d14	90	(31 - 118)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Results and reporting limits have been adjusted for dry weight.

Sample Data Summary

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW302

GC Semivolatiles

Lot-Sample #...: H9I040105-002 **Work Order #...:** D250F102 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/05/99 **Analysis Date..:** 09/08/99
Prep Batch #...: 9248101
Dilution Factor: 5
% Moisture.....: 8.4 **Method.....:** SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	180	ug/kg
Aroclor 1221	ND	180	ug/kg
Aroclor 1232	ND	180	ug/kg
Aroclor 1242	ND	180	ug/kg
Aroclor 1248	ND	180	ug/kg
Aroclor 1254	**1000 AP**	**180**	**ug/kg**
Aroclor 1260	ND G	460	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	46	(40 - 134)
Decachlorobiphenyl	219 *	(38 - 174)

NOTE(S):

* Surrogate recovery is outside stated control limits.

Results and reporting limits have been adjusted for dry weight.

AP Altered Pattern

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW303

GC Semivolatiles

Lot-Sample #...: H9I040105-003 **Work Order #...:** D250G102 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/05/99 **Analysis Date..:** 09/08/99
Prep Batch #...: 9248101
Dilution Factor: 2
% Moisture.....: 17 **Method.....:** SW846 8082

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Aroclor 1016	ND	79	ug/kg
Aroclor 1221	ND	79	ug/kg
Aroclor 1232	ND	79	ug/kg
Aroclor 1242	ND	79	ug/kg
Aroclor 1248	ND	79	ug/kg
Aroclor 1254	**250 AP**	**79**	**ug/kg**
Aroclor 1260	ND G	230	ug/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	57	(40 - 134)
Decachlorobiphenyl	127	(38 - 174)

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

AP Altered Pattern

G Elevated reporting limit. The reporting limit is elevated due to matrix interference.

METHOD BLANK REPORT

GC Semivolatiles

Client Lot #...: H9I040105 **Work Order #...:** D25J1101 **Matrix.....:** SOLID
MB Lot-Sample #: H9I050000-101

Prep Date.....: 09/05/99
Analysis Date..: 09/08/99 **Prep Batch #...:** 9248101
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Aroclor 1016	ND	33	ug/kg	SW846 8082
Aroclor 1221	ND	33	ug/kg	SW846 8082
Aroclor 1232	ND	33	ug/kg	SW846 8082
Aroclor 1242	ND	33	ug/kg	SW846 8082
Aroclor 1248	ND	33	ug/kg	SW846 8082
Aroclor 1254	ND	33	ug/kg	SW846 8082
Aroclor 1260	ND	84	ug/kg	SW846 8082

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Tetrachloro-m-xylene	79	(40 - 134)
Decachlorobiphenyl	114	(38 - 174)

OTE(S):

culations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

GC Semivolatiles

Client Lot #...: H9I040105 **Work Order #...:** D25J1102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I050000-101
Prep Date.....: 09/05/99 **Analysis Date..:** 09/08/99
Prep Batch #...: 9248101
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Aroclor 1016	**333**	**301**	**ug/kg**	**91**	**SW846 8082**
Aroclor 1260	**333**	**318**	**ug/kg**	**96**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	120	(38 - 174)
Tetrachloro-m-xylene	79	(40 - 134)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC Semivolatiles

Client Lot #...: H9I040105 **Work Order #...:** D25J1102 **Matrix.....:** SOLID
LCS Lot-Sample#: H9I050000-101
Prep Date.....: 09/05/99 **Analysis Date..:** 09/08/99
Prep Batch #...: 9248101
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Aroclor 1016	**91**	**(52 - 144)**	**SW846 8082**
Aroclor 1260	**96**	**(45 - 143)**	**SW846 8082**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Decachlorobiphenyl	120	(38 - 174)
Tetrachloro-m-xylene	79	(40 - 134)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

Sample Data Summary

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW301

HPLC

Lot-Sample #...: H9I040105-001 **Work Order #...:** D250E10U **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/08/99 **Analysis Date..:** 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1
% Moisture.....: 13 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
Nitrotoluene	ND	0.25	mg/kg
Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	96	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW302

HPLC

Lot-Sample #...: H9I040105-002 **Work Order #...:** D250F10W **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/08/99 **Analysis Date..:** 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1
% Moisture.....: 8.4 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
Nitrotoluene	ND	0.25	mg/kg
Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	92	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW303

HPLC

Lot-Sample #...: H9I040105-003 **Work Order #...:** D250G10W **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/08/99 **Analysis Date..:** 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
-Nitrotoluene	ND	0.25	mg/kg
-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	92	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW304

HPLC

Lot-Sample #...: H9I040105-004 **Work Order #...:** D250H10T **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/08/99 **Analysis Date..:** 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1
% Moisture.....: 11 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
-Nitrotoluene	ND	0.25	mg/kg
-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	91	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW305

HPLC

Lot-Sample #...: H9I040105-005 **Work Order #...:** D250K10T **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/08/99 **Analysis Date..:** 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1
% Moisture.....: 9.7 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
·Nitrotoluene	ND	0.25	mg/kg
..-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	98	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW306

HPLC

Lot-Sample #...: H9I040105-006 **Work Order #...:** D250L10T **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/08/99 **Analysis Date..:** 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1
% Moisture.....: 4.5 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	**0.88**	**0.25**	**mg/kg**
4-Amino-2,6-dinitrotoluene	**0.26**	**0.25**	**mg/kg**
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
-Nitrotoluene	ND	0.25	mg/kg
-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	96	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW307

HPLC

Lot-Sample #...: H9I040105-007 **Work Order #...:** D250N10T **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/08/99 **Analysis Date..:** 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1
% Moisture.....: 3.7 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	**0.33**	**0.25**	**mg/kg**
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
Nitrotoluene	ND	0.25	mg/kg
Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	91	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW308

HPLC

Lot-Sample #...: H9I040105-008 **Work Order #...:** D250P10T **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/08/99 **Analysis Date..:** 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1
% Moisture.....: 26 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
-Nitrotoluene	ND	0.25	mg/kg
-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	89	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW309

HPLC

Lot-Sample #...: H9I040105-009 **Work Order #...:** D250R10T **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/08/99 **Analysis Date..:** 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1
% Moisture.....: 15 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
-Nitrotoluene	ND	0.25	mg/kg
-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	90	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW310

HPLC

Lot-Sample #...: H9I040105-010 **Work Order #...:** D250T10T **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/08/99 **Analysis Date..:** 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1
% Moisture.....: 8.8 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
Nitrotoluene	ND	0.25	mg/kg
Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	89	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW301

HPLC

Lot-Sample #....: H9I040105-011 **Work Order #...:** D250W10U **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/08/99 **Analysis Date..:** 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1
% Moisture.....: 17 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
Nitrotoluene	ND	0.25	mg/kg
Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	85	(76 - 124)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW302

HPLC

Lot-Sample #...: H9I040105-012 **Work Order #...:** D250X10U **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
Prep Date.....: 09/08/99 **Analysis Date..:** 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1
% Moisture.....: 21 **Method.....:** SW846 8330

PARAMETER	RESULT	REPORTING LIMIT	UNITS
HMX	ND	0.50	mg/kg
RDX	ND	0.50	mg/kg
1,3,5-Trinitrobenzene	ND	0.25	mg/kg
1,3-Dinitrobenzene	ND	0.25	mg/kg
Tetryl	ND	0.65	mg/kg
Nitrobenzene	ND	0.25	mg/kg
2,4,6-Trinitrotoluene	ND	0.25	mg/kg
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg
2,6-Dinitrotoluene	ND	0.25	mg/kg
2,4-Dinitrotoluene	ND	0.25	mg/kg
·Nitrotoluene	ND	0.25	mg/kg
-Nitrotoluene	ND	0.25	mg/kg
3-Nitrotoluene	ND	0.25	mg/kg

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	88	(76 - 124)

METHOD BLANK REPORT

HPLC

Client Lot #...: H9I040105 **Work Order #...:** D26J9101 **Matrix.....:** SOLID
MB Lot-Sample #: H9I080000-135

Prep Date.....: 09/08/99
Analysis Date..: 09/09/99 **Prep Batch #...:** 9251135
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
HMX	ND	0.50	mg/kg	SW846 8330
RDX	ND	0.50	mg/kg	SW846 8330
1,3,5-Trinitrobenzene	ND	0.25	mg/kg	SW846 8330
1,3-Dinitrobenzene	ND	0.25	mg/kg	SW846 8330
Tetryl	ND	0.65	mg/kg	SW846 8330
Nitrobenzene	ND	0.25	mg/kg	SW846 8330
2,4,6-Trinitrotoluene	ND	0.25	mg/kg	SW846 8330
4-Amino-2,6-dinitrotoluene	ND	0.25	mg/kg	SW846 8330
2-Amino-4,6-dinitrotoluene	ND	0.25	mg/kg	SW846 8330
2,6-Dinitrotoluene	ND	0.25	mg/kg	SW846 8330
2,4-Dinitrotoluene	ND	0.25	mg/kg	SW846 8330
2-Nitrotoluene	ND	0.25	mg/kg	SW846 8330
Nitrotoluene	ND	0.25	mg/kg	SW846 8330
Nitrotoluene	ND	0.25	mg/kg	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	103	(76 - 124)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

HPLC

Client Lot #...: H9I040105 Work Order #...: D26J9102-LCS Matrix.....: SOLID
LCS Lot-Sample#: H9I080000-135 D26J9103-LCSD
Prep Date.....: 09/08/99 Analysis Date..: 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
HMX	3.00	2.43	mg/kg	81		SW846 8330
	3.00	2.47	mg/kg	82	1.7	SW846 8330
RDX	3.00	2.62	mg/kg	87		SW846 8330
	3.00	2.63	mg/kg	88	0.22	SW846 8330
1,3,5-Trinitrobenzene	3.00	2.68	mg/kg	89		SW846 8330
	3.00	2.70	mg/kg	90	0.55	SW846 8330
1,3-Dinitrobenzene	3.00	2.66	mg/kg	89		SW846 8330
	3.00	2.67	mg/kg	89	0.28	SW846 8330
Tetryl	3.00	2.66	mg/kg	89		SW846 8330
	3.00	2.66	mg/kg	89	0.12	SW846 8330
Nitrobenzene	3.00	2.71	mg/kg	90		SW846 8330
	3.00	2.70	mg/kg	90	0.28	SW846 8330
2,4,6-Trinitrotoluene	3.00	2.69	mg/kg	90		SW846 8330
	3.00	2.69	mg/kg	90	0.14	SW846 8330
-Amino-2,6-dinitrotoluene	3.00	2.57	mg/kg	86		SW846 8330
	3.00	2.56	mg/kg	85	0.48	SW846 8330
2-Amino-4,6-dinitrotoluene	3.00	2.70	mg/kg	90		SW846 8330
	3.00	2.70	mg/kg	90	0.17	SW846 8330
2,6-Dinitrotoluene	3.00	2.76	mg/kg	92		SW846 8330
	3.00	2.75	mg/kg	92	0.45	SW846 8330
2,4-Dinitrotoluene	3.00	2.69	mg/kg	90		SW846 8330
	3.00	2.70	mg/kg	90	0.37	SW846 8330
2-Nitrotoluene	3.00	2.68	mg/kg	89		SW846 8330
	3.00	2.66	mg/kg	89	0.93	SW846 8330
4-Nitrotoluene	3.00	2.68	mg/kg	89		SW846 8330
	3.00	2.68	mg/kg	89	0.15	SW846 8330
3-Nitrotoluene	3.00	2.65	mg/kg	88		SW846 8330
	3.00	2.69	mg/kg	90	1.6	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	92	(76 - 124)
	89	(76 - 124)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

print denotes control parameters

LABORATORY CONTROL SAMPLE EVALUATION REPORT

HPLC

Client Lot #...: H9I040105 Work Order #...: D26J9102-LCS Matrix.....: SOLID
LCS Lot-Sample#: H9I080000-135 D26J9103-LCSD
Prep Date.....: 09/08/99 Analysis Date...: 09/09/99
Prep Batch #...: 9251135
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
HMX	81	(77 - 122)			SW846 8330
	82	(77 - 122)	1.7	(0-17)	SW846 8330
RDX	87	(83 - 121)			SW846 8330
	88	(83 - 121)	0.22	(0-16)	SW846 8330
1,3,5-Trinitrobenzene	89	(81 - 120)			SW846 8330
	90	(81 - 120)	0.55	(0-15)	SW846 8330
1,3-Dinitrobenzene	89	(82 - 117)			SW846 8330
	89	(82 - 117)	0.28	(0-15)	SW846 8330
Tetryl	89	(51 - 120)			SW846 8330
	89	(51 - 120)	0.12	(0-20)	SW846 8330
Nitrobenzene	90	(83 - 117)			SW846 8330
	90	(83 - 117)	0.28	(0-15)	SW846 8330
2,4,6-Trinitrotoluene	90	(74 - 126)			SW846 8330
	90	(74 - 126)	0.14	(0-15)	SW846 8330
-Amino-2,6-dinitrotoluene	86	(81 - 123)			SW846 8330
	85	(81 - 123)	0.48	(0-15)	SW846 8330
2-Amino-4,6-dinitrotoluene	90	(80 - 121)			SW846 8330
	90	(80 - 121)	0.17	(0-16)	SW846 8330
2,6-Dinitrotoluene	92	(82 - 121)			SW846 8330
	92	(82 - 121)	0.45	(0-15)	SW846 8330
2,4-Dinitrotoluene	90	(81 - 120)			SW846 8330
	90	(81 - 120)	0.37	(0-15)	SW846 8330
2-Nitrotoluene	89	(81 - 117)			SW846 8330
	89	(81 - 117)	0.93	(0-15)	SW846 8330
4-Nitrotoluene	89	(81 - 117)			SW846 8330
	89	(81 - 117)	0.15	(0-15)	SW846 8330
3-Nitrotoluene	88	(80 - 118)			SW846 8330
	90	(80 - 118)	1.6	(0-15)	SW846 8330

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
1-Chloro-3-nitrobenzene	92	(76 - 124)
	89	(76 - 124)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

int denotes control parameters

Sample Data Summary

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW301

TOTAL Metals

Lot-Sample #...: H9I040105-001 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 13

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9250282						
Mercury	**0.047**	**0.038**	**mg/kg**	**SW846 7471A**	**09/08-09/09/99**	**D250E10R**
		Dilution Factor: 1		Analysis Time..: 16:22		
Prep Batch #...: 9251106						
Aluminum	**8820**	**22.9**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250E102**
		Dilution Factor: 1		Analysis Time..: 14:11		
Arsenic	**7.1**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250E10M**
		Dilution Factor: 1		Analysis Time..: 14:11		
Lead	**11.6**	**0.34**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250E10N**
		Dilution Factor: 1		Analysis Time..: 14:11		
Antimony	ND	6.9	mg/kg	SW846 6010B	09/08-09/11/99	D250E103
		Dilution Factor: 1		Analysis Time..: 14:11		
Barium	**67.3**	**22.9**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250E104**
		Dilution Factor: 1		Analysis Time..: 14:11		
Selenium	**0.96**	**0.57**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250E10P**
		Dilution Factor: 1		Analysis Time..: 14:11		
Beryllium	**0.63**	**0.57**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250E105**
		Dilution Factor: 1		Analysis Time..: 14:11		
Thallium	**1.1**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250E10Q**
		Dilution Factor: 1		Analysis Time..: 14:11		
Cadmium	ND	0.57	mg/kg	SW846 6010B	09/08-09/11/99	D250E106
		Dilution Factor: 1		Analysis Time..: 14:11		
Calcium	**4250**	**573**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250E107**
		Dilution Factor: 1		Analysis Time..: 14:11		
Chromium	**13.2**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250E108**
		Dilution Factor: 1		Analysis Time..: 14:11		
Cobalt	**6.8**	**5.7**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250E109**
		Dilution Factor: 1		Analysis Time..: 14:11		
per	**13.9**	**2.9**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250E10A**
		Dilution Factor: 1		Analysis Time..: 14:11		

(Continued on next page)

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW301

TOTAL Metals

Lot-Sample #...: H9I040105-001 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	16300	11.5	mg/kg	SW846 6010B	09/08-09/11/99	D250E10C
		Dilution Factor: 1		Analysis Time..: 14:11		
Magnesium	2250	573	mg/kg	SW846 6010B	09/08-09/11/99	D250E10D
		Dilution Factor: 1		Analysis Time..: 14:11		
Manganese	346	1.7	mg/kg	SW846 6010B	09/08-09/11/99	D250E10E
		Dilution Factor: 1		Analysis Time..: 14:11		
Nickel	16.5	4.6	mg/kg	SW846 6010B	09/08-09/11/99	D250E10F
		Dilution Factor: 1		Analysis Time..: 14:11		
Potassium	746	573	mg/kg	SW846 6010B	09/08-09/11/99	D250E10G
		Dilution Factor: 1		Analysis Time..: 14:11		
Silver	ND	1.1	mg/kg	SW846 6010B	09/08-09/11/99	D250E10H
		Dilution Factor: 1		Analysis Time..: 14:11		
Sodium	ND	573	mg/kg	SW846 6010B	09/08-09/11/99	D250E10J
		Dilution Factor: 1		Analysis Time..: 14:11		
Vanadium	21.5	5.7	mg/kg	SW846 6010B	09/08-09/11/99	D250E10K
		Dilution Factor: 1		Analysis Time..: 14:11		
Zinc	47.9	2.3	mg/kg	SW846 6010B	09/08-09/11/99	D250E10L
		Dilution Factor: 1		Analysis Time..: 14:11		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW302

TOTAL Metals

Lot-Sample #...: H9I040105-002 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 8.4

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9250282						
Mercury	**0.11**	**0.036**	**mg/kg**	**SW846 7471A**	**09/08-09/09/99**	**D250F10T**
		Dilution Factor: 1		Analysis Time..: 16:34		
Prep Batch #...: 9251106						
Aluminum	**7860**	**21.8**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250F103**
		Dilution Factor: 1		Analysis Time..: 14:31		
Arsenic	**7.2**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250F10N**
		Dilution Factor: 1		Analysis Time..: 14:31		
Lead	**72.7**	**0.33**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250F10P**
		Dilution Factor: 1		Analysis Time..: 14:31		
Antimony	ND	6.6	mg/kg	SW846 6010B	09/08-09/11/99	D250F104
		Dilution Factor: 1		Analysis Time..: 14:31		
Barium	**62.5**	**21.8**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250F105**
		Dilution Factor: 1		Analysis Time..: 14:31		
Selenium	**0.60**	**0.55**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250F10Q**
		Dilution Factor: 1		Analysis Time..: 14:31		
Beryllium	ND	0.55	mg/kg	SW846 6010B	09/08-09/11/99	D250F106
		Dilution Factor: 1		Analysis Time..: 14:31		
Thallium	**1.1**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250F10R**
		Dilution Factor: 1		Analysis Time..: 14:31		
Cadmium	ND	0.55	mg/kg	SW846 6010B	09/08-09/11/99	D250F107
		Dilution Factor: 1		Analysis Time..: 14:31		
Calcium	**40000**	**546**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250F108**
		Dilution Factor: 1		Analysis Time..: 14:31		
Chromium	**14.9**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250F109**
		Dilution Factor: 1		Analysis Time..: 14:31		
Cobalt	**7.0**	**5.5**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250F10A**
		Dilution Factor: 1		Analysis Time..: 14:31		
per	**15.2**	**2.7**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250F10C**
		Dilution Factor: 1		Analysis Time..: 14:31		

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW302

TOTAL Metals

Lot-Sample #...: H9I040105-002 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	16200	10.9	mg/kg	SW846 6010B	09/08-09/11/99	D250F10D
		Dilution Factor: 1		Analysis Time..: 14:31		
Magnesium	8090	546	mg/kg	SW846 6010B	09/08-09/11/99	D250F10E
		Dilution Factor: 1		Analysis Time..: 14:31		
Manganese	324	1.6	mg/kg	SW846 6010B	09/08-09/11/99	D250F10F
		Dilution Factor: 1		Analysis Time..: 14:31		
Nickel	18.0	4.4	mg/kg	SW846 6010B	09/08-09/11/99	D250F10G
		Dilution Factor: 1		Analysis Time..: 14:31		
Potassium	936	546	mg/kg	SW846 6010B	09/08-09/11/99	D250F10H
		Dilution Factor: 1		Analysis Time..: 14:31		
Silver	ND	1.1	mg/kg	SW846 6010B	09/08-09/11/99	D250F10J
		Dilution Factor: 1		Analysis Time..: 14:31		
Sodium	ND	546	mg/kg	SW846 6010B	09/08-09/11/99	D250F10K
		Dilution Factor: 1		Analysis Time..: 14:31		
Vanadium	20.6	5.5	mg/kg	SW846 6010B	09/08-09/11/99	D250F10L
		Dilution Factor: 1		Analysis Time..: 14:31		
Zinc	105	2.2	mg/kg	SW846 6010B	09/08-09/11/99	D250F10M
		Dilution Factor: 1		Analysis Time..: 14:31		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW303

TOTAL Metals

Lot-Sample #...: H9I040105-003 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 17

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9250282						
Mercury	**0.16**	**0.040**	**mg/kg**	**SW846 7471A**	**09/08-09/09/99**	**D250G10T**
		Dilution Factor: 1		Analysis Time..: 16:36		
Prep Batch #...: 9251106						
Aluminum	**7480**	**24.0**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250G103**
		Dilution Factor: 1		Analysis Time..: 14:35		
Arsenic	**6.1**	**1.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250G10N**
		Dilution Factor: 1		Analysis Time..: 14:35		
Lead	**33.9**	**0.36**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250G10P**
		Dilution Factor: 1		Analysis Time..: 14:35		
Antimony	ND	7.2	mg/kg	SW846 6010B	09/08-09/11/99	D250G104
		Dilution Factor: 1		Analysis Time..: 14:35		
Barium	**49.6**	**24.0**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250G105**
		Dilution Factor: 1		Analysis Time..: 14:35		
Selenium	**0.65**	**0.60**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250G10Q**
		Dilution Factor: 1		Analysis Time..: 14:35		
Beryllium	ND	0.60	mg/kg	SW846 6010B	09/08-09/11/99	D250G106
		Dilution Factor: 1		Analysis Time..: 14:35		
Thallium	ND	1.2	mg/kg	SW846 6010B	09/08-09/11/99	D250G10R
		Dilution Factor: 1		Analysis Time..: 14:35		
Cadmium	ND	0.60	mg/kg	SW846 6010B	09/08-09/11/99	D250G107
		Dilution Factor: 1		Analysis Time..: 14:35		
Calcium	**60700**	**600**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250G108**
		Dilution Factor: 1		Analysis Time..: 14:35		
Chromium	**12.7**	**1.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250G109**
		Dilution Factor: 1		Analysis Time..: 14:35		
Cobalt	ND	6.0	mg/kg	SW846 6010B	09/08-09/11/99	D250G10A
		Dilution Factor: 1		Analysis Time..: 14:35		
per	**15.4**	**3.0**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250G10C**
		Dilution Factor: 1		Analysis Time..: 14:35		

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW303

TOTAL Metals

Lot-Sample #...: H9I040105-003 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	14200	12.0	mg/kg	SW846 6010B	09/08-09/11/99	D250G10D
		Dilution Factor: 1		Analysis Time..: 14:35		
Magnesium	8100	600	mg/kg	SW846 6010B	09/08-09/11/99	D250G10E
		Dilution Factor: 1		Analysis Time..: 14:35		
Manganese	283	1.8	mg/kg	SW846 6010B	09/08-09/11/99	D250G10F
		Dilution Factor: 1		Analysis Time..: 14:35		
Nickel	14.6	4.8	mg/kg	SW846 6010B	09/08-09/11/99	D250G10G
		Dilution Factor: 1		Analysis Time..: 14:35		
Potassium	830	600	mg/kg	SW846 6010B	09/08-09/11/99	D250G10H
		Dilution Factor: 1		Analysis Time..: 14:35		
Silver	ND	1.2	mg/kg	SW846 6010B	09/08-09/11/99	D250G10J
		Dilution Factor: 1		Analysis Time..: 14:35		
dium	ND	600	mg/kg	SW846 6010B	09/08-09/11/99	D250G10K
		Dilution Factor: 1		Analysis Time..: 14:35		
Vanadium	19.7	6.0	mg/kg	SW846 6010B	09/08-09/11/99	D250G10L
		Dilution Factor: 1		Analysis Time..: 14:35		
Zinc	67.4	2.4	mg/kg	SW846 6010B	09/08-09/11/99	D250G10M
		Dilution Factor: 1		Analysis Time..: 14:35		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW304

TOTAL Metals

Lot-Sample #...: H9I040105-004 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 11

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9250282						
Mercury	**0.044**	**0.037**	**mg/kg**	**SW846 7471A**	**09/08-09/09/99**	**D250H10R**
		Dilution Factor: 1		Analysis Time..: 16:39		
Prep Batch #...: 9251106						
Aluminum	**7540**	**22.4**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H102**
		Dilution Factor: 1		Analysis Time..: 14:40		
Arsenic	**7.3**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H10M**
		Dilution Factor: 1		Analysis Time..: 14:40		
Lead	**60.1**	**0.34**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H10N**
		Dilution Factor: 1		Analysis Time..: 14:40		
Antimony	ND	6.7	mg/kg	SW846 6010B	09/08-09/11/99	D250H103
		Dilution Factor: 1		Analysis Time..: 14:40		
Barium	**50.3**	**22.4**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H104**
		Dilution Factor: 1		Analysis Time..: 14:40		
Selenium	**0.92**	**0.56**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H10P**
		Dilution Factor: 1		Analysis Time..: 14:40		
Beryllium	ND	0.56	mg/kg	SW846 6010B	09/08-09/11/99	D250H105
		Dilution Factor: 1		Analysis Time..: 14:40		
Thallium	ND	1.1	mg/kg	SW846 6010B	09/08-09/11/99	D250H10Q
		Dilution Factor: 1		Analysis Time..: 14:40		
Cadmium	ND	0.56	mg/kg	SW846 6010B	09/08-09/11/99	D250H106
		Dilution Factor: 1		Analysis Time..: 14:40		
Calcium	**8070**	**559**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H107**
		Dilution Factor: 1		Analysis Time..: 14:40		
Chromium	**11.1**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H108**
		Dilution Factor: 1		Analysis Time..: 14:40		
Cobalt	**6.2**	**5.6**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H109**
		Dilution Factor: 1		Analysis Time..: 14:40		
per	**14.1**	**2.8**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H10A**
		Dilution Factor: 1		Analysis Time..: 14:40		

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW304

TOTAL Metals

Lot-Sample #...: H9I040105-004 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	**16100**	**11.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H10C**
		Dilution Factor: 1		Analysis Time..: 14:40		
Magnesium	**3370**	**559**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H10D**
		Dilution Factor: 1		Analysis Time..: 14:40		
Manganese	**281**	**1.7**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H10E**
		Dilution Factor: 1		Analysis Time..: 14:40		
Nickel	**14.8**	**4.5**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H10F**
		Dilution Factor: 1		Analysis Time..: 14:40		
Potassium	**724**	**559**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H10G**
		Dilution Factor: 1		Analysis Time..: 14:40		
Silver	ND	1.1	mg/kg	SW846 6010B	09/08-09/11/99	D250H10H
		Dilution Factor: 1		Analysis Time..: 14:40		
dium	ND	559	mg/kg	SW846 6010B	09/08-09/11/99	D250H10J
		Dilution Factor: 1		Analysis Time..: 14:40		
Vanadium	**19.9**	**5.6**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H10K**
		Dilution Factor: 1		Analysis Time..: 14:40		
Zinc	**44.0**	**2.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250H10L**
		Dilution Factor: 1		Analysis Time..: 14:40		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW305

TOTAL Metals

Lot-Sample #...: H9I040105-005 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 9.7

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9250282						
Mercury	ND	0.037	mg/kg	SW846 7471A	09/08-09/09/99	D250K10R
		Dilution Factor: 1		Analysis Time..: 16:41		
Prep Batch #...: 9251106						
Aluminum	**7500**	**22.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K102**
		Dilution Factor: 1		Analysis Time..: 14:44		
Arsenic	**6.7**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K10M**
		Dilution Factor: 1		Analysis Time..: 14:44		
Lead	**12.6**	**0.33**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K10N**
		Dilution Factor: 1		Analysis Time..: 14:44		
Antimony	ND	6.6	mg/kg	SW846 6010B	09/08-09/11/99	D250K103
		Dilution Factor: 1		Analysis Time..: 14:44		
Barium	**63.6**	**22.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K104**
		Dilution Factor: 1		Analysis Time..: 14:44		
Selenium	**0.57**	**0.55**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K10P**
		Dilution Factor: 1		Analysis Time..: 14:44		
Beryllium	ND	0.55	mg/kg	SW846 6010B	09/08-09/11/99	D250K105
		Dilution Factor: 1		Analysis Time..: 14:44		
Thallium	**1.1**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K10Q**
		Dilution Factor: 1		Analysis Time..: 14:44		
Cadmium	ND	0.55	mg/kg	SW846 6010B	09/08-09/11/99	D250K106
		Dilution Factor: 1		Analysis Time..: 14:44		
Calcium	**40200**	**554**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K107**
		Dilution Factor: 1		Analysis Time..: 14:44		
Chromium	**12.3**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K108**
		Dilution Factor: 1		Analysis Time..: 14:44		
Cobalt	**8.8**	**5.5**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K109**
		Dilution Factor: 1		Analysis Time..: 14:44		
per	**13.1**	**2.8**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K10A**
		Dilution Factor: 1		Analysis Time..: 14:44		

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW305

TOTAL Metals

Lot-Sample #...: H9I040105-005 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	**14500**	**11.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K10C**
		Dilution Factor: 1		Analysis Time..: 14:44		
Magnesium	**7610**	**554**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K10D**
		Dilution Factor: 1		Analysis Time..: 14:44		
Manganese	**606**	**1.7**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K10E**
		Dilution Factor: 1		Analysis Time..: 14:44		
Nickel	**17.7**	**4.4**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K10F**
		Dilution Factor: 1		Analysis Time..: 14:44		
Potassium	**715**	**554**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K10G**
		Dilution Factor: 1		Analysis Time..: 14:44		
Silver	ND	1.1	mg/kg	SW846 6010B	09/08-09/11/99	D250K10H
		Dilution Factor: 1		Analysis Time..: 14:44		
dium	ND	554	mg/kg	SW846 6010B	09/08-09/11/99	D250K10J
		Dilution Factor: 1		Analysis Time..: 14:44		
Vanadium	**19.5**	**5.5**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K10K**
		Dilution Factor: 1		Analysis Time..: 14:44		
Zinc	**42.2**	**2.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250K10L**
		Dilution Factor: 1		Analysis Time..: 14:44		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW306

TOTAL Metals

Lot-Sample #...: H9I040105-006 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 4.5

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9250282						
Mercury	ND	0.035	mg/kg	SW846 7471A	09/08-09/09/99	D250L10R
		Dilution Factor: 1		Analysis Time..: 16:43		
Prep Batch #...: 9251106						
Aluminum	**5130**	**20.9**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250L102**
		Dilution Factor: 1		Analysis Time..: 14:58		
Arsenic	**3.9**	**1.0**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250L10M**
		Dilution Factor: 1		Analysis Time..: 14:58		
Lead	**9.6**	**0.31**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250L10N**
		Dilution Factor: 1		Analysis Time..: 14:58		
Antimony	ND	6.3	mg/kg	SW846 6010B	09/08-09/11/99	D250L103
		Dilution Factor: 1		Analysis Time..: 14:58		
Barium	**29.7**	**20.9**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250L104**
		Dilution Factor: 1		Analysis Time..: 14:58		
Selenium	ND	0.52	mg/kg	SW846 6010B	09/08-09/11/99	D250L10P
		Dilution Factor: 1		Analysis Time..: 14:58		
Beryllium	ND	0.52	mg/kg	SW846 6010B	09/08-09/11/99	D250L105
		Dilution Factor: 1		Analysis Time..: 14:58		
Thallium	ND	1.0	mg/kg	SW846 6010B	09/08-09/11/99	D250L10Q
		Dilution Factor: 1		Analysis Time..: 14:58		
Cadmium	ND	0.52	mg/kg	SW846 6010B	09/08-09/11/99	D250L106
		Dilution Factor: 1		Analysis Time..: 14:58		
Calcium	**15000**	**524**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250L107**
		Dilution Factor: 1		Analysis Time..: 14:58		
Chromium	**8.6**	**1.0**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250L108**
		Dilution Factor: 1		Analysis Time..: 14:58		
Cobalt	ND	5.2	mg/kg	SW846 6010B	09/08-09/11/99	D250L109
		Dilution Factor: 1		Analysis Time..: 14:58		
per	**7.1**	**2.6**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250L10A**
		Dilution Factor: 1		Analysis Time..: 14:58		

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW306

TOTAL Metals

Lot-Sample #...: H9I040105-006 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	**10300**	**10.5**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250L10C**
		Dilution Factor: 1		Analysis Time..: 14:58		
Magnesium	**4230**	**524**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250L10D**
		Dilution Factor: 1		Analysis Time..: 14:58		
Manganese	**170**	**1.6**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250L10E**
		Dilution Factor: 1		Analysis Time..: 14:58		
Nickel	**8.4**	**4.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250L10F**
		Dilution Factor: 1		Analysis Time..: 14:58		
Potassium	ND	524	mg/kg	SW846 6010B	09/08-09/11/99	D250L10G
		Dilution Factor: 1		Analysis Time..: 14:58		
Silver	ND	1.0	mg/kg	SW846 6010B	09/08-09/11/99	D250L10H
		Dilution Factor: 1		Analysis Time..: 14:58		
Sodium	ND	524	mg/kg	SW846 6010B	09/08-09/11/99	D250L10J
		Dilution Factor: 1		Analysis Time..: 14:58		
Vanadium	**14.8**	**5.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250L10K**
		Dilution Factor: 1		Analysis Time..: 14:58		
Zinc	**33.8**	**2.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250L10L**
		Dilution Factor: 1		Analysis Time..: 14:58		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW307

TOTAL Metals

Lot-Sample #...: H9I040105-007 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 3.7

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9250282						
Mercury	**0.035**	**0.034**	**mg/kg**	**SW846 7471A**	**09/08-09/09/99**	**D250N10R**
		Dilution Factor: 1		Analysis Time..: 16:46		
Prep Batch #...: 9251106						
Aluminum	**5190**	**20.8**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250N102**
		Dilution Factor: 1		Analysis Time..: 15:03		
Arsenic	**4.0**	**1.0**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250N10M**
		Dilution Factor: 1		Analysis Time..: 15:03		
Lead	**11.6**	**0.31**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250N10N**
		Dilution Factor: 1		Analysis Time..: 15:03		
Antimony	ND	6.2	mg/kg	SW846 6010B	09/08-09/11/99	D250N103
		Dilution Factor: 1		Analysis Time..: 15:03		
Barium	**31.4**	**20.8**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250N104**
		Dilution Factor: 1		Analysis Time..: 15:03		
Selenium	ND	0.52	mg/kg	SW846 6010B	09/08-09/11/99	D250N10P
		Dilution Factor: 1		Analysis Time..: 15:03		
Beryllium	ND	0.52	mg/kg	SW846 6010B	09/08-09/11/99	D250N105
		Dilution Factor: 1		Analysis Time..: 15:03		
Thallium	ND	1.0	mg/kg	SW846 6010B	09/08-09/11/99	D250N10Q
		Dilution Factor: 1		Analysis Time..: 15:03		
Cadmium	ND	0.52	mg/kg	SW846 6010B	09/08-09/11/99	D250N106
		Dilution Factor: 1		Analysis Time..: 15:03		
Calcium	**5180**	**519**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250N107**
		Dilution Factor: 1		Analysis Time..: 15:03		
Chromium	**10**	**1.0**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250N108**
		Dilution Factor: 1		Analysis Time..: 15:03		
Cobalt	ND	5.2	mg/kg	SW846 6010B	09/08-09/11/99	D250N109
		Dilution Factor: 1		Analysis Time..: 15:03		
per	**7.3**	**2.6**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250N10A**
		Dilution Factor: 1		Analysis Time..: 15:03		

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW307

TOTAL Metals

Lot-Sample #...: H9I040105-007 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	**10500**	**10.4**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250N10C**
		Dilution Factor: 1		Analysis Time..: 15:03		
Magnesium	**1860**	**519**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250N10D**
		Dilution Factor: 1		Analysis Time..: 15:03		
Manganese	**171**	**1.6**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250N10E**
		Dilution Factor: 1		Analysis Time..: 15:03		
Nickel	**9.8**	**4.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250N10F**
		Dilution Factor: 1		Analysis Time..: 15:03		
Potassium	ND	519	mg/kg	SW846 6010B	09/08-09/11/99	D250N10G
		Dilution Factor: 1		Analysis Time..: 15:03		
Silver	ND	1.0	mg/kg	SW846 6010B	09/08-09/11/99	D250N10H
		Dilution Factor: 1		Analysis Time..: 15:03		
dium	ND	519	mg/kg	SW846 6010B	09/08-09/11/99	D250N10J
		Dilution Factor: 1		Analysis Time..: 15:03		
Vanadium	**14.9**	**5.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250N10K**
		Dilution Factor: 1		Analysis Time..: 15:03		
Zinc	**34.2**	**2.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250N10L**
		Dilution Factor: 1		Analysis Time..: 15:03		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW308

TOTAL Metals

Lot-Sample #...: H9I040105-008 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 26

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9250282						
Mercury	**0.056**	**0.045**	**mg/kg**	**SW846 7471A**	**09/08-09/09/99**	**D250P10R**
		Dilution Factor: 1		Analysis Time..: 16:48		
Prep Batch #...: 9251106						
Aluminum	**10200**	**27.0**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250P102**
		Dilution Factor: 1		Analysis Time..: 15:07		
Arsenic	**6.8**	**1.4**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250P10M**
		Dilution Factor: 1		Analysis Time..: 15:07		
Lead	**16.8**	**0.41**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250P10N**
		Dilution Factor: 1		Analysis Time..: 15:07		
Antimony	ND	8.1	mg/kg	SW846 6010B	09/08-09/11/99	D250P103
		Dilution Factor: 1		Analysis Time..: 15:07		
Barium	**75.3**	**27.0**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250P104**
		Dilution Factor: 1		Analysis Time..: 15:07		
Selenium	**1.2**	**0.68**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250P10P**
		Dilution Factor: 1		Analysis Time..: 15:07		
Beryllium	ND	0.68	mg/kg	SW846 6010B	09/08-09/11/99	D250P105
		Dilution Factor: 1		Analysis Time..: 15:07		
Thallium	ND	1.4	mg/kg	SW846 6010B	09/08-09/11/99	D250P10Q
		Dilution Factor: 1		Analysis Time..: 15:07		
Cadmium	ND	0.68	mg/kg	SW846 6010B	09/08-09/11/99	D250P106
		Dilution Factor: 1		Analysis Time..: 15:07		
Calcium	**6880**	**676**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250P107**
		Dilution Factor: 1		Analysis Time..: 15:07		
Chromium	**16.5**	**1.4**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250P108**
		Dilution Factor: 1		Analysis Time..: 15:07		
Cobalt	**8.1**	**6.8**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250P109**
		Dilution Factor: 1		Analysis Time..: 15:07		
per	**15.9**	**3.4**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250P10A**
		Dilution Factor: 1		Analysis Time..: 15:07		

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW308

TOTAL Metals

Lot-Sample #...: H9I040105-008 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	18200	13.5	mg/kg	SW846 6010B	09/08-09/11/99	D250P10C
		Dilution Factor: 1		Analysis Time..: 15:07		
Magnesium	3230	676	mg/kg	SW846 6010B	09/08-09/11/99	D250P10D
		Dilution Factor: 1		Analysis Time..: 15:07		
Manganese	407	2.0	mg/kg	SW846 6010B	09/08-09/11/99	D250P10E
		Dilution Factor: 1		Analysis Time..: 15:07		
Nickel	18.4	5.4	mg/kg	SW846 6010B	09/08-09/11/99	D250P10F
		Dilution Factor: 1		Analysis Time..: 15:07		
Potassium	936	676	mg/kg	SW846 6010B	09/08-09/11/99	D250P10G
		Dilution Factor: 1		Analysis Time..: 15:07		
Silver	ND	1.4	mg/kg	SW846 6010B	09/08-09/11/99	D250P10H
		Dilution Factor: 1		Analysis Time..: 15:07		
dium	ND	676	mg/kg	SW846 6010B	09/08-09/11/99	D250P10J
		Dilution Factor: 1		Analysis Time..: 15:07		
Vanadium	24.0	6.8	mg/kg	SW846 6010B	09/08-09/11/99	D250P10K
		Dilution Factor: 1		Analysis Time..: 15:07		
Zinc	59.5	2.7	mg/kg	SW846 6010B	09/08-09/11/99	D250P10L
		Dilution Factor: 1		Analysis Time..: 15:07		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW309

TOTAL Metals

Lot-Sample #...: H9I040105-009 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 15

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9250282						
Mercury	**0.048**	**0.039**	**mg/kg**	**SW846 7471A**	**09/08-09/09/99**	**D250R10R**
		Dilution Factor: 1		Analysis Time..: 16:50		
Prep Batch #...: 9251106						
Aluminum	**9470**	**23.5**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250R102**
		Dilution Factor: 1		Analysis Time..: 15:12		
Arsenic	**6.4**	**1.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250R10M**
		Dilution Factor: 1		Analysis Time..: 15:12		
Lead	**14.6**	**0.35**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250R10N**
		Dilution Factor: 1		Analysis Time..: 15:12		
Antimony	ND	7.0	mg/kg	SW846 6010B	09/08-09/11/99	D250R103
		Dilution Factor: 1		Analysis Time..: 15:12		
Barium	**74.7**	**23.5**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250R104**
		Dilution Factor: 1		Analysis Time..: 15:12		
Selenium	**1.1**	**0.59**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250R10P**
		Dilution Factor: 1		Analysis Time..: 15:12		
Beryllium	**0.59**	**0.59**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250R105**
		Dilution Factor: 1		Analysis Time..: 15:12		
Thallium	ND	1.2	mg/kg	SW846 6010B	09/08-09/11/99	D250R10Q
		Dilution Factor: 1		Analysis Time..: 15:12		
Cadmium	ND	0.59	mg/kg	SW846 6010B	09/08-09/11/99	D250R106
		Dilution Factor: 1		Analysis Time..: 15:12		
Calcium	**6090**	**587**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250R107**
		Dilution Factor: 1		Analysis Time..: 15:12		
Chromium	**14.9**	**1.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250R108**
		Dilution Factor: 1		Analysis Time..: 15:12		
Cobalt	**7.2**	**5.9**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250R109**
		Dilution Factor: 1		Analysis Time..: 15:12		
per	**14.5**	**2.9**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250R10A**
		Dilution Factor: 1		Analysis Time..: 15:12		

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW309

TOTAL Metals

Lot-Sample #...: H9I040105-009 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	17000	11.7	mg/kg	SW846 6010B	09/08-09/11/99	D250R10C
		Dilution Factor: 1		Analysis Time..: 15:12		
Magnesium	2910	587	mg/kg	SW846 6010B	09/08-09/11/99	D250R10D
		Dilution Factor: 1		Analysis Time..: 15:12		
Manganese	451	1.8	mg/kg	SW846 6010B	09/08-09/11/99	D250R10E
		Dilution Factor: 1		Analysis Time..: 15:12		
Nickel	17.5	4.7	mg/kg	SW846 6010B	09/08-09/11/99	D250R10F
		Dilution Factor: 1		Analysis Time..: 15:12		
Potassium	833	587	mg/kg	SW846 6010B	09/08-09/11/99	D250R10G
		Dilution Factor: 1		Analysis Time..: 15:12		
Silver	ND	1.2	mg/kg	SW846 6010B	09/08-09/11/99	D250R10H
		Dilution Factor: 1		Analysis Time..: 15:12		
›dium	ND	587	mg/kg	SW846 6010B	09/08-09/11/99	D250R10J
		Dilution Factor: 1		Analysis Time..: 15:12		
Vanadium	22.0	5.9	mg/kg	SW846 6010B	09/08-09/11/99	D250R10K
		Dilution Factor: 1		Analysis Time..: 15:12		
Zinc	55.5	2.3	mg/kg	SW846 6010B	09/08-09/11/99	D250R10L
		Dilution Factor: 1		Analysis Time..: 15:12		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW310

TOTAL Metals

Lot-Sample #...: H9I040105-010 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 8.8

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9250282						
Mercury	**0.036**	**0.036**	**mg/kg**	**SW846 7471A**	**09/08-09/09/99**	**D250T10R**
		Dilution Factor: 1		Analysis Time..: 16:53		
Prep Batch #...: 9251106						
Aluminum	**8270**	**21.9**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250T102**
		Dilution Factor: 1		Analysis Time..: 15:16		
Arsenic	**6.7**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250T10M**
		Dilution Factor: 1		Analysis Time..: 15:16		
Lead	**11.7**	**0.33**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250T10N**
		Dilution Factor: 1		Analysis Time..: 15:16		
Antimony	ND	6.6	mg/kg	SW846 6010B	09/08-09/11/99	D250T103
		Dilution Factor: 1		Analysis Time..: 15:16		
Barium	**57.6**	**21.9**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250T104**
		Dilution Factor: 1		Analysis Time..: 15:16		
Selenium	**1.1**	**0.55**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250T10P**
		Dilution Factor: 1		Analysis Time..: 15:16		
Beryllium	ND	0.55	mg/kg	SW846 6010B	09/08-09/11/99	D250T105
		Dilution Factor: 1		Analysis Time..: 15:16		
Thallium	**1.1**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250T10Q**
		Dilution Factor: 1		Analysis Time..: 15:16		
Cadmium	ND	0.55	mg/kg	SW846 6010B	09/08-09/11/99	D250T106
		Dilution Factor: 1		Analysis Time..: 15:16		
Calcium	**13200**	**548**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250T107**
		Dilution Factor: 1		Analysis Time..: 15:16		
Chromium	**13.4**	**1.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250T108**
		Dilution Factor: 1		Analysis Time..: 15:16		
Cobalt	**7.5**	**5.5**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250T109**
		Dilution Factor: 1		Analysis Time..: 15:16		
per	**14.0**	**2.7**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250T10A**
		Dilution Factor: 1		Analysis Time..: 15:16		

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW310

TOTAL Metals

Lot-Sample #...: H9I040105-010 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	16300	11.0	mg/kg	SW846 6010B	09/08-09/11/99	D250T10C
		Dilution Factor: 1		Analysis Time..: 15:16		
Magnesium	4970	548	mg/kg	SW846 6010B	09/08-09/11/99	D250T10D
		Dilution Factor: 1		Analysis Time..: 15:16		
Manganese	348	1.6	mg/kg	SW846 6010B	09/08-09/11/99	D250T10E
		Dilution Factor: 1		Analysis Time..: 15:16		
Nickel	17.0	4.4	mg/kg	SW846 6010B	09/08-09/11/99	D250T10F
		Dilution Factor: 1		Analysis Time..: 15:16		
Potassium	780	548	mg/kg	SW846 6010B	09/08-09/11/99	D250T10G
		Dilution Factor: 1		Analysis Time..: 15:16		
Silver	ND	1.1	mg/kg	SW846 6010B	09/08-09/11/99	D250T10H
		Dilution Factor: 1		Analysis Time..: 15:16		
dium	ND	548	mg/kg	SW846 6010B	09/08-09/11/99	D250T10J
		Dilution Factor: 1		Analysis Time..: 15:16		
Vanadium	21.1	5.5	mg/kg	SW846 6010B	09/08-09/11/99	D250T10K
		Dilution Factor: 1		Analysis Time..: 15:16		
Zinc	46.4	2.2	mg/kg	SW846 6010B	09/08-09/11/99	D250T10L
		Dilution Factor: 1		Analysis Time..: 15:16		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW301

TOTAL Metals

Lot-Sample #...: H9I040105-011 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 17

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9250282						
Mercury	ND	0.040	mg/kg	SW846 7471A	09/08-09/09/99	D250W10R
		Dilution Factor: 1		Analysis Time..: 17:00		
Prep Batch #...: 9251106						
Aluminum	**8410**	**24.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250W102**
		Dilution Factor: 1		Analysis Time..: 15:21		
Arsenic	**7.2**	**1.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250W10M**
		Dilution Factor: 1		Analysis Time..: 15:21		
Lead	**9.4**	**0.36**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250W10N**
		Dilution Factor: 1		Analysis Time..: 15:21		
Antimony	ND	7.3	mg/kg	SW846 6010B	09/08-09/11/99	D250W103
		Dilution Factor: 1		Analysis Time..: 15:21		
Barium	**58.6**	**24.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250W104**
		Dilution Factor: 1		Analysis Time..: 15:21		
Selenium	**0.71**	**0.61**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250W10P**
		Dilution Factor: 1		Analysis Time..: 15:21		
Beryllium	ND	0.61	mg/kg	SW846 6010B	09/08-09/11/99	D250W105
		Dilution Factor: 1		Analysis Time..: 15:21		
Thallium	**1.2**	**1.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250W10Q**
		Dilution Factor: 1		Analysis Time..: 15:21		
Cadmium	ND	0.61	mg/kg	SW846 6010B	09/08-09/11/99	D250W106
		Dilution Factor: 1		Analysis Time..: 15:21		
Calcium	**33000**	**605**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250W107**
		Dilution Factor: 1		Analysis Time..: 15:21		
Chromium	**14.1**	**1.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250W108**
		Dilution Factor: 1		Analysis Time..: 15:21		
Cobalt	**8.2**	**6.1**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250W109**
		Dilution Factor: 1		Analysis Time..: 15:21		
per	**17.9**	**3.0**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250W10A**
		Dilution Factor: 1		Analysis Time..: 15:21		

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW301

TOTAL Metals

Lot-Sample #...: H9I040105-011 Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	18500	12.1	mg/kg	SW846 6010B	09/08-09/11/99	D250W10C
		Dilution Factor: 1		Analysis Time..: 15:21		
Magnesium	11000	605	mg/kg	SW846 6010B	09/08-09/11/99	D250W10D
		Dilution Factor: 1		Analysis Time..: 15:21		
Manganese	390	1.8	mg/kg	SW846 6010B	09/08-09/11/99	D250W10E
		Dilution Factor: 1		Analysis Time..: 15:21		
Nickel	20.5	4.8	mg/kg	SW846 6010B	09/08-09/11/99	D250W10F
		Dilution Factor: 1		Analysis Time..: 15:21		
Potassium	998	605	mg/kg	SW846 6010B	09/08-09/11/99	D250W10G
		Dilution Factor: 1		Analysis Time..: 15:21		
Silver	ND	1.2	mg/kg	SW846 6010B	09/08-09/11/99	D250W10H
		Dilution Factor: 1		Analysis Time..: 15:21		
[illegible]dium	ND	605	mg/kg	SW846 6010B	09/08-09/11/99	D250W10J
		Dilution Factor: 1		Analysis Time..: 15:21		
Vanadium	22.0	6.1	mg/kg	SW846 6010B	09/08-09/11/99	D250W10K
		Dilution Factor: 1		Analysis Time..: 15:21		
Zinc	52.6	2.4	mg/kg	SW846 6010B	09/08-09/11/99	D250W10L
		Dilution Factor: 1		Analysis Time..: 15:21		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW302

TOTAL Metals

Lot-Sample #...: H9I040105-012 **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 21

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 9250282						
Mercury	**0.047**	**0.042**	**mg/kg**	**SW846 7471A**	**09/08-09/09/99**	**D250X10R**
		Dilution Factor: 1		Analysis Time..: 17:02		
Prep Batch #...: 9251106						
Aluminum	**9580**	**25.4**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250X102**
		Dilution Factor: 1		Analysis Time..: 15:25		
Arsenic	**6.4**	**1.3**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250X10M**
		Dilution Factor: 1		Analysis Time..: 15:25		
Lead	**18.6**	**0.38**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250X10N**
		Dilution Factor: 1		Analysis Time..: 15:25		
Antimony	ND	7.6	mg/kg	SW846 6010B	09/08-09/11/99	D250X103
		Dilution Factor: 1		Analysis Time..: 15:25		
Barium	**66.1**	**25.4**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250X104**
		Dilution Factor: 1		Analysis Time..: 15:25		
Selenium	**0.99**	**0.63**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250X10P**
		Dilution Factor: 1		Analysis Time..: 15:25		
Beryllium	ND	0.63	mg/kg	SW846 6010B	09/08-09/11/99	D250X105
		Dilution Factor: 1		Analysis Time..: 15:25		
Thallium	ND	1.3	mg/kg	SW846 6010B	09/08-09/11/99	D250X10Q
		Dilution Factor: 1		Analysis Time..: 15:25		
Cadmium	ND	0.63	mg/kg	SW846 6010B	09/08-09/11/99	D250X106
		Dilution Factor: 1		Analysis Time..: 15:25		
Calcium	**7240**	**635**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250X107**
		Dilution Factor: 1		Analysis Time..: 15:25		
Chromium	**14.3**	**1.3**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250X108**
		Dilution Factor: 1		Analysis Time..: 15:25		
Cobalt	**7.1**	**6.3**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250X109**
		Dilution Factor: 1		Analysis Time..: 15:25		
per	**18.9**	**3.2**	**mg/kg**	**SW846 6010B**	**09/08-09/11/99**	**D250X10A**
		Dilution Factor: 1		Analysis Time..: 15:25		

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U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW302

TOTAL Metals

Lot-Sample #...: H9I040105-012 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Iron	18300	12.7	mg/kg	SW846 6010B	09/08-09/11/99	D250X10C
		Dilution Factor: 1		Analysis Time..: 15:25		
Magnesium	3780	635	mg/kg	SW846 6010B	09/08-09/11/99	D250X10D
		Dilution Factor: 1		Analysis Time..: 15:25		
Manganese	142	1.9	mg/kg	SW846 6010B	09/08-09/11/99	D250X10E
		Dilution Factor: 1		Analysis Time..: 15:25		
Nickel	19.1	5.1	mg/kg	SW846 6010B	09/08-09/11/99	D250X10F
		Dilution Factor: 1		Analysis Time..: 15:25		
Potassium	877	635	mg/kg	SW846 6010B	09/08-09/11/99	D250X10G
		Dilution Factor: 1		Analysis Time..: 15:25		
Silver	ND	1.3	mg/kg	SW846 6010B	09/08-09/11/99	D250X10H
		Dilution Factor: 1		Analysis Time..: 15:25		
[illegible]ium	ND	635	mg/kg	SW846 6010B	09/08-09/11/99	D250X10J
		Dilution Factor: 1		Analysis Time..: 15:25		
Vanadium	24.5	6.3	mg/kg	SW846 6010B	09/08-09/11/99	D250X10K
		Dilution Factor: 1		Analysis Time..: 15:25		
Zinc	65.2	2.5	mg/kg	SW846 6010B	09/08-09/11/99	D250X10L
		Dilution Factor: 1		Analysis Time..: 15:25		

NOTE(S):

Results and reporting limits have been adjusted for dry weight.

METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: H9I040105 Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: H9I080000-106 Prep Batch #...: 9251106						
Aluminum	ND	20.0	mg/kg	SW846 6010B	09/08-09/11/99	D26GL10G
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Arsenic	ND	1.0	mg/kg	SW846 6010B	09/08-09/11/99	D26GL10C
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Antimony	ND	6.0	mg/kg	SW846 6010B	09/08-09/11/99	D26GL10H
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Lead	ND	0.30	mg/kg	SW846 6010B	09/08-09/11/99	D26GL10D
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Barium	ND	20.0	mg/kg	SW846 6010B	09/08-09/11/99	D26GL10J
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Selenium	ND	0.50	mg/kg	SW846 6010B	09/08-09/11/99	D26GL10E
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Beryllium	ND	0.50	mg/kg	SW846 6010B	09/08-09/11/99	D26GL10K
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Thallium	ND	1.0	mg/kg	SW846 6010B	09/08-09/11/99	D26GL10F
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Cadmium	ND	0.50	mg/kg	SW846 6010B	09/08-09/11/99	D26GL10L
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Calcium	ND	500	mg/kg	SW846 6010B	09/08-09/11/99	D26GL10M
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Chromium	ND	1.0	mg/kg	SW846 6010B	09/08-09/11/99	D26GL10N
		Dilution Factor: 1				
		Analysis Time..: 14:02				

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: H9I040105 Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Cobalt	ND	5.0	mg/kg	SW846 6010B	09/08-09/11/99	D26GL10P
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Copper	ND	2.5	mg/kg	SW846 6010B	09/08-09/11/99	D26GL101
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Iron	ND	10.0	mg/kg	SW846 6010B	09/08-09/11/99	D26GL102
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Magnesium	ND	500	mg/kg	SW846 6010B	09/08-09/11/99	D26GL103
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Manganese	ND	1.5	mg/kg	SW846 6010B	09/08-09/11/99	D26GL104
		Dilution Factor: 1				
		Analysis Time..: 14:02				
ckel	ND	4.0	mg/kg	SW846 6010B	09/08-09/11/99	D26GL105
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Potassium	ND	500	mg/kg	SW846 6010B	09/08-09/11/99	D26GL106
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Silver	ND	1.0	mg/kg	SW846 6010B	09/08-09/11/99	D26GL107
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Sodium	ND	500	mg/kg	SW846 6010B	09/08-09/11/99	D26GL108
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Vanadium	ND	5.0	mg/kg	SW846 6010B	09/08-09/11/99	D26GL109
		Dilution Factor: 1				
		Analysis Time..: 14:02				
Zinc	ND	2.0	mg/kg	SW846 6010B	09/08-09/11/99	D26GL10A
		Dilution Factor: 1				
		Analysis Time..: 14:02				

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METHOD BLANK REPORT

TOTAL Metals

Client Lot #...: H9I040105 **Matrix.....:** SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: H9I070000-282 **Prep Batch #...:** 9250282						
Mercury	ND	0.033	mg/kg	SW846 7471A	09/08-09/09/99	D264H101

Dilution Factor: 1
Analysis Time..: 16:17

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: H9I040105 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: H9I070000-282 **Prep Batch #...:** 9250282							
Mercury	0.833	0.798	mg/kg	96	SW846 7471A	09/08-09/09/99	D264H102
		Dilution Factor: 1					
		Analysis Time..: 16:20					
LCS Lot-Sample#: H9I080000-106 **Prep Batch #...:** 9251106							
Copper	25.0	25.8	mg/kg	103	SW846 6010B	09/08-09/11/99	D26GL10Q
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Iron	100	109	mg/kg	109	SW846 6010B	09/08-09/11/99	D26GL10R
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Magnesium	5000	4890	mg/kg	98	SW846 6010B	09/08-09/11/99	D26GL10T
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Manganese	50.0	52.4	mg/kg	105	SW846 6010B	09/08-09/11/99	D26GL10U
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Nickel	50.0	52.4	mg/kg	105	SW846 6010B	09/08-09/11/99	D26GL10V
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Potassium	5000	4930	mg/kg	99	SW846 6010B	09/08-09/11/99	D26GL10W
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Silver	5.00	4.99	mg/kg	100	SW846 6010B	09/08-09/11/99	D26GL10X
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Beryllium	5.00	5.29	mg/kg	106	SW846 6010B	09/08-09/11/99	D26GL11A
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Cadmium	5.00	5.23	mg/kg	105	SW846 6010B	09/08-09/11/99	D26GL11C
		Dilution Factor: 1					
		Analysis Time..: 14:07					

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: H9I040105 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Calcium	5000	5000	mg/kg	100	SW846 6010B	09/08-09/11/99	D26GL11D
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Chromium	20.0	20.8	mg/kg	104	SW846 6010B	09/08-09/11/99	D26GL11E
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Cobalt	50.0	51.6	mg/kg	103	SW846 6010B	09/08-09/11/99	D26GL11F
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Sodium	5000	4900	mg/kg	98	SW846 6010B	09/08-09/11/99	D26GL110
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Vanadium	50.0	51.6	mg/kg	103	SW846 6010B	09/08-09/11/99	D26GL111
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Zinc	50.0	53.0	mg/kg	106	SW846 6010B	09/08-09/11/99	D26GL112
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Arsenic	200	201	mg/kg	100	SW846 6010B	09/08-09/11/99	D26GL113
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Lead	50.0	50.0	mg/kg	100	SW846 6010B	09/08-09/11/99	D26GL114
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Selenium	200	195	mg/kg	98	SW846 6010B	09/08-09/11/99	D26GL115
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Thallium	200	203	mg/kg	101	SW846 6010B	09/08-09/11/99	D26GL116
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Aluminum	200	232	mg/kg	116	SW846 6010B	09/08-09/11/99	D26GL117
		Dilution Factor: 1					
		Analysis Time..: 14:07					

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LABORATORY CONTROL SAMPLE DATA REPORT

TOTAL Metals

Client Lot #...: H9I040105 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Antimony	50.0	48.8	mg/kg	98	SW846 6010B	09/08-09/11/99	D26GL118
		Dilution Factor: 1					
		Analysis Time..: 14:07					
Barium	200	206	mg/kg	103	SW846 6010B	09/08-09/11/99	D26GL119
		Dilution Factor: 1					
		Analysis Time..: 14:07					

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: H9I040105 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: H9I070000-282 **Prep Batch #...:** 9250282					
Mercury	96	(80 - 120)	SW846 7471A	09/08-09/09/99	D264H102
		Dilution Factor: 1			
		Analysis Time..: 16:20			
LCS Lot-Sample#: H9I080000-106 **Prep Batch #...:** 9251106					
Copper	103	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL10Q
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Iron	109	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL10R
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Magnesium	98	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL10T
		Dilution Factor: 1			
		Analysis Time..: 14:07			
nganese	105	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL10U
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Nickel	105	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL10V
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Potassium	99	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL10W
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Silver	100	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL10X
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Beryllium	106	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL11A
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Cadmium	105	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL11C
		Dilution Factor: 1			
		Analysis Time..: 14:07			

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: H9I040105 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Calcium	100	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL11D
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Chromium	104	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL11E
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Cobalt	103	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL11F
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Sodium	98	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL110
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Vanadium	103	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL111
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Zinc	106	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL112
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Arsenic	100	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL113
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Lead	100	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL114
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Selenium	98	(80 - 110)	SW846 6010B	09/08-09/11/99	D26GL115
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Thallium	101	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL116
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Aluminum	116	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL117
		Dilution Factor: 1			
		Analysis Time..: 14:07			

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LABORATORY CONTROL SAMPLE EVALUATION REPORT

TOTAL Metals

Client Lot #...: H9I040105 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Antimony	98	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL118
		Dilution Factor: 1			
		Analysis Time..: 14:07			
Barium	103	(80 - 120)	SW846 6010B	09/08-09/11/99	D26GL119
		Dilution Factor: 1			
		Analysis Time..: 14:07			

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Sample Data Summary

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW301

General Chemistry

Lot-Sample #...: H9I040105-001 **Work Order #...:** D250E **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 13

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
pH (solid)	7.5	0.10	No Units	SW846 9045A	09/09/99	9252144
	Dilution Factor: 1					
Percent Moisture	12.8	0.10	%	MCAWW 160.3 MOD	09/08-09/09/99	9252139
	Dilution Factor: 1					

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW302

General Chemistry

Lot-Sample #...: H9I040105-002 **Work Order #...:** D250F **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 8.4

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	8.4	0.10	%	MCAWW 160.3 MOD	09/08-09/09/99	9252139

Dilution Factor: 1

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW303

General Chemistry

Lot-Sample #...: H9I040105-003 **Work Order #...:** D250G **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 17

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	16.7	0.10	%	MCAWW 160.3 MOD	09/08-09/09/99	9252139

Dilution Factor: 1

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW304

General Chemistry

Lot-Sample #...: H9I040105-004 **Work Order #...:** D250H **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 11

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	10.6	0.10	%	MCAWW 160.3 MOD	09/08-09/09/99	9252139

Dilution Factor: 1

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW305

General Chemistry

Lot-Sample #...: H9I040105-005 **Work Order #...:** D250K **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 9.7

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	9.7	0.10	%	MCAWW 160.3 MOD	09/08-09/09/99	9252139

Dilution Factor: 1

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW306

General Chemistry

Lot-Sample #...: H9I040105-006 **Work Order #...:** D250L **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 4.5

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	4.5	0.10	%	MCAWW 160.3 MOD	09/08-09/09/99	9252139

Dilution Factor: 1

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW307

General Chemistry

Lot-Sample #...: H9I040105-007 **Work Order #...:** D250N **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 3.7

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	**3.7**	**0.10**	**%**	**MCAWW 160.3 MOD**	**09/08-09/09/99**	**9252139**

Dilution Factor: 1

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW308

General Chemistry

Lot-Sample #...: H9I040105-008 **Work Order #...:** D250P **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 26

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	26.0	0.10	%	MCAWW 160.3 MOD	09/08-09/09/99	9252139

Dilution Factor: 1

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW309

General Chemistry

Lot-Sample #...: H9I040105-009 **Work Order #...:** D250R **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 15

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	14.8	0.10	%	MCAWW 160.3 MOD	09/08-09/09/99	9252139

Dilution Factor: 1

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SSW310

General Chemistry

Lot-Sample #...: H9I040105-010 **Work Order #...:** D250T **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 8.8

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	8.8	0.10	%	MCAWW 160.3 MOD	09/08-09/09/99	9252139

Dilution Factor: 1

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW301

General Chemistry

Lot-Sample #...: H9I040105-011 **Work Order #...:** D250W **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 17

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	17.4	0.10	%	MCAWW 160.3 MOD	09/08-09/09/99	9252139

Dilution Factor: 1

U.S. ARMY CORPS OF ENGINEERS

Client Sample ID: PBOW99SDW302

General Chemistry

Lot-Sample #...: H9I040105-012 **Work Order #...:** D250X **Matrix.....:** SOLID
Date Sampled...: 09/02/99 **Date Received..:** 09/04/99
% Moisture.....: 21

PARAMETER	RESULT	RL	UNITS	METHOD	PREPARATION-ANALYSIS DATE	PREP BATCH #
Percent Moisture	21.2	0.10	%	MCAWW 160.3 MOD	09/08-09/09/99	9252139

Dilution Factor: 1

Sample Data Summary

La. atory Report
(Polarized Light Microscopy)

Client #: 10493-02
Customer: Quanterra
Attention: Jamie Mc Kinney
Address: 5815 Middlebrook Pk

City: Knoxville
State: TN
Zip Code: 37921

Batch Number: 0999-530

Date Sampled: 09/02/99
Date Received: 09/08/99
Date Reported: 09/09/99
Reported By: Bill Ewing

			Asbestos Fibers						Other Fibers				
Lab ID #	Client ID.	Description / Color	Chrysotile	Amosite	Crocidilite	Actinolite	Tremolite	Anthophylite	Cellulose	Glass Fibers	Synthetic	Other	Nonfibrou Material
965752	PBOW99SSW311	Brown Dirt / Sand							2%				98%
965753	PBOW99SSW312	Brown Dirt / Sand							3%				97%
965754	PBOW99SSW313	Brown Dirt / Sand							4%				96%
965755	PBOW99SSW314	Brown Dirt / Sand							2%				98%

Analytical Method: PLM per EPA 600/M4-82-020.

Reviewed by Kathy Taylor.

Accredited by The American Industrial Hygiene Association

AIHA Lab #9349 250 DeBartolo Pl, #2525, Boardman, OH 44512
TEL: (800)365-3396 FAX: (330) 758-1245

AIHA Labs #11124, 11103 1070 E. Meadow Circle, Palo Alto, CA 94303
TEL: (800) 833-1258 FAX: (650) 424-0336

Sample Receipt Documentation

Canberra
Environmental Services
Middlebrook Pike
Knoxville, Tennessee 37921
(423) 588-6401

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document 4747
Page 1 of 3

Project Name/No. 1 WWTP3
Sample Team Members 2 ALBERT REYES, DOUG LINEBACK
Profit Center No. 3
Project Manager 4
Purchase Order No. 6
Required Report Date 11 9-9-99

Samples Shipment Date 7 9-3-99
Lab Destination 8
Lab Contact 9 JANIE McKinney
Project Contact/Phone 12 502 582 5105
Carrier/Waybill No. 13

Bill to: 5 US Army Corps of Engineers
Report to: 10 Albert Reyes

ONE CONTAINER PER LINE

Sample Number 14	Sample Description/Type 15	Date/Time Collected 16	Container Type 17	Sample Volume 18	Pre-servative 19	Requested Testing Program 20	Condition on Receipt 21	Disposal Record No. 22
PBOW995SW301	Soil	9-2-99	Glass 250ml	250ml	cool	Explosives 8330	✓	
ditto	Soil	9-2-99	Glass	125ml	Cool	TAL metals, pH	✓	
PBOW995SW302	Soil	↓	↓	250ml	↓	Explosives SVOCs PCB	✓	
ditto	Soil	↓	↓	125ml	↓	TAL metals	✓	
PBOW995SW303	Soil	↓	↓	250ml	↓	Explosives SVOCs PCB	✓	Intact, properly preserved, received at 2°C
ditto	Soil	↓	↓	125ml	↓	TAL metals	✓	
PBOW995SW304	Soil	↓	↓	250ml	↓	Explosives 8330	✓	AXD 9-4-99
ditto	Soil	↓	↓	125ml	↓	TAL metals	✓	

Special Instructions: 23 4 days Turn Around

Possible Hazard Identification: 24
Non-hazard ☒ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: 25
Return to Client ☐ Disposal by Lab ☒ Archive (mos.)

Turnaround Time Required: 26
Normal ☐ Rush ☐ 4 days

QC Level: 27
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by 28 (Signature/Affiliation) Albert Reyes — Date: 9-3-99 Time:	1. Received by 28 (Signature/Affiliation) [signature] — Date: 9-4-99 Time: 09:30
2. Relinquished by (Signature/Affiliation) — Date: Time:	2. Received by (Signature/Affiliation) — Date: Time:
3. Relinquished by (Signature/Affiliation) — Date: Time:	3. Received by (Signature/Affiliation) — Date: Time:

Comments: 29

111

Quanterra
Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
(423) 588-6401

1T9I040105

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No.[30] 4747
Page 2 of 3

Project Name WW TP3
Project No.
Samples Shipment Date 9-3-99

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
PBOW99SSW305	Soil	9-2-99	G/2ml	250ml	cool	Exp 8330		
ditto				125		TAL Metal		
PBOW99SSW306				250		Exp 8330		
ditto				125		TAL metals		
PBOW99SSW307				250		Exp 8380		
ditto				125		TAL metals		
PBOW9955W308				250		Exp 8330		
ditto				125		TAL metals		
PBOW9955W309				250		Exp 8330		
ditto				125		TAL metals		
PBOW9955W310				250		Exp 8330		
ditto				125		TAL metals		
PBOW99SDW301	Sediment			250		Exp 8330 SVOCs		
ditto	Sediment			125		TAL metals		
PBOW99SDW302	Sediment			250		Exp 8330 SVOCs		
ditto	Sediment			125		TAL metals		
PBOW9955W302	Soil			125		VOCs		
PBOW9955W303	Soil			125		VOCs		
PBOW9955W311	Soil			125		Asbestos		
PBOW9955W312	Soil			125		Asbestos		

FOR LAB USE ONLY

Yellow: Field copy

*See back of form for special instructions.

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H9L04010S

Sierra Environmental Services
5815 Mid... Oak Pike
Knoxville, Tennessee 37921
(423) 588-6401

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No. 4747
Page 3 of 3

Project Name WWTP 3

Project No. _____

Samples Shipment Date 9-3-99

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time 16 Collected	Container 17 Type	Sample 18 Volume	Pre-19 servative	Requested Testing 20 Program	Condition on 21 Receipt	Disposal 22 Record No.
PBOW99SSW313	Soil	9-2-99	GLASS	125ml	Cool	Asbestos		
PBOW99SSW314	Soil		GLASS	125ml	Cool	Asbestos		
PBOW99SSW301	Surface water		1L AMBER	2LT	Cool	SVOCs		
ditto			1L AMBER	1LT	Cool	Exp 8330		
ditto			1L AMBER	2LT	Cool	PCBs		
ditto			1L HDPE	1LT	HNO3	TAL metals		
PBOW99SSW302			1L AMBER	2LT	Cool	SVOCs		
ditto			1L AMBER	1LT	Cool	Exp 8330		
ditto			1L AMBER	2LT	Cool	PCBs		
ditto			1L HDPE	1LT	HNO3	TAL metals		
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	
							FOR LAB USE ONLY	

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Environmental Services
Middlebrook Pike
Knoxville, Tennessee 37921
(423) 588-6401

H91040105

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document 4788
Page 1 of ___

Project Name/No. [1] USACOE / WWTP3
Sample Team Members [2]
Profit Center No. [3] 140
Project Manager [4] JAMIE McKWNEY
Purchase Order No. [6]
Required Report Date [11] 9-9-99

Samples Shipment Date [7] 9-7-99
Lab Destination [8] AT LABS
Lab Contact [9]
Project Contact/Phone [12]
Carrier/Waybill No. [13] AIRDANE

Bill to: [5] QUANTERRA
5815 MIDDLEBROOK PIKE
KNOXVILLE, TN 37921
ATTN: JAMIE McKWNEY

Report to: [10] 11

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Pre-servative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
PBOW99SSW311	SOIL	9-2-99	GLASS	120ML	NA	ASBESTOS		
PBOW99SSW312	↓	↓	↓	↓	↓	↓		
PBOW99SSW313	↓	↓	↓	↓	↓	↓		
PBOW99SSW314	↓	↓	↓	↓	↓	↓		

FOR LAB USE ONLY

Special Instructions: [23]

Possible Hazard Identification: [24]
Non-hazard ☐ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☒

Sample Disposal: [25]
Return to Client ☐ Disposal by Lab ☒ Archive (mos.)

Turnaround Time Required: [26]
Normal ☐ Rush ☐ ASAP

QC Level: [27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by [28] (Signature/Affiliation) Justin Witter	Date: 9-7-99 Time: 16:00	1. Received by [28] (Signature/Affiliation)	Date: Time:
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments: [29]

1852704 851

FEDERAL EXPRESS
Ship. # 1852704-851 Svcs. EXP
Desc. H91040105
Bill Ref

09/07/99 Wt. 5 LB 1 Pc
Dims

2001 (10/98) W SENDER'S COPY

Zip/Postal Code 44512

114

H9I040105

Quanterra Environmental Services
5815 Middlebrook Pike
Knoxville, Tennessee 37921
(423) 588-6401

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD*

Reference Document No. 4747
Page 1 of 3

Project Name/No. [1] WWTP3
Sample Team Members [2] ALBERT REYES, DOUG LINEBACK
Profit Center No. [3]
Project Manager [4]
Purchase Order No. [6]
Required Report Date [11] 9-9-99

Samples Shipment Date [7] 9-3-99
Lab Destination [8]
Lab Contact [9] JANIE McKinney
Project Contact/Phone [12] 502 582 5105
Carrier/Waybill No. [13]

Bill to: [5] USArmy Corps of Engineers
Report to: [10] Albert Reyes

ONE CONTAINER PER LINE

Sample Number [14]	Sample Description/Type [15]	Date/Time Collected [16]	Container Type [17]	Sample Volume [18]	Preservative [19]	Requested Testing Program [20]	Condition on Receipt [21]	Disposal Record No. [22]
PBOW9955W301	Soil	9-2-99	Glass, ~~25mm~~	250 ml	cool	Explosives 8330		
ditto	Soil	9-2-99	Glass	125 ml	Cool	TAL metals, pH		
PBOW9955W302	Soil			250 ml		Explosives SVOCs PCB		
ditto	Soil			125 ml		TAL metals		
PBOW9955W303	Soil			250 ml		Explosives SVOCs PCB	Custody seals intact received at 2°C	
ditto	Soil			125 ml		TAL metals		
PBOW9955W304	Soil			250 ml		Explosives 8330		AKD 9-4-99
ditto	Soil			125 ml		TAL metals		

Special Instructions: [23] 4 days Turn Around

Possible Hazard Identification: [24]
Non-hazard ☒ Flammable ☐ Skin Irritant ☐ Poison B ☐ Unknown ☐

Sample Disposal: [25]
Return to Client ☐ Disposal by Lab ☒ Archive (mos.)

Turnaround Time Required: [26]
Normal ☐ Rush ☐ 4 days

QC Level: [27]
I. ☐ II. ☐ III. ☐ Project Specific (specify):

1. Relinquished by [28] (Signature/Affiliation) Albert Reyes	Date: 9-3-99 Time:	1. Received by [28] (Signature/Affiliation) [signature]	Date: 9-4-99 Time: 09:30
2. Relinquished by (Signature/Affiliation)	Date: Time:	2. Received by (Signature/Affiliation)	Date: Time:
3. Relinquished by (Signature/Affiliation)	Date: Time:	3. Received by (Signature/Affiliation)	Date: Time:

Comments: [29]

White: To accompany samples
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5815 Middlebrook Pike
Knoxville, Tennessee 37921
(423) 588-6401

1T9I040105

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No.[30] 4747
Page 2 of 3

Project Name WW TP3 Project No. _____ Samples Shipment Date 9-3-99

ONE CONTAINER PER LINE

Sample[14] Number	Sample[15] Description/Type	Date/Time[16] Collected	Container[17] Type	Sample[18] Volume	Pre-[19] servative	Requested Testing[20] Program	Condition on[21] Receipt	Disposal[22] Record No.
PBOW99SSW305	Soil	9-2-99	G/211	250 ml	cool	Exp 8330		
ditto				125		TAL Metal		
PBOW99SSW306				250		Exp 8330		
ditto				125		TAL metals		
PBOW99SSW307				250		Exp 8380		
ditto				125		TAL metals		
PBOW9955W308				250		Exp 8330		
ditto				125		TAL metals		
PBOW9955W309				250		Exp 8330		
ditto				125		TAL metals		
PBOW9955W310				250		Exp 8330		
ditto				125		TAL metals		
PBOW99SDW301	Sediment			250		Exp 8330 SVOCs		
ditto	sediment			125		TAL metals		
PBOW99SDW302	sediment			250		Exp 8330 SVOCs		
ditto	sediment			125		TAL metals		
PBOW9955W302	Soil			125		VOCs		
PBOW9955W303	Soil			125		VOCs		
PBOW9955W311	Soil			125		Asbestos		
PBOW9955W312	Soil			125		Asbestos		

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H9I040105

Quantera ental

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Knoxville, Tennessee 37921
(423) 588-6401

ANALYSIS REQUEST AND CHAIN OF CUSTODY RECORD (cont.)*

Reference Document No. 4747
Page 3 of 3

Project Name WWTP3

Project No.

Samples Shipment Date 9-3-99

ONE CONTAINER PER LINE

Sample 14 Number	Sample 15 Description/Type	Date/Time 16 Collected	Container 17 Type	Sample 18 Volume	Pre-19 servative	Requested Testing 20 Program	Condition on 21 Receipt	Disposal 22 Record No.
PBOW99SSW313	Soil	9-2-99	~~GLASS~~	125ml	Cool	Asbestos		
PBOW99SSW314	Soil		~~GLASS~~	125ml	Cool	Asbestos		
PBOW99SSW301	Surface water		1L AMBER	2LT	Cool	SVOCs		
ditto			1L AMBER	1LT	Cool	Exp 8330		
ditto			1L AMBER	2LT	Cool	PCBs		
ditto			1L HDPE	1LT	HNO_3	TAL metals		
PBOW99SSW302			1L AMBER	2LT	Cool	SVOCs		
ditto			1L AMBER	1LT	Cool	Exp 8330		
ditto			1L AMBER	2LT	Cool	PCBs		
ditto			1L HDPE	1LT	HNO_3	TAL metals		

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*See back of form for special instructions.

MCA 3/15/91

DATA REVIEW AND VAILDATION REPORT – WASTEWATER TREATMENT PLANT

PLUM BROOK ORDNANCE WORKS SITE INVESTIGATIONS

Contract Number DACA27-98-D-0029
Delivery Order 0006

June 2, 2000

Prepared For:
U.S. Army Corps of Engineers
Louisville District

URS Greiner Woodward Clyde

101 South 108th Avenue
Omaha, Nebraska 68154

1.0 INTRODUCTION

URS Corporation was contracted by the United States Army Corps of Engineers (USACE), Louisville District, to complete a data review and validation for chemical data generated by Quanterra Incorporated, from soil and groundwater samples collected at the Plum Brook Ordnance Works (PBOW), Wastewater Treatment Plant. Pursuant to the USACE scope of work (SOW), one hundred percent of the data underwent a data review and 10 percent of the data for selected parameters underwent full validation. The data review and validation followed the general guidance provided in National Functional Guidelines for Organic Review (EPA, 1999) and National Functional Guidelines for Inorganic Review (EPA 1994). While these guidance documents were written for methods following the Contract Laboratory Program (CLP) Statement of Work (SOW), the guidelines were used where appropriate for the validated methods.

The data review included the review of the sample results and the quality control summary forms, while the data validation additionally included the review of raw data. The specific elements included in the data review and validation processes are identified in the subsequent sections. Where required, data were qualified as **U** (nondetect), **J** (estimated) or **R** (rejected) based on the data review and validation procedures.

This report is organized such that Section 1 summarizes the results of the data review and validations and the data usability for each Site. Section 2 provides the details of the data review. Sections 3 through 6 provide the details of the data validation for semivolatile organic compounds (SVOCs), explosives, polychlorinated biphenyls (PCBs) and metals, respectively.

1.1 Data Review Summary

Data were qualified based on sample preservation criteria, and laboratory control sample (LCS) and surrogate recoveries outside evaluation criteria. All qualifications for the Plum Brook Ordnance Works Wastewater Treatment Plant are presented in Table 1-1.

1.2 Data Validation Summary

In addition to the outlying parameters identified in the data review, data were qualified based on the initial and continuing calibration criteria. All qualifications for the Plum Brook Ordnance Works Wastewater Treatment Plant are presented in Table 1-1.

1.3 Data Usability

The data validation of explosives indicated that the retention time (RT) windows were established using nonstandard procedures. While the methods employed to determine RT were not standard procedures, the windows appear appropriate for proper identification since the standard compounds eluted during the windows. Also the validation of PCBs indicated that a secondary column, used for confirming the primary column compound identification, was not employed. Although there was no supportive confirmation for the sample data, chromatograms were reviewed to verify that the Aroclor identification was correct. While data were qualified as estimated due to outlying QC parameters, all data should be used for their intended purposes.

TABLE 1-1

WASTEWATER TREATMENT PLANT DATA QUALIFICATIONS

Sample Identification #	Analysis	Compound	Qualifier	Code
PBOW99SWW301	SVOC	All compounds	UJ	SP
PBOW99SWW302	SVOC	All compounds	UJ	SP
PBOW99SWW301	Explosive	All compounds	UJ	SP
PBOW99SWW302	Explosive	All compounds	UJ	SP
PBOW99SSW302	PCB	PCB 1254	J	SUR, ID
PBOW99SSW302	PCB	PCBs 1221, 1248, 1242, 1232, 1016, 1260	UJ	SUR, ID
PBOW99SSW302	SVOC	2,4-dinitrophenol, 4,6-dinitro-2-methylphenol	UJ	ICAL

J – Estimated quantitation.
UJ – Estimated non-detect.
ICAL – Initial calibration outside criteria.
ID – Secondary column confirmation.
SP – Sample preservation criteria.
SUR – Surrogate recovery outside criteria.

2.0 PLUM BROOK DATA REVIEW – SDG H9I040105

Sample Identification #	Sample Identification #
PBOW99SSW301	PBOW99SSW307
PBOW99SSW302	PBOW99SSW308
PBOW99SSW303	PBOW99SSW309
PBOW99SSW304	PBOW99SSW310
PBOW99SSW305	PBOW99SDW301
PBOW99SSW306	PBOW99SDW302

SDG H9I070101

Sample Identification #
PBOW99SWW301
PBOW99SWW302

2.1 Data Package Completeness

Were all items delivered as specified in the QAPP and COC?

No, there was no second column confirmation for PCB data in SDG H9I040105 (PBOW99SSW302 and PBOW99SSW303).

2.2 Laboratory Case Narrative

Were problems noted in the laboratory case narrative or cooler receipt form, which are not discussed in subsequent sections?

SDG H9I040105

The laboratory VOC case narrative stated that the internal standard recoveries for sample PBOW99SSW303 were outside method established criteria. The sample was reanalyzed and had similar results, indicating that a matrix effect was responsible for the internal standard criteria not being met. The sample results for the original sample and the re-analyzed sample results have been reported.

The laboratory PCB case narrative stated that samples PBOW99SSW302 and PBOW99SSW303 were reported with elevated reporting limits for Aroclor 1260 due to matrix interference.

SDG H9I070101

The laboratory case narrative stated that the laboratory received the samples at 10^0C.

The laboratory explosives case narrative stated that samples PBOW99SWW301 was reported with an elevated reporting limit for 2,6-DNT due to matrix interference.

2.3 Holding Times

Were samples extracted/analyzed within QAPP limits?

Yes, however the laboratory received the SDG H9I070101 samples at 10 ^{0}C,

outside the required 4 ± 2 °C. Therefore the sample results for SVOCs and explosives were qualified as estimated (**UJ/J**) based on the outlying cooler temperature.

2.4 Blank Contamination

Were any analytes detected in the Method Blanks, Field Blanks or Trip Blanks?

No.

2.5 Laboratory Control Sample

Were LCS recoveries within evaluation criteria?

No, benzyl alcohol was reported outside evaluation criteria for SDG H9I040105; however, associated samples were not analyzed for this compound, so no qualification of data was required based on outlying LCS recovery.

For SDG H9I070101 the following were outside criteria:

LCS ID	Method	LCS Compound	LCS Recovery	LCS Criteria
H9I050000-139	SVOCs	Hexachlorocyclopentadiene	11	15-99

Analytical data, which required qualification based on LCS data, are included in the table below.

Field ID	Analyte	Qual.
PBOW99SWW301	Hexachlorocyclopentadiene	UJ
PBOW99SWW302	Hexachlorocyclopentadiene	UJ

2.6 Surrogate Recoveries

Were surrogate recoveries within evaluation criteria?

No, the following surrogate recoveries were outside limits for SDG H9I040105.

Field ID	Surrogate	Recovery	Criteria
PBOW99SSW302	Decachlorobiphenyl	219	38-174

Sample PCB results for PBOW99SSW302 were qualified as estimated (**J/UJ**) based on the outlying surrogate recovery.

2.7 Matrix Spike and Matrix Spike Duplicate Recoveries

Were MS/MSD samples reported as part of either SDG?

Yes for SDG H9I070101.

Were all MS/MSD recoveries within evaluation criteria?

Yes.

2.8 Lab Duplicate Results

Were lab duplicates samples collected as part of either SDG?

No.

Were laboratory duplicate sample RPDs within criteria?

NA.

2.9 Field Duplicate Results

Were field duplicates samples collected as part of either SDG?

No.

Were field duplicates within evaluation criteria?

N/A.

2.10 Sample Dilutions

Were samples diluted which exceed 10X QAPP limits?

Yes, for SDG H9I040105 sample PBOW99SSW303 had elevated reporting limits for fluoranthene and pyrene due to elevated target compounds concentrations. Samples PBOW99SSW302 and PBOW99SSW303 had elevated reporting limits for Aroclor 1260 due matrix interference.

For SDG H9I070101, sample PBOW99SWW301 had an elevated reporting limit for 2,6-DNT due to due matrix interference.

2.11 Additional Qualifications

Were additional qualifications applied?

No.

3.0 FULL VALIDATION OF SVOC DATA – SDG H9I040105

This section describes the full validation for one soil sample, which was analyzed for semivolatile organic compounds by USEPA SW-846 Method 8270C. The sample was analyzed by Quanterra Incorporated of Knoxville, Tennessee, and submitted as part of sample delivery group (SDG) H0I040205. Samples included as part of this validation are listed below:

Sample Identification #
PBOW99SSW302

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Program National Functional Guidelines for Organic Review (USEPA 1999) where applicable to SW-846 Method 8270C. The evaluation criteria used during the validation were a combination of those criteria presented in Method 8270C and the laboratory criteria based on historical data.

Criteria evaluated included the following method performance criteria:

- Completeness of data package
- Significant problems identified in the Laboratory Case Narrative
- Sample preservation and holding times
- GC/MS instrument performance
- Initial calibration
- Calibration verification
- Method blank
- Surrogate recoveries
- Laboratory control samples
- MS/MSD samples
- Internal Standard areas and retention times
- Target compound identification and quantitation
- System performance and overall assessment of data
- Transcription errors

3.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested, for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete for this validation.

3.2 Problems Identified in the Laboratory Case Narrative

The laboratory case narrative indicated that several compounds in sample PBOW99SSW303 exceeded the calibration range of the instrument. The sample was analyzed at a dilution and the results for both analyses were reported. There were no other problems noted in the laboratory case narrative that were applicable to this validation.

3.3 Sample Preservation and Holding Times

Review of the sample collection and analysis dates involved comparing the chain-of-custody, the summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The laboratory case narrative and the cooler receipt form indicated that the samples were received at the recommended 4 $\pm$ 2 °C cooler temperature. Also, the samples were extracted and analyzed within holding time criteria of 14 days to extraction and 40 days to analysis.

3.4 Instrument Performance

GC/MS instrument performance checks were performed to ensure mass resolution, identification, and instrument sensitivity. Criteria for evaluation of instrument performance included possible transcription/calculation errors, adherence to instrument tuning frequency requirements, mass assignments, and ion abundance criteria. Instrument performance check samples were evaluated against the laboratory tuning criteria. No qualification of data was required.

Based on the raw data, the ion abundance criteria were within evaluation criteria for all masses, and no calculation or transcription errors were noted.

3.5 Initial Calibration

Calibration criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for semivolatile analyses. An initial calibration was analyzed at the beginning of the run sequence. At least five concentration standards were used to establish the initial calibration curve as required by Method 8270C. For the initial calibration, the response factors (RFs) were reviewed and were greater than 0.05 for all analytes.

Review of the initial calibration summary forms indicated %RSDs were $\leq$ 30 percent for calibration check compounds (CCCs) and less than 15 percent for non-CCCs with the exception of 2,4-dinitrophenol (23.2%) and 4,6-dinitro-2-methylphenol for ICAL 8/26/99, 1954. As a result, 2,4-dinitrophenol and 4,6-dinitro-2-methylphenol results for the sample PBOW99SSW302 were qualified as estimated non-detect (**UJ**).

Recalculations of the RFs and %RSD for eight standard compounds were performed, and no errors in calculation were noted.

3.6 Calibration Verification

Review of the sample chromatograms indicated the calibration verifications (CVs) were performed approximately every 12 hours of operation. Based on the review of continuing calibration raw data and summary forms, all RFs met the evaluation criteria of greater than 0.05 for all analytes. In addition, percent differences (%Ds) met the evaluation criteria of $\leq$ 20 percent for CCCs, and < 50 percent for non-CCCs.

Recalculation of the RF and %D for six standard compounds was completed, and no errors in calculation were noted.

3.7 Blank Samples

The purpose of the method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by USEPA SW-846 Method 8270C. All target compounds were reported as non-detect. Review of chromatograms indicated all peaks present were accounted for or the concentrations reported were below the method detection limit.

3.8 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per-sample basis. All surrogate recoveries were within the method acceptance criteria for sample PBOW99SSW302. Fifty percent of the recoveries were recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

3.9 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples were analyzed to assess accuracy and precision for the analyses. The MS/MSD summary form indicated the sample used as the batch MS/MSD sample, for the validated samples, was PBOW99SSW302. The MS had a recovery above QC limits for pyrene (129%), and all the MSD recoveries were within QC evaluation limits. There were no RPD evaluation limits defined by the laboratory, but the values ranged between 10-36% RPD and were considered acceptable for all the spiked compounds.

No qualifications are made on organic MS/MSD data alone and since the LCS and surrogate data for the validated samples were acceptable, no qualifications to the data were necessary.

Approximately fifty percent of the MS/MSD recoveries and RPD values were recalculated from the raw data and no calculation errors were noted.

3.10 Internal Standards

Internal standard (IS) performance criteria ensure that the GC/MS sensitivity and response are stable during each analytical run. IS areas must be within -50 percent to +100 percent and the IS retention times must be within 30 seconds of the IS continuing

calibration retention time. IS areas for the validated samples, and associated QC data in this SDG, were within evaluation criteria. All IS retention times were within criteria. The raw data were verified, and no transcription errors were noted.

3.11 Laboratory Control Samples (LCS)

A batch LCS was analyzed to assess the accuracy of the analytical process. All LCS recoveries were within evaluation criteria, with the exception of benzyl alcohol (1.8%). Since benzyl alcohol was not a target compound for this SDG, no qualifications to the data were necessary.

Approximately ten percent of the spiking compound recoveries for the LCS were recalculated using the LCS summary form, and no calculation or transcription errors were noted.

3.12 Target Compound Identification and Quantitation

For validation of the compound identification, chromatograms were reviewed to verify the major peaks were identified, the spectra of the identified compounds were verified against the library spectra, and the relative retention time was no greater than 0.06 different from the associated continuing calibration retention times. No anomalies were noted with the identification of the target compounds in the samples.

For the validation of compound quantitation, approximately twenty percent of the detected compounds were recalculated from the raw data. No calculation or transcription errors were noted.

3.13 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses be accepted for their intended use. Acceptable levels of accuracy and precision, based on MS/MSD, LCS, and surrogate data were achieved for this SDG with the noted exceptions. In addition, completeness, defined to be the percentage of analytical results which are judged to be valid, including estimated (J) data, was 100 percent for sample PBOW99SSW302.

4.0 FULL VALIDATION OF EXPLOSIVES DATA – SDG 070101

This section describes the full data validation for the analysis of one water sample analyzed for explosives following SW-846 Method 8330. Quanterra Environmental Services (QES) of Knoxville, Tennessee completed the analyses. The sample included as part of this validation is listed below:

Sample Identification #
PBOW99SWW301

The data were validated following the guidance outlined in USEPA Contract Laboratory Program National Functional Guidelines for Organic Review (USEPA 1999) where applicable to SW-846 methodologies. The evaluation criteria used during the validation were a combination of those criteria presented in Method 8330 and laboratory criteria based on historical data.

Criteria evaluated included the following method performance criteria:

- Completeness of data package
- Laboratory case narrative
- Sample preservation and holding times
- Initial calibration
- Retention time windows
- Calibration verificaiton
- Method blank contamination
- Laboratory control samples
- MS/MSD samples
- Target compound identification and quantitation
- System performance and overall assessment of data
- Transcription errors

4.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete for this validation.

4.2 Laboratory Case Narrative

The laboratory case narrative indicated the cooler was received above the recommended 4 ± 2 °C. This issue is addressed in the following section. The narrative also indicated

that the reporting limit for sample PBOW99SWW301 was elevated for 2,6-dinitrotoluene due to matrix interference. No qualification of data was required. No additional problems were noted in the case narrative.

4.3 Sample Preservation and Holding Times

Review of the sample collection and analysis dates involved comparing the chain-of-custody and the analytical run log for accuracy, consistency, and holding time compliance. Review of the chain of custody (COC) indicated the cooler temperature to be 10°C, which exceeds the 4 ± 2 °C criteria. All analytes for sample PBOW99SWW301 were reported as non-detect and were qualified as **UJ**. All samples were extracted within 14 days of sample collection and analyzed within 40 days of sample extraction. Therefore, no additional qualification of data was required.

4.4 Initial Calibration

Initial calibration criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for explosive analyses. As required by the method, the linearity of the calibration curve was established using at least five standard concentrations. All correlation coefficients (r^2 values) were above the required 0.990, showing linearity of the calibration curve. Ten percent of the r^2 values were recalculated and compared to the raw data. No transcription or calculation errors were noted.

4.5 Retention Times

Retention time (RT) windows are crucial to the identification of target compounds. EPA SW-846 specifies the RT windows as plus or minus three standard deviations of the mean absolute retention time from the initial calibration. The laboratory established the RT window as ± 2 percent of the retention time of the midlevel calibration standard from the initial calibration. This approach was used if the samples were analyzed on the day the initial calibration was established. If the samples were not analyzed on the day the initial calibration was established, the RT windows were ± 2 percent of the RT of the associated calibration verification sample. All results for the validated sample were reported as non-detect. Review of the chromatograms indicated all peaks present were either outside the RT window or the analyte concentration was below the reporting limit. The RT windows were recalculated and no transcription or calculation errors were noted. No qualification of data was required.

4.6 Calibration Verification

Continuing calibrations were performed at the required frequency of every 12 hours of analysis. Review of continuing calibration summary form indicated all percent differences (%Ds) met the evaluation criteria of < 15 percent.

Ten percent of the %Ds were recalculated for every continuing calibration sample and no calculation or transcription errors were noted.

4.7 Blank Samples

The purpose of the method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. A method blank sample was analyzed as part of the analytical batch. All target analytes were reported as non-detect for the method blank sample. The chromatogram was reviewed and all peaks present were either surrogate compound peaks or detection's of target analytes below the reporting limit.

4.8 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

MS/MSD samples are analyzed to assess the accuracy and precision for the analyses. An MS/MSD sample was not included as part of this SDG. However, the laboratory did analyze the LCS in duplicate (see below).

4.9 Laboratory Control Sample (LCS)

The laboratory analyzed a laboratory control sample (LCS) as part of the analytical batch. The LCS was analyzed in duplicate to also provide a measurement of precision. The LCS is a laboratory prepared standard which is prepared in the same manner as the investigative samples and contains all target analytes. Review of the LCS summary form indicated all recoveries were within the evaluation criteria presented on the LCS summary forms.

Ten percent of the recoveries for the LCS were recalculated from the raw data, and no calculation or transcription errors were noted.

4.10 Surrogate Spike Recoveries

A surrogate compound (1-chloro-3-nitrobenzene) was used to evaluate the overall laboratory sample preparation efficiency on a per-sample basis. Method 8330M requires the explosive surrogate recovery to meet method acceptance criteria. The surrogate recovery for the validated sample was within the evaluation criteria of 76 to 124 percent. The surrogate recovery on the summary form was recalculated and compared to raw data; no calculation or transcription errors were noted.

4.11 Target Compound Identification and Quantitation

All target analytes were reported as non-detect for the validation samples. Therefore, LCS recoveries were reviewed to verify the peaks identified as target compounds fell within the retention time. All peaks identified and quantified were within the retention time windows. As required by SW-846 Method 8330, compounds detected using the primary column were confirmed using a secondary column. The concentrations quantified from the primary column were reported in all cases. The secondary column was used for qualitative identification only. All reporting limits were reported on a wet weight basis.

For the validation of compound quantitation, approximately 10 percent of the LCS target analytes were recalculated from the raw data, and no calculation errors were noted.

4.12 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses be accepted for their intended use. Acceptable levels of accuracy and precision, based on LCS/LCSD and surrogate data were achieved for this SDG. In addition, completeness, defined to be the percentage of analytical results which are judged to be valid, including estimated (J) data, was 100 percent for this SDG. Note that the RT windows were established using nonstandard procedures. While the methods employed to determine RT windows did not follow standard procedures, the windows appear appropriate for proper identification since the standard compounds eluted during the windows.

5.0 FULL VALIDATION OF PCB DATA – SDG H9I040105

This section describes the full validation for one soil sample which was analyzed for polychlorinated biphenyls (PCB) by EPA SW-846 Method 8082. The sample was analyzed by Quanterra Incorporated of Knoxville, Tennessee, and submitted as part of sample delivery group (SDG) H9I040105. The sample included as part of this validation is listed below:

Sample Identification #
PBOW99SSW302

Evaluation of the analytical data followed procedures outlined in the USEPA Contract Program National Functional Guidelines for Organic Review (USEPA 1999) where applicable to SW-846 Method 8082. The evaluation criteria used during the validation were a combination of those criteria presented in Method 8082 and the laboratory criteria based on historical data.

Criteria evaluated included the following method performance criteria:

- Completeness of data package
- Significant problems identified in the Laboratory Case Narrative
- Sample preservation and holding times
- Initial calibration
- Calibration verification
- Method blank contamination
- Surrogate recoveries
- Laboratory control samples
- MS/MSD samples
- Target compound identification and quantitation
- System performance and overall assessment of data
- Transcription errors

5.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested, for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods.

All PCB sample data and QC documentation generated in this SDG was based on single-column analysis. SW-846 Method 8082 recommended that compound identification based on a single-column analysis should be confirmed on a second column, or should be supported by at least one other qualitative technique. Since there was no supportive

qualitative confirmation for the sample data in this packaged, all data was qualified as estimated (**J/UJ**).

5.2 Problems Identified in the Laboratory Case Narrative

The case narrative indicated that samples PBOW99SSW302 and PBOW99SSW303 had elevated reporting limits due to matrix interference. There were no additional problems identified in the laboratory case narrative. The following sections include discussions on the method performance criteria for this data validation.

5.3 Sample Preservation and Holding Times

Review of the sample collection and analysis dates involved comparing the chain-of-custody forms, the data summary forms, the raw data forms, and the chromatograms for accuracy, consistency, and holding time compliance. The cooler receipt form indicated the cooler temperatures were received at the recommended 4 $\pm$ 2 °C. The samples were extracted and analyzed within holding time criteria of 14 days to extraction and 40 days to analysis. No qualification of data was required due to sample preservation or holding time criteria.

5.4 Initial Calibrations

Initial calibration criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for PCB analyses. An initial calibration for PCBs using an Aroclor 1016/1260 mix, at five concentrations is recommended by SW-846 Method 8082. Method 8082 required only a single point calibration, for pattern recognition, of the additional five Aroclors (1254, 1221, 1248, 1242, and 1232). The laboratory calibrated all seven Aroclors as required by the method.

The %RSD of the RRF for each of the major Aroclor 1016/1260 peaks was below the method criteria of 20 percent, except peaks 1 through 4 for Aroclor 1260. Since several peaks were not within evaluation criteria, all data was qualified as estimated **J** (detects) or **UJ** (non-detects). Response factors (RFs) for each of six major peaks from Aroclor 1016, and for each of seven major peaks from Aroclor 1260 were recalculated, for the mid-range standard, and no transcription or calculation errors were noted. Recalculations of the percent relative standard deviation (%RSD) for the relative response factor (RRF) of each major peak in Aroclor 1016 and 1260 were performed, and no errors in calculation were noted.

5.5 Calibration Verification

Continuing calibrations were performed at the required frequency of every 12 hours of analysis, or every 20 samples analyzed, per Method 8082. Review and recalculation of the continuing calibration RFs from the raw data indicated no calculation or transcription errors.

The percent differences (%Ds) between the continuing calibration RFs and the initial calibration RRFs were recalculated to ensure they met the evaluation criteria of < 15 percent. Peak one of Aroclor 1016 (20%) exceeded the < 15 percent difference criteria;

however no data qualifications were necessary since the data was previously qualified due to the initial calibration. There were no calculation or transcription errors noted for the continuing calibration check sample.

5.6 Blank Samples

The purpose of the method blank samples is to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Method blank samples were analyzed with each analytical batch as required by Method 8082. All target compounds were reported as non-detect. Review of chromatograms indicated that no peaks were present, or were below the method detection limit. No data qualifications were required based on blank samples.

5.7 Surrogate Spike Recoveries

Surrogate compounds were used to evaluate the overall laboratory sample preparation efficiency on a per sample basis. The surrogate decachlorobiphenyl had a recovery above QC evaluation limits for the validated sample. Since the data was previously qualified under the initial calibration (see Sec. 5.4), no further qualifications were necessary. One hundred percent of the surrogate recoveries were recalculated, and the summary forms versus the raw data were verified. No calculation or transcription errors were noted.

5.8 Matrix Spike/Matrix Spike Duplicate (MS/MSD) Samples

The MS/MSD sample is used to assess accuracy and precision for the analyses. For this SDG there was no MS/MSD analysis performed.

5.9 Laboratory Control Samples (LCS)

Laboratory Control Samples (LCSs) were analyzed with each analytical batch as required by Method 8082. The LCS contained Aroclors 1016 and 1260 at appropriate concentrations. Review of the LCS summary forms indicated the LCS recoveries were within evaluation criteria for the batch encompassing the validated samples. The spiking compound recoveries for the LCS were recalculated, and no calculation or transcription errors were noted.

5.10 Target Compound Identification and Quantitation

For validation of the compound identification, chromatograms were reviewed to verify the major Aroclor peaks were identified. The spectrum of the identified compounds were verified against the spectra of each of the seven calibrated Aroclors, and the retention time of the major peaks matched the retention time of the major peaks from the associated calibrated Aroclor. No anomalies were noted with the identification of the target compounds in the samples.

For the validation of compound quantitation, approximately ten percent of the detected compound results were recalculated from the raw data, and no calculation errors were

noted. Review of the data indicated sample results were adjusted for moisture content, and the correct reporting limits were reported.

5.11 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses be accepted for their intended use. Acceptable levels of accuracy, based on LCS and surrogate data were achieved for this SDG with the noted exceptions. In addition, completeness, defined to be the percentage of analytical results which are judged to be valid, including estimated (J) data, was 100 percent for this SDG. Note that second column confirmation was not used to verify compound detection for this SDG. Although chromatograms were reviewed to verify the correct Aroclor identification, all data are qualified as estimated.

6.0 FULL VALIDATION OF METALS DATA – SDG H9I070101

This section describes the full data validation for two groundwater samples, which were analyzed for metals by EPA Method 3010A/6010B and EPA Method 7470. Samples were analyzed by Quanterra Incorporated of North Canton, Ohio and submitted as part of SDG H9I070101. Per the statement of work (SOW), 10 percent of this SDG was fully validated. Samples included as part of this validation are listed below:

Sample Identification #
PBOW99SWW301
PBOW99SWW302

The data were validated following the guidance outlined in USEPA Contract Laboratory Program National Functional Guidelines for Inorganic Review (USEPA 1999) where applicable to SW-846 methodologies. The evaluation criteria used during the validation were a combination of those criteria presented in Method 6010B and 7470 and laboratory criteria based on historical data.

Criteria evaluated included the following method performance criteria:

- Completeness of data package
- Laboratory case narrative
- Sample preservation and holding times
- Blank contamination
- Initial calibration verification
- Continuing calibration verification
- Laboratory control samples (LCS)
- Laboratory duplicate analysis
- Matrix spike/Matrix spike duplicate samples (MS/MSD)
- ICP serial dilution
- ICP interference check samples (ICS)
- Sample result verification
- Reporting limits

6.1 Data Package Completeness

The data package was reviewed to make certain that it contained the data contractually required in the deliverable. This included checking the data package for the results of each analyte requested for each field sample submitted in the analytical batch, along with requested QC documentation for the respective methods. The data package was complete for this validation.

6.2 Laboratory Case Narrative

The metals laboratory case narrative indicated that samples were received by the laboratory at 10 °C. This issue is discussed in the appropriate section below. No additional problems were noted in the metals case narrative.

6.3 Sample Preservation and Holding Times

Review of the sample collection and analysis dates involved comparing the chain-of-custody, the sample preparation logs, the analysis run logs, and raw data forms for holding time compliance. The samples were analyzed within the evaluation criteria of 28 days (mercury) and 6 months (other metals). The laboratory received samples at 10^0C, which is above the recommended 4 $\pm$ 2 °C cooler temperature; however, no qualification of data was required based on professional judgement and the stability of metals.

6.4 Blank Contamination

The purpose of blank samples was to evaluate the existence and magnitude of contamination problems emanating from laboratory activities. Initial calibration, continuing calibration, and preparation blanks associated with the validated samples were analyzed at the method recommended frequency and reported below the method detection limit for all metals with the exceptions listed below:

Blank ID	Analyte	Conc. (µg/L)	Comments
ICB	Potassium	-233.5	All associated samples ND
ICB	Manganese	0.6	All associated samples ND
ICB	Sodium	481.3	All associated samples ND
ICB	Mercury	-0.10	All associated samples ND
CCB(b)	Barium	0.7	All associated samples ND
CCB(b)	Potassium	-193.4	All associated samples ND
CCB(b)	Manganese	0.6	All associated samples ND
CCB(b)	Sodium	551.1	All associated samples ND
CCB(b)	Nickel	1.8	All associated samples ND
CCB(b)	Thallium	6.6	All associated samples ND
CCB(b)	Mercury	-0.11	All associated samples ND
CCB(a)	Aluminum	52.5	All associated samples ND
CCB(a)	Copper	-1.6	All associated samples ND
CCB(a)	Mercury	-0.11	All associated samples ND
CCB(a)	Sodium	615	All associated samples ND

The validated sample results for aluminum, barium, copper, manganese, mercury, nickel, potassium, sodium, and thallium were reported as non-detect and therefore, no qualification of data was required. One hundred percent of the blank sample results associated with the validated samples were compared to the raw data; no transcription errors were noted.

6.5 Initial Calibration Verification

Initial calibration verification (ICV) criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data for metals analyses. All ICV recoveries were within evaluation criteria and therefore no qualification was required based on ICV recoveries. One hundred percent of the ICV recoveries, associated with the validated samples, were recalculated and compared to the raw data; no calculation or transcription errors were noted.

A blank and one standard were used to establish the initial calibration curve for Method 6010B; a blank and five standards were used to establish the calibration curve for mercury. Review of the initial calibration data indicated the r^2 values were greater than 0.995 for all metals; therefore no qualification of data was required. One hundred percent of the initial calibrations were recalculated and compared to the raw data; no calculation or transcription errors were noted.

6.6 Continuing Calibration Verification

Continuing calibration verification (CCV) criteria were established to assess whether the instrument was capable of producing acceptable qualitative and quantitative data established by the initial calibration curve. CCV samples associated with the validated samples were analyzed at the method recommended frequency and had recoveries within the evaluation criteria; therefore, no qualifications were required based on CCV recoveries. One hundred percent of the CCV sample recoveries, associated with the validated samples, were recalculated and compared to the raw data; no calculation or transcription errors were noted.

6.7 Laboratory Control Sample

Laboratory control samples (LCS) were analyzed to assess the accuracy of the analytical method and to demonstrate laboratory performance. LCS recoveries were within evaluation criteria and therefore no qualification of data was required based on LCS recoveries. One hundred percent of LCS recoveries were recalculated and compared to the raw data; no calculation or transcription errors were noted.

6.8 Laboratory Duplicate Analysis

The laboratory duplicates a sample to assess method precision at the time of analysis. The laboratory did not analyze duplicate samples pairs however the laboratory analyzed a matrix spike and matrix spike duplicate sample pair to assess precision, as summarized in the following section.

6.9 Matrix Spike/ Matrix Spike Duplicate Samples (MS/MSD)

Matrix Spike/Matrix Spike Duplicate samples (MS/MSD) were analyzed to assess the effects of matrix interference and precision during analysis. The laboratory spiked and analyzed PBW99SWW301 in duplicate. All MS/MSD recoveries and relative percent differences (RPDs) were within the evaluation criteria; therefore, no qualification of data

was required based on outlying MS/MSD recoveries or RPDs. One hundred percent of the MS/MSD recoveries were recalculated and compared to the raw data; no transcription and calculation errors were noted.

6.10 ICP Serial Dilutions

Serial dilutions were analyzed to assess the potential significant physical or chemical inteferences due to sample matrix. The laboratory analyzed the serial dilution on sample PBOW99SWW301. The serial dilution percent differences (%D) were within evaluation criteria and therefore no qualification of data was required. One hundred percent of the serial dilution %Ds were recalculated and compared to the raw data; no transcription and calculation errors were noted.

6.11 ICP Interference Check Sample

Interference check samples (ICS) were analyzed to verify the contract laboratory's interelement and background correction factors for analysis of metals by ICP. The laboratory analyzed the ICS at the beginning and end of the analytical run (or a minimum or twice per eight hour analytical run) as required by the methodology. The ICS recoveries were within evaluation criteria; therefore, no qualification of the data was required. Twenty-five percent of the ICS recoveries were recalculated and compared to the raw data; no transcription and calculation errors were noted.

6.12 Sample Result Verification

One hundred percent of the validated sample results were recalculated to validate that analyte quantitation was derived accurately; no calculation errors were noted. Data summary forms were reviewed and compared to the raw data package; no transcription errors were noted.

6.13 Reporting Limits

The sample-reporting limit (RL) is the lowest concentration of an analyte that can be reported by the laboratory to be present in a sample result with a specified level of confidence. The RLs are a function of the sample characteristics, method quantitation, and laboratory performance. The raised RLs is this SDG were due to elevated metals concentrations.

6.14 Overall Data Assessment

Based on the criteria outlined, it is recommended that the results reported for these analyses be accepted for their intended use. Completeness, defined to be the percentage of analytical results that are judged to be valid, including estimated data (J), was 100 percent for this SDG.

Comment Responses

Document: **Quality Assurance Project Plan (QAPP) and Final Report, Limited Site Inspection for the Waste Water Treatment Plants 1 and 3.**
Name: **Ronald E. Nabors, Ohio EPA**

QAPP

1. General Comment: The Ohio EPA, DERR, would prefer to receive the Quality Assurance Project Plan under separate cover and have it referenced in all site investigation Work Plan submittals.

   Response: We apologize for not obtaining an OEPA, DERR preferred format to develop the Quality Assurance Project Plan (QAPP). We have prepared QAPP documents for projects in Illinois, Michigan and Ohio. The QAPP and associated FSP and DQO attachments were assembled for the Former Plum Brook Ordnance Works using the EPA Region 5 model QAPP, the format we typically use. We apologize for this inconvenience. If our office executes future phases of work for this Formerly Used Defense Site, we will incorporate the OEPA, DERR preferred format in preparing documents.

Final Report

1. General Comment: Since the Waste Water Treatment Plants 1 & 3 areas have been recommended for further studies/actions, Ohio EPA, DERR will not request changes to this document.

Response: Thank you!